



Australian
Competition &
Consumer
Commission

Review of the 1997 telecommunications access pricing principles for fixed line services

Draft report

September 2010



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List of abbreviations and acronyms

ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
BBM	building block model
CAPM	capital asset pricing model
CAN	customer access network
CCC	Competitive Carriers' Coalition
CSG	customer service guarantee
CPI	consumer price index
DAC	depreciated actual cost
DHC	depreciated historic cost
DORC	depreciated optimised replacement cost
DSLAM	digital subscriber line access multiplexer
LCS	local carriage service
LSS	line sharing service
LTIE	long-term interests of end-users
MEA	modern equivalent assets
MRP	market risk premium
NBN	national broadband network
NPV	net present value

ORC	optimised replacement cost
POI	point of interconnection
PSTN OA	public switched telephone network originating access
PSTN TA	public switched telephone network terminating access
RAF	regulatory accounting framework
RAB	regulatory asset base
SIOs	services in operation
TEA Model	Telstra Efficient Access Model
TPA	<i>Trade Practices Act 1974</i>
Tribunal	Australian Competition Tribunal
TSLRIC+	total service long-run incremental cost
ULLS	unconditioned local loop service
VHA	Vodafone Hutchison Australia
WACC	weighted average cost of capital
WLR	wholesale line rental

Summary

This draft report sets out the Australian Competition and Consumer Commission's (ACCC) proposed approach to the access pricing principles to apply to the declared fixed line services from 1 January 2011. These legacy network services make up the key wholesale and access services delivered over Telstra's copper network:

- unconditioned local loop service (ULLS);
- wholesale line rental (WLR);
- line sharing service (LSS);
- public switched telephone network originating access (PSTN OA);
- public switched telephone network terminating access (PSTN TA); and
- local carriage service (LCS).

The report forms part of the ACCC's review of access pricing for the declared fixed line services which began in December last year. Over the past decade the ACCC has generally been guided by its 1997 document *Access Pricing Principles—Telecommunications: a guide* (1997 Access Pricing Principles) when determining pricing principles and indicative prices for the declared fixed line services.

There has been increasing industry agreement that the pricing approach outlined in the 1997 Access Pricing Principles is no longer the most appropriate method for setting future access prices for the declared fixed line services. More recently the ACCC has signalled its interest in reviewing these guidelines given the changing nature of the telecommunications industry in Australia. In December 2009 the ACCC sought industry comment on the development of a new approach to access pricing for the declared fixed line services and canvassed various options with industry, such as the adoption of a 'building block' pricing approach.

In this draft report the ACCC sets out its preliminary views on its proposed new pricing principles for access to the six declared fixed line services. Draft pricing principles determinations, including indicative prices, are attached to this draft report.

At the time of writing, wide ranging changes to the telecommunications access regime were under consideration. The ACCC considers that its priority is to provide certainty and guidance to industry about access pricing for the declared fixed line services from 1 January 2011.

In the ACCC's view, the outcomes of this review are equally applicable to the current negotiate-arbitrate access regime and any future *ex ante* regulatory access framework. The ACCC may engage in further consultation, where necessary, if there are changes to the regulatory regime.

1 Introduction

This draft report sets out the ACCC's preliminary views on the access pricing principles that will guide it when considering access pricing for the fixed line services declared under Part XIC of the *Trade Practices Act 1974* (the TPA). The declared fixed line services are the ULLS, WLR, LSS, PSTN OA, PSTN TA and LCS.¹

This draft report includes:

- a discussion of the ACCC's proposed approach to access pricing for the declared fixed line services
- proposed new pricing principles
- the process that the ACCC will apply when implementing the pricing principles
- draft Pricing Principles Determinations and draft indicative prices.

1.1 Background to the review

In December 2009 the ACCC released a *Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services: Discussion Paper* (Discussion Paper), which commenced a review of the 1997 Access Pricing Principles. The Discussion Paper outlined a number of approaches to regulating access prices for the declared fixed line services. Six submissions were received in response to the Discussion Paper and are available from the ACCC website: <http://www.accc.gov.au>.

At the same time, the ACCC decided to maintain the existing pricing principles and indicative prices for the fixed line services until 31 December 2010 and foreshadowed that an alternative methodology for pricing may be adopted in the future.

The ACCC considers that it is timely to undertake this review of access pricing. All the submissions received by the ACCC in response to the Discussion Paper considered that such a review was required and the Australian Competition Tribunal (the Tribunal) has recently supported such a review.²

This draft report is written with specific reference to the six declared fixed line services supplied over Telstra's copper and fibre access networks. The new pricing principles and draft indicative prices are not intended to apply to any services supplied over the proposed National Broadband Network (NBN). The ACCC may develop separate pricing principles for services such as the mobile terminating access service (MTAS) and the domestic transmission capacity service (DTCS).

The ACCC has had regard to the submissions received in response to the Discussion Paper when writing this draft report.³

1 See ACCC, *Fixed Services Review Declaration Inquiry for the ULLS, LSS, PSTN OA, PSTN TA, LCS and WLR: Final Decision*, July 2009. Appendix C contains a short description of each the regulated fixed line services.

2 *Application by Telstra Corporation Limited ABN 33 051 775 556* [2010] ACompT 1 at [199], [239].

3 See Appendix B.

1.2 Structure of this paper

This report is structured as follows:

Chapter 2 sets out the consultation process for this review.

Chapter 3 describes the ACCC's proposed approach to access pricing for the declared fixed line services.

Chapter 4 discusses the proposed transition to new pricing principles that the ACCC intends to adopt as the basis for setting access prices of the regulated fixed line services. It provides an outline of the proposed new pricing principles and some guidance on implementation.

Chapters 5 – 8 detail the steps involved in implementing the proposed new pricing principles.

Chapter 9 includes draft indicative prices, based on the steps set out at Appendix A.

Appendix A explains how the ACCC has applied its proposed new pricing principles to estimate draft indicative prices, including the assumptions it has used in the price calculations.

Appendix B contains a summary of the submissions received in response to the Discussion Paper.

Appendix C contains a summary of the service descriptions for the six declared fixed line services that will be priced according to the new access pricing principles.

Appendix D sets out the legislative framework and the ACCC's approach to assessing the long-term interests of end users (LTIE).

Appendix E contains draft Pricing Principles Determinations for each of the declared fixed line services.

2 Consultation process

The ACCC seeks submissions on this draft report by **no later than 5.00 pm on Friday 22 October 2010**.

The ACCC prefers to receive electronic copies of submissions. Electronic submissions should be in either PDF or Microsoft Word format and allow for searchable text.

Please forward submissions and enquiries by email to the Contact Officer:

Contact Officer:

Please copy correspondence to:

John Skinner
Communications Group
Australian Competition and Consumer
Commission

Email: appreview@acc.gov.au

Email: john.skinner@acc.gov.au

To allow for an informed and consultative process, all submissions will be considered as public submissions and will be posted on the ACCC's website. If interested parties wish to submit commercial-in-confidence material to the ACCC they should submit both a public and a commercial-in-confidence version of their submission. The public version of the submission should clearly identify the commercial-in-confidence material by replacing the confidential material with an appropriate symbol or '[c-i-c]'.⁴

The *ACCC-AER information policy: the collection, use and disclosure of information* sets out the general policy of the ACCC and the Australian Energy Regulator (AER) on the collection, use and disclosure of information. A copy of the guideline can be downloaded from the ACCC website: <http://www.acc.gov.au>.

2.1 Review process

The ACCC encourages industry participants, other stakeholders and the general public to consider the proposed new pricing principles for the declared fixed line services set out in this draft report.

The ACCC invites submissions on any aspect of the matters discussed in this draft report.

After receiving submissions, the ACCC intends to release:

- a new access pricing principles guide for the declared fixed line services
- final Pricing Principles Determinations for each of the declared fixed line services, including indicative prices.

Wide ranging changes to the telecommunications access regime are currently under consideration. These include a move from a negotiate-arbitrate model to an *ex ante* regulatory regime.⁴ Until any changes to the telecommunications access regime take effect, the ACCC intends to apply the pricing principles and prices that result from this review in accordance with existing legislative requirements. The ACCC considers

⁴ For examples of the proposed changes, see *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009* introduced in September 2009.

that the outcomes of this review are equally applicable to the current negotiate-arbitrate access regime and any new *ex ante* regulatory access framework.

3 ACCC's approach to pricing access to the declared fixed line services

3.1 Access pricing principles

Section 152AQA of the TPA states that the ACCC must determine principles relating to the price of access to a declared service (Pricing Principles Determination). The ACCC is required to determine pricing principles in writing at the same time as a service is declared or varied, or as soon as practicable. A Pricing Principles Determination may include price-related terms and conditions and may specify indicative prices relating to access to the declared service.

The ACCC must have regard to a Pricing Principles Determination if it is required to arbitrate an access dispute in relation to a relevant declared service. However, the pricing principles are not binding on the ACCC, and parties to arbitrations are still able to address the ACCC on the relevance and applicability of the relevant Pricing Principles Determination, having regard to their particular circumstances. The ACCC considers that, although a party may argue against the relevant Pricing Principles Determination being applied to its particular case, it may help guide the commercial negotiation of access by providing greater certainty about the ACCC's views on reasonable access prices.

In making a Pricing Principles Determination, the ACCC is required to publish a draft determination, invite public submissions and consider submissions made during the consultation. Draft Pricing Principles Determinations for each of the declared fixed line services are at Appendix E.

3.2 ACCC to have regard to the LTIE

The TPA does not specify the matters the ACCC must take into account in making Pricing Principles Determinations relating to the price of access to declared services. However, the ACCC considers that it should have regard to the object of Part XIC of the TPA, which is to promote the LTIE of carriage services or of services provided by means of carriage services.⁵

Part XIC of the TPA provides that, when determining whether something promotes the LTIE, regard must only be had to the extent to which it achieves the following objectives:

- promoting competition in markets for listed services
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users⁶

5 Section 152AB(1) of the TPA. A carriage service has the same meaning as in the *Telecommunications Act 1997* where it is defined as a service for carrying communications by means of guided and/or unguided electromagnetic energy.

6 This is the ability of end-users of different networks to communicate — the value of the network to an end-user depends on the number of other users that network allows the end-user to reach. Without any-to-any connectivity, smaller networks could only offer services to their own end-users, and would therefore find it difficult to attract new users, regardless of their long-term efficiency.

- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which listed services are supplied.⁷

3.3 Key features promoting the LTIE

Reasons for the ACCC's proposed approach, including consideration of the LTIE, are set out in chapters 4–8, and a detailed explanation of the LTIE criteria is set out at Appendix D. More broadly however, the ACCC is of the view that the LTIE will be achieved by pricing principles with the following desirable features:

- a fair rate of return on investment (cost recovery)
- incentives for efficiency and innovation
- transparency and regulatory certainty
- competitive pricing.

In particular, it is the ACCC's view that these features promote competition in markets for the declared fixed line services, and encourage the economically efficient use of, and investment in, the infrastructure used to provide those services.

3.3.1 Cost recovery

The approach to access pricing should be cost based and generate, over time, expected revenue for a regulated service or services that is at least sufficient to meet the efficient costs of providing access to those services. Access pricing should not reflect monopoly rents and/or inefficient expenditure by the access provider. This means that the access provider should be able to recover its legitimate costs (operating expenditure, capital expenditure and tax) and earn a reasonable rate of return on its investment.

This will ensure that the access provider's legitimate commercial interests are met. It also aims to ensure that economically efficient investment in regulated infrastructure over the long term is encouraged, thereby promoting dynamic efficiency and the ongoing provision of services to consumers.

3.3.2 Efficiency and innovation

The approach to access pricing should provide incentives to reduce costs or otherwise improve productivity (e.g. by adopting the most appropriate technology) at any given point in time, and throughout time, subject to achieving certain levels of quality. This will generate access prices that are more likely to encourage efficient use of, and economically efficient investment in, infrastructure over the long term. This will in turn provide incentives for firms in downstream markets to innovate and to continually improve the price, range and quality of the services they provide to consumers.⁸

7 Subsection 152AB(2) of the TPA. In determining the extent to which a particular thing is likely to result the achievement of promoting competition and encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure, regard must be had to other matters listed in subsections 152AB(4), (6) and (7) of the TPA.

8 Dynamic efficiency involves having appropriate incentives for firms to invest, innovate, improve the range and quality of services, increase productivity and lower costs through time.

3.3.3 Transparency and regulatory certainty

The approach to access pricing should be transparent and provide regulatory certainty.

Transparency is important because it enhances confidence in the regulatory framework and provides a sound basis for commercial negotiations between parties on the terms of access.

Similarly, regulatory certainty and stability may encourage the efficient entry of firms and competition in dependent markets, and enable those firms to make appropriate investment decisions.

3.3.4 Competitive pricing

Access prices should be structured to:

- allow multi-part pricing and price discrimination when it aids efficiency
- prohibit a vertically integrated access provider from setting terms and conditions that discriminate in favour of its downstream operations, except to the extent that the cost of providing access to other operators is higher
- prohibit predatory pricing where prices for some services are set below the incremental cost of production with the aim of reducing competition or discouraging entry into the market.

A pricing approach with these features should encourage the efficient entry of firms and competition in dependent markets, resulting in more efficient sources of supply displacing less efficient sources at all stages in the production chain.

This in turn will encourage access seekers to produce those services most highly valued by end-users, improve customer choice and service quality and supply services in the most cost-effective way, resulting in a competitive market. Such a pricing approach will not allow the access provider to recover the consequential costs from access seekers which the provider may incur as a result of increased competition in downstream or upstream markets.⁹

⁹ Explanatory memorandum to the *Trade Practices Amendment (Telecommunications) Bill 1996*, p. 43.

4 Moving from TSLRIC+ to BBM

The following chapter explains the ACCC's proposed shift from total service long-run incremental cost (TSLRIC+) based pricing principles to building block model (BBM) pricing principles for the declared fixed line services, except for LSS which is estimated using a separate pricing model.

4.1 The 1997 Access Pricing Principles: TSLRIC+

In the 1997 Access Pricing Principles, the ACCC considered that the LTIE would be best be promoted by cost-based access prices based on the total service long-run incremental cost (TSLRIC) of providing the service, including a mark up for common costs (+).¹⁰ TSLRIC+ is the incremental or additional costs the firm incurs in the long term in providing the service, assuming all of its other production activities remain unchanged.

The 1997 Access Pricing Principles considered that TSLRIC+ pricing should be based on forward looking costs. 'Forward looking' means the perspective that is used to measure the costs to be included in the price. Forward looking costs are described in the 1997 Access Pricing Principles as:¹¹

...the ongoing costs of providing the service in the future using the most efficient means possible and commercially available. In practice this often means basing costs on the best-in-use technology and production practices and valuing inputs using current prices.

In telecommunications, both in Australia and internationally, the forward looking perspective to measuring TSLRIC+ for fixed line services involved continually revaluing the existing sunk assets used in providing these services. This revaluation was based on the asset's optimised replacement cost and occurred each time a pricing determination was made.

This is contrasted with the approach adopted in other sectors such as energy where the asset value is 'locked-in' and 'rolled-forward' from one regulatory period to the next.

In the 13 years since the release of the 1997 Access Pricing Principles there has been significant debate among industry participants regarding the appropriate approach to determining access prices for the declared fixed line services. Some of the main arguments against the continued application of a forward looking TSLRIC+ approach are:

- The continual revaluation of network assets means that there has been ongoing uncertainty over the level of access prices. It has also increased the risk of over- or under- recovery of costs by the access provider.
- Given that existing assets are revalued at optimised replacement cost, the current implementation of TSLRIC+ may have resulted in the past depreciation of existing asset values not being taken into account in the revaluation of network assets in each regulatory period. This may have resulted in over-recovery by the access provider.
- Calculating forward looking costs involves estimating the cost of providing the relevant service using modern equivalent assets (MEA). However, there is considerable debate regarding what constitutes a MEA.

10 1997 Access Pricing Principles, p. 29.

11 *ibid.*, p. 29.

- Given that the cost of ‘bypassing’ the access provider’s fixed network has been rising, rather than falling, the likelihood of investment by the access seeker in its own fixed network has fallen, particularly given the dynamic nature of Australian telecommunications markets. Telstra’s copper customer access network (CAN) appears to display enduring bottleneck characteristics, rather than being a network likely to be bypassed through technological and market developments.

The ACCC has historically adopted a ‘scorched node’ approach in modelling the cost of a replacement network. This was an intermediate, practical approach that retained the existing location of certain key features (nodes) of the access provider’s existing network, such as exchanges and pillars, while optimising other components of the network such as routes between and within nodes.

In contrast, a fully optimised TSLRIC+ model would be based on a ‘scorched earth’ approach.¹² As all network elements would be subject to most efficient/best practice analysis, this approach would produce a lower estimate of TSLRIC+ by removing all inefficiencies resulting from the historical development of the network.

Using the scorched node approach is therefore likely to have generated higher estimates of TSLRIC+, and thus higher access prices, than would have been obtained with a scorched earth approach.

4.2 Tribunal’s recent comments on TSLRIC+ pricing

In its recent decision affirming the ACCC’s rejection of Telstra’s ULLS undertaking, the Tribunal queried the appropriateness of certain aspects of TSLRIC+ pricing.¹³ In its decision, the Tribunal examined the implementation of TSLRIC+ in the context of the monthly ULLS charge proposed by Telstra and stated that it:

...has a basic difficulty with the proposition that the costs of a hypothetical new entrant, at least as modelled by Telstra, should form the basis for the access price.

The Tribunal notes that the ACCC has said that it may revisit its pricing principles in the light of the evolving nature of the telecommunications industry and the lack of deployment of competing end-to-end infrastructure by access seekers. In those circumstances, a simpler and more appropriate pricing methodology might be, for example, to apply a “regulated asset base” approach, like that used in relation to other regulated infrastructure providers. The Tribunal considers that such a review of the ACCC’s pricing principles is highly desirable.¹⁴

These views support the ACCC’s current review of access pricing for the declared fixed line services.

4.3 New pricing principles based on the building block model

In recent times, a consensus appears to have been reached among industry participants that a BBM should replace TSLRIC+ as the pricing approach to telecommunications services. All submissions to the Discussion Paper were in favour of moving to a BBM.

12 Under a scorched earth approach, the entire network, including the location of the nodes, is optimised. A scorched earth network is a fully optimised hypothetical network designed to minimise long-run costs based on the location of customers and forecasts of demand for services.

13 *Application by Telstra Corporation Limited ABN 33 051 775 556* [2010] ACompT 1 at [198]-[199], [239].

14 *Application by Telstra Corporation Limited ABN 33 051 775 556* [2010] ACompT 1 at [198]-[199].

The BBM is an established approach used to determine the revenue required by regulated businesses and has been widely adopted by Australian regulators in other sectors. The main difference between the BBM and TSLRIC+ is that under the BBM asset values are ‘locked-in’ using an initial regulatory asset base (RAB) as the basis for setting indicative prices.

An advantage of the BBM is that it allows the access provider to recover its efficient actual costs as well as a reasonable rate of return on, and a return of, its investments in existing sunk assets.

The ACCC intends to adopt a BBM with a locked-in RAB when determining principles relating to the price of access to the declared fixed line services under Part XIC of the TPA, excluding LSS for which prices are estimated using a model specific to providing those services.

4.3.1 How the BBM works

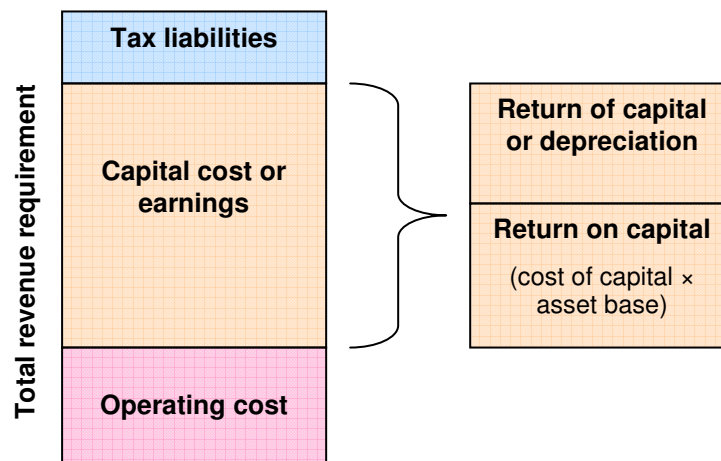
Implementing a BBM requires establishing the initial value of the regulated business’s RAB. There are various options for setting an initial RAB value (see section 5.1). Once the initial value of the RAB is established, it is ‘locked-in’ and rolled-forward from one year to the next.

The BBM accounts explicitly for each cost category or ‘building block’ faced by the regulated business, adding each of the blocks together to determine the business’s total revenue requirement. Revenues calculated using the BBM will cover a service provider’s efficient costs, including a commercial return on investment that is commensurate with its legitimate commercial interests.

The figure below diagrammatically summarises the BBM approach to determining the total revenue required by the regulated business to cover its forecast costs in any given period. The total cost is the sum of the forecast operating costs, capital costs and tax payments.

The capital costs are equal to the return on capital (equal to the cost of capital multiplied by the asset base) plus the return of capital (given by the depreciation). The ACCC is proposing to include the tax liabilities of the regulated business as a separate cost category in the BBM.

Figure 1 The Standard BBM



Source: Based on OECD, *Access Pricing in Telecommunications*, 2004, p. 168, amended by the ACCC.

4.3.2 LSS Pricing

Since 2002 the pricing principle applicable to LSS has been set to recover the incremental specific cost of providing the LSS. These costs comprise the capital expenditure and operating and maintenance costs of IT systems for ordering and provisioning LSS, and operating costs associated with LSS product management and front-of-house operations.

The establishment of the LSS price under this framework required the development of a separate pricing model. As a consequence of the LSS being priced by reference to separate LSS-specific costs, cost allocation factors cannot be directly applied to LSS within the BBM using common costs spread between existing BBM services. LSS has its own specific costs in relation to facilitating service provision and there are no other capital and operating costs which are allocated to the service under the approach adopted in the BBM.

As a result the ACCC's current view is that the LSS price should be determined outside the BBM framework through the continuing use of the separate specific cost model.

4.4 ACCC's reasons for the proposed approach

The ACCC considers that moving to a BBM pricing approach meets the objective of promoting the LTIE. This conclusion is supported by the arguments against the continued application of TSLRIC+ pricing set out above.

By locking-in a value for the RAB, the BBM will improve certainty for both the access provider and access seekers. This will enable them to make efficient decisions regarding their future investment patterns and general business plans, thereby promoting economically efficient investment in infrastructure. Locking-in a value for the RAB will promote predictable revenue and price paths and minimise the prospect of windfall gains or losses. It will reduce the risk that efficient expenditure will not be recovered, which will in turn promote efficient investment in infrastructure and promote competitive entry and competition in the relevant markets.

The ACCC considers that the BBM pricing approach meets the objective of ensuring that the access provider is adequately compensated for its costs over time. As noted above, the BBM calculates the revenue required to cover the access provider's efficient costs, including a commercial return on investments. This is also consistent with the general regulatory principle that a regulated business should expect to receive sufficient revenue to allow it to cover all expected prudent expenditure necessary to maintain a given level of service at each period into the future.¹⁵

This means that the access provider's legitimate commercial interests are met and investment in regulated infrastructure over the long term is not discouraged. This promotes dynamic efficiency and the ongoing provision of services to consumers and efficient investment in infrastructure by the access provider.

15 Darryl Biggar, *Incentive Regulation and the Building Block Model* (presented at the Australian Conference of Economists 2004), 28 May 2004, p. 2, available on the Editorial Express website at: <<https://editorialexpress.com/conference/ACE2004/program/ACE2004.html>> (accessed 24/06/2010).

4.5 Implementation

The proposed framework for implementation of the BBM pricing approach is discussed in chapters 5 to 8.

The framework includes:

- setting the opening RAB
- calculating the revenue requirement
- allocating costs to services
- setting prices for specific services
- determining the structure of prices.

Conceptually, the underlying framework can be illustrated in the following way:

Figure 2 Setting indicative access prices for regulated fixed line services

Step 1: Set the opening RAB

The initial opening RAB is locked-in and rolled-forward from one year to the next. The rolled-forward RAB will include capital expenditures, depreciation and asset disposals.



Step 2: Calculate the revenue requirement

The aggregate revenue required to provide services through the network is calculated by determining the amounts required under each cost block. The formula for calculating the revenue requirement is:

$$\mathbf{RR = OPEX + (RAB * WACC) + DEP + TAX}$$

where

RR is the revenue requirement
OPEX is operating expenditure
DEP is depreciation
TAX is tax liabilities

Tax is calculated using the following formula:

$$\mathbf{TAX = (Pre-tax\ RR - (DEP + INT + OPEX)) * corporate\ tax\ rate}$$

where

INT is interest payments



Step 3: Allocate a share of the revenue requirement to specific services

A share of the revenue requirement is allocated to each declared fixed line service using cost allocation factors.



Step 4: Determine unit prices for each declared fixed line service

The revenue requirement allocated to each declared fixed line service is divided by the forecast demand for that service to calculate an average unit price.



Step 5: Determine the price structure for each declared fixed line service

The average unit prices calculated in step 4 may be de-aggregated into more detailed price structures.

5 Setting the initial RAB

This chapter sets out the ACCC's proposed approach to setting the initial RAB. The RAB is the value attributed to the network assets used by the access provider in providing the regulated services. The valuation methodology used for setting the initial RAB has substantial implications for access prices calculated using a BBM.

5.1 The initial RAB

A key requirement for the BBM is to establish the initial value of the access provider's RAB. The initial RAB is a dollar value attributed to all the network assets used by the access provider in providing the regulated services. Once it has been calculated, the value of the initial RAB is 'locked-in' and used as the starting point for setting access prices.

Key considerations in setting an initial RAB include the level of past recovery on the assets by the access provider, the access provider's legitimate commercial interests, and ensuring incentives for efficient future investments in network assets. More simply, the main issue in setting the initial RAB is how to assign a value to the access provider's sunk network assets. An important objective of the BBM is to allow the access provider to recover its previous costs of investing in sunk infrastructure as well as its efficient and prudent costs of investment in new network assets. The Tribunal expressed similar views, stating that the access provider's legitimate business interests would be met by access prices that allow it to receive a commercial return on its prudent (past) investment in infrastructure.¹⁶

Potential values for the initial RAB range from scrap value to optimised replacement cost (ORC). While scrap value could be justified by reference to the sunk nature of the copper network, setting the initial RAB on this basis would be inconsistent with the access provider's legitimate commercial interests. Not allowing an access provider to recover these costs could mean that it (or others) may be unwilling to make sunk investments in the future.

Establishing the initial RAB raises a number of issues which will only arise once—at the commencement of the regime. In this respect, this is an improvement on the TSLRIC+ approach, where the RAB was continually revalued. These issues are discussed in the following four parts:

- whether to adopt a single RAB including all assets or a separate RAB for each asset
- the assets to be included in the RAB
- whether the access provider's past recovery on the assets should be taken into account when valuing the assets
- the valuation methodology used to value the assets.

16 *Application by Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1 at [244].*

5.2 Single RAB or multiple RABs?

Some telecommunications infrastructure is common to multiple services, while other elements of infrastructure are unique to a specific service.¹⁷ The Discussion Paper called for submissions on whether the ACCC should set:¹⁸

- separate RABs for each of the declared fixed line services by allocating infrastructure costs to the different services, or
- a single RAB, from which infrastructure costs can then be allocated to services using cost allocation rules.

All submissions received by the ACCC in response to the Discussion Paper favoured the adoption of a single RAB. Telstra and a number of other submitters noted that the adoption of a single RAB would be administratively easier to implement and minimise the risk of pricing inconsistencies.¹⁹

5.2.1 ACCC's proposed approach

The ACCC proposes to adopt a single RAB, from which infrastructure costs can then be allocated to services using cost allocation rules (these rules are set out in section 7.1 below.)

5.2.2 ACCC's reasons for the proposed approach

The ACCC considers that the adoption of a single RAB creates transparency for industry participants. A single RAB is simple and practical to implement and avoids the complexity associated with establishing and rolling forward multiple RABs.

5.3 Assets to be included in the RAB

The ACCC proposes to include assets from the access provider's network in the initial RAB, comprising assets from the CAN and assets that are not part of the CAN (i.e. core network assets). The ACCC proposes to include the following CAN and core assets in the initial RAB:

CAN Asset Class	Core Asset Class
<ul style="list-style-type: none"> ▪ Ducts and pipes ▪ Copper cables ▪ Other cables ▪ Pair gain systems ▪ Radio CAN ▪ Other assets 	<ul style="list-style-type: none"> ▪ Switching equipment - Local ▪ Switching equipment - Trunk ▪ Switching equipment - Other ▪ Inter-exchange cables ▪ Transmission equipment ▪ Radio bearer equipment ▪ Satellite Equipment ▪ International network cables

The listed assets are 'joint' or shared assets. They are used to provide a number of services, including non-declared services. Only a proportion of the cost of these shared assets is allocated to the declared fixed line services.

17 For example, both the ULLS and the WLR services require access to the copper loop, while the WLR also requires access to the switching equipment in the exchange buildings. In contrast the PSTN OTA and the LCS require access to the core network, while not requiring any CAN charges in their own right.

18 See Discussion Paper, pp. 33, 38.

19 See Telstra submission, p. 34.

Three asset classes — data equipment, mobile network and terminal equipment, and customer equipment — were excluded from the assets included in the RAB because these assets are not used by the declared fixed line services.

5.4 Past recovery

In setting initial values for the assets, the ACCC must decide whether to take into account past recovery received by the access provider for those assets. The Discussion Paper called for submissions on how past compensation to the access provider should be taken into account when setting the opening RAB.²⁰

The majority of submissions favoured an approach where the access provider's past recovery of capital investment is taken into account in setting the opening RAB. Telstra submitted that historical payments received by the access provider were not relevant to setting a forward-looking price. It suggested that the initial asset base should be valued on the basis of the remaining annuity payments due after the past decade of application of the tilted annuity under the TSLRIC+ model.

5.4.1 ACCC's proposed approach

The ACCC proposes to take the access provider's past compensation into account when setting the opening RAB.

The ACCC's approach to depreciation when setting the initial RAB will be consistent with the future approach to depreciation and capital expenditure. This will minimise cost over-recovery or cost under-recovery over the long term by taking into account past depreciation as outlined in the Regulatory Accounting Framework (RAF) accounts provided by the access provider.

5.4.2 Reasons for ACCC's proposed approach

Under the TSLRIC+ approach adopted in 1997, regular revaluations of infrastructure assets resulted in valuations of the access provider's assets which were significantly above the access provider's actual cost of those investments.²¹ This is because the cost of replacing the infrastructure that provides fixed line services has been increasing—driven by increases in the costs of the largest components of fixed line services, such as ducts and pipes—rather than decreasing, as was assumed when the regime began. In addition, the access provider has continued to receive a return on and of capital on assets that have continued in use well beyond their economic lives (as originally assumed for depreciation purposes).

The ACCC therefore considers that past compensation received by the access provider up to the date of setting the RAB should be taken into account when valuing the initial RAB. No further adjustments for any estimated past over- or under-recovery will be made after the initial RAB is set.

This ensures that access seekers, and ultimately end users, are not charged more than once for the access provider's costs of investing in the existing assets. Prices that reflect the actual cost of investment and do not over compensate the access provider promote competitive neutrality and ensure that pricing for access seekers is more

20 Discussion Paper, p. 38.

21 Telstra's product profitability for the PSTN for the financial year ending 30 June 2010 was 59 per cent: Telstra Corporation Limited and controlled entities *Full year results and operations review 2010* p. 9.

closely aligned with the access provider's actual costs of wholesale services. As the access provider uses these wholesale services to provide its own downstream retail services, this will increase competitive tension in those downstream retail markets.

5.5 Valuation method

Once the assets to be included in the RAB are identified, the ACCC must value those assets. The Discussion Paper sets out two broad valuation methodologies:²²

- a revenue-based approach, which values assets on the basis of forward looking future revenues and includes the net present value (NPV) methodology and the opportunity cost methodology
- a cost-based approach, which values assets on the basis of the cost of investing in the infrastructure and includes the depreciated actual cost (DAC) methodology and the depreciated optimised replacement cost methodology (DORC).

The ACCC must also decide whether to adopt the same valuation methodology for all assets, or to adopt different valuation methodologies for different assets.

The Discussion Paper called for submissions on the appropriate valuation methodology for the ACCC to adopt, and whether it should be applied to all assets. Telstra submitted that it favoured a DORC methodology for all assets. All other submissions recommended a DAC methodology for valuing all assets.

5.5.1 ACCC's proposed approach

The ACCC proposes to adopt an initial RAB value of \$7.5 billion for CAN assets and \$5.8 billion for Core assets based on a DAC valuation methodology. The process undertaken by the ACCC is described in section 5.5.2 below.

5.5.2 ACCC's reasons for the proposed approach

Revenue-based approach or cost-based approach

Revenue-based methodologies value assets on the basis of forward-looking, future revenues. There is some circularity associated with this approach, because current regulated prices are used to estimate the cash flows for which future regulated prices are to be derived. The existing indicative prices were determined on the basis of estimated costs generated by Telstra's PIE II cost model,²³ international benchmarking, and submissions received during extensive consultation processes.

The ACCC does not consider that the circularity inherent in revenue-based valuation methods would prevent the use of this approach, because the current indicative prices have been subject to extensive regulatory scrutiny.

22 See Discussion Paper, pp. 35-38.

23 The PIE II model is the PSTN Ingress and Egress Model II network cost model. The ACCC used the PIE II network cost model in making its 2008 ULLS Pricing Principles and Indicative Prices Determination. It was described by the Tribunal in *Application by Telstra Corporation Limited ABN 33 051 775 556* [2010] ACompT 1at [80] as follows: "The PIE II Model is a total long-run incremental cost model. It is said to determine, on the basis of various inputs, the network elements which would be necessary to construct a CAN, the costs of those elements, the annual amounts necessary to recover those capital costs, the operational and maintenance and indirect costs applicable to the CAN and the proportion of the CAN costs that relate to the ULLS."

However, the ACCC has some concerns about using a revenue-based approach to set the initial RAB value. While a revenue-based RAB valuation is based on the estimated costs of providing services, the costs are not the actual costs incurred by the access provider. Of necessity, the underlying initial RAB valuation would primarily be derived from the past application of a TSLRIC+ approach to setting prices, using the estimated ‘forward looking’ costs of a hypothetical new entrant. The ACCC considers that a cost based approach that uses actual, objectively verifiable costs is more transparent and objective than a revenue-based approach.

Choosing an appropriate cost-based approach

The following cost-based methodologies may be used to value the initial RAB:²⁴

- DAC – adjusts the historic cost of an asset by the proportion that the costs have been recovered
- depreciated current replacement cost – how much it would cost to replace the asset in substantially the same form at today’s prices
- DORC – values assets at the cost of replacing it with a MEA.

Each of these approaches accounts for past depreciation. Both the depreciated current replacement cost and the DORC approaches rely on an estimate of replacement costs (although DORC uses an optimised replacement cost). In contrast to these replacement cost approaches, the DAC approach uses actual depreciation as recorded in the access provider’s historical accounts.

The ACCC considers that a cost based valuation approach that allows the access provider to recover its actual investment costs will best promote the legitimate commercial interests of the access provider. The ACCC has had regard to this criterion when considering the suitability of the various cost based approaches. It has concluded that using a DAC valuation will, on balance, best promote the access provider’s legitimate commercial interests since it uses objective, verifiable data on past investments and depreciation. As noted below, it is also the preferred approach for promoting efficient future investment in sunk assets.

Further, the DAC approach has the advantage of being well known, having been implemented in other regulated industries over the past decade. While the ACCC acknowledges that a DORC approach was used to set the initial RAB value in the energy industry, it considers that many of the reasons for doing so were specific to that industry and do not apply to the telecommunications industry.

The ACCC’s detailed reasons for using a DAC valuation method are set out below.

Encouraging efficient use of, and investment in, infrastructure

Replacement cost approaches (such as DORC and TSLRIC+) are often claimed to have efficiency benefits when applied to monopoly industries because they replicate or mimic the behaviour observed in competitive markets.

However, the ACCC has for some time noted the limitations of replacement cost approaches like TSLRIC+ to the pricing of fixed network legacy services. While the underlying rationale for the use of replacement cost approaches—that is, to promote efficient ‘build/buy’ signals—remains valid, its continued application may be questioned in the current telecommunications environment.

24 Discussion Paper, p. 25.

In particular, it has become clear that Telstra's copper CAN displays enduring bottleneck characteristics, rather than being a network likely to be bypassed through technological or market development. It is also unlikely that competitors will build alternate CAN infrastructure. The ACCC therefore considers that a replacement cost pricing approach, with its rationale of providing efficient 'build/buy' signals, is less applicable in the present environment.

Conversely, a DAC pricing approach provides efficient investment incentives because access prices are set to allow the access provider to recover its actual capital costs. In theory, sunk costs are irrelevant to the access provider's incentives to undertake future investments in infrastructure. However, a valuation method that values sunk assets at less than their actual costs could prevent an access provider from recovering the full costs of any future investments in sunk assets. This risk, which is often termed the risk of regulatory opportunism, could deter the access provider (and other market participants) from undertaking future investments in sunk assets, because they would lack confidence that the regulatory arrangements will permit them to recover the costs of those investments.

To avoid this risk, and to maintain investors' incentives to undertake efficient investments in sunk assets, the ACCC considers the initial RAB should be set to allow past investments to be recovered. The roll-forward mechanism included in the BBM will permit future prudent and efficient investments in sunk assets to be recovered over the lives of those assets.

There are concerns that a DAC approach may give access providers an incentive to keep redundant and over-designed assets in the asset base to continue to earn a return on them. Investors in competitive markets do not get returns on assets that are redundant, over-designed or technologically obsolete.²⁵

In theory, the optimisation associated with DORC removes these assets from the asset base (and associated returns). However, the models previously used to estimate optimised values have been criticised for their severely limited optimisation of the network. No model currently exists that is capable of fully optimising the access provider's network. Even if such a model existed, the ACCC would still have concerns about the use of a DORC valuation. A major concern is that a DORC valuation would compensate the access provider for investments it has not actually made and this could distort investment incentives. In addition, estimating hypothetical costs to obtain a DORC valuation would be a complex, subjective exercise that is less transparent and verifiable than using actual costs under a DAC approach.

Promotion of competition

Given that bypass of the existing CAN infrastructure is unlikely, the initial RAB value set for those assets has no implications for competitive neutrality. Competitive neutrality is achieved where access seekers face wholesale prices for bottleneck services which reflect the actual costs of service provision.

Competitive neutrality will be promoted in downstream markets provided that pricing is non-discriminatory, and there is no scope for costs to be loaded onto the services provided to access seekers relative to the competing services provided by the access provider itself.

25 For future investments, the ACCC proposes to build incentive mechanisms into the BBM to only allow the access provider to recover the costs of prudent investments.

The ACCC considers that adopting a BBM will promote competition in downstream markets by ensuring that prices reflect future efficient and prudent costs.

Reliability

The ACCC has also had regard to the reliability of the different valuation methodologies. Replacement cost approaches have a higher level of subjectivity involved relative to actual cost approaches. Replacement cost valuations cannot be audited in the conventional sense since they rely on subjective judgements about replacement options and the level of optimisation.²⁶

Calculating the replacement cost of the MEA is likely to increase disputation in the implementation of any replacement cost approach. Issues will arise which allow significant scope for disputation – for example, what is the MEA of the copper network? Is it another copper network or a fibre network? Significant adjustments would also be required for the difference in service potential – for example, a new copper network would outperform the existing copper network, since the existing network has deteriorated over time. Similarly, a new fibre network would perform more effectively than the existing copper network.

In contrast, a DAC approach is relatively simple and objective. Values for actual gross historic costs for fixed network assets can be derived from regulatory and/or general ledger accounts. As this information comes from audited accounts prepared by the regulated entity, there is less scope for dispute over the cost information compared to hypothetical and subjective replacement costs. A DAC approach is based on the best available objective and independently verified information.

Conclusion

The ACCC recognises that both DAC and DORC pricing methodologies contain strengths and weaknesses. However, the ACCC considers that efficient ‘build/buy’ incentives promoted by a DORC approach are now less relevant in the current environment of an aging legacy network and the delivery of services across a variety of emerging technologies.

A DAC valuation methodology is a widely accepted pricing methodology which is objective and relatively simple to implement. It ensures that the access provider is able to achieve a commercial return on its actual investments.

It is the ACCC’s preliminary view that adopting a DAC methodology to value the relevant telecommunications infrastructure is in the LTIE, and will meet the legitimate commercial interests of the access provider.

5.5.3 Assessment of estimated initial RAB values

As noted above, the ACCC proposes an initial RAB of \$7.5 billion for CAN assets and \$5.8 billion for Core assets. The ACCC has used historic costs in the RAF accounts as the basis for setting these values.

26 Ofcom has also noted that an optimised costing approach “is not appropriate as there is a great deal of subjectivity in the modelling and it is important that the model is right if it is to be used. Also, the use of such a model could require Ofcom to become intrusively involved in BT’s internal network, planning and investment decisions”: Ofcom, *Valuing Copper Access: Final Statement*, August 2005.

Use of the RAF accounts in setting the initial RAB

The ACCC acknowledges that the book value of assets contained in the RAF is only an approximation of the actual costs incurred by the access provider. The ACCC has expressed concerns in the past about the incomplete nature of the access provider's records on its long-lived network assets. In particular, CAN ducts, pipes and copper cables were put in place many years ago when requirements were different and account keeping was generally less robust. In addition, the access provider was not subject to the same accounting obligations and disclosure rules that have applied since privatisation and corporatisation.

In deciding to adopt a DAC valuation approach, the ACCC has been mindful of setting the initial RAB based on the best objective and verifiable information available. Although it recognises the limitations of the information, the ACCC believes that the access provider's RAF data represents the most complete and accurate account of the historic cost of the fixed line network. It is the ACCC's view that \$7.5 billion for CAN assets and \$5.8 billion for Core Assets, as derived from the RAF data, represents a fair value for these assets.

The ACCC considered whether it should adjust the DAC valuation method to remove or write down assets that might be assessed as inefficient and imprudent. It also considered whether it should use different estimates for the remaining asset lives of the existing ducts and pipes and copper cables, since much of the existing network would have already been fully depreciated. Both of these adjustments would be expected to reduce the DAC value of Telstra's existing assets. Given that reliable information on which to base such adjustments is not available, the ACCC considers that it is more appropriate to use the verifiable data in the RAF. Use of unadjusted DAC-based values is, in the ACCC's view, supported by the similarity between its RAB estimates and the value for CAN assets implied by the Financial Heads of Agreement (FHOA) discussed below.

The Financial Heads of Agreement and the initial RAB

On 20 June 2010, a non-binding Financial Heads of Agreement (FHOA) between Telstra and the company responsible for the NBN (NBN Co) was announced.²⁷ The FHOA between Telstra and NBN Co, worth an expected value of \$9 billion (in net present value terms), provides for the reuse of Telstra infrastructure by NBN Co and the migration of customers from Telstra's networks to the new wholesale-only fibre network proposed to be built and operated by NBN Co.

The \$9 billion payment could be viewed as a good indication of Telstra's valuation of its copper network. Optus has submitted, in a letter dated 13 July 2010, that all the payments Telstra will receive under the agreement represent a 'return of capital' and that the level of the RAB should be reduced accordingly. Optus therefore considers that the ACCC should make no allowance for a 'return of capital' component when it calculates the required revenue.

However, it should be noted that the \$9 billion will generally comprise:

27 Media Release: *Minister for Broadband, Communications and the Digital Economy: Agreement between NBN Co and Telstra on the roll out of the National Broadband Network*, 20 June 2010 http://www.minister.dbcde.gov.au/media/media_releases/2010/060

- lease payments over time for the reuse of suitable Telstra infrastructure, including pits, ducts and backhaul fibre by NBN Co, as it starts to rollout its new network, and
- migration payments as the copper and HFC networks are de-commissioned.

The lease payments will include recovery of operating and capital expenditures incurred by Telstra before lines are de-commissioned. Therefore the payments under the FHOA reflect recovery of operating expenditure and a return on capital, as well as the return of capital.

The \$9 billion payment also includes backhaul infrastructure and exchange buildings, which are not included in the CAN. If the value of these assets is deducted from the \$9 billion payment, the ACCC is of the view that Telstra's own valuation of its CAN assets implied from the FHOA would be close to the \$7.5 billion DAC valuation for CAN assets calculated by the ACCC.

The ACCC considers that the valuation of the CAN assets implied by the FHOA supports a conclusion that a DAC valuation of \$7.5 billion is likely to satisfy Telstra's commercial interests.

The ACCC notes the concerns of Optus that the migration payments received by Telstra be taken into account in the valuation of the initial RAB. Optus has suggested that a failure to do so will potentially lead to Telstra recovering a return of capital twice: once in the form of access prices and again in the form of migration payments. However, the FHOA is a non-binding agreement and there is still considerable uncertainty as to when the migration payments will commence. Further, the migration payments are intended to be paid as services cease being provided by the CAN network. When this occurs, the revenue received by Telstra for providing fixed line access services will fall (including the revenue relating to a return of capital).

In the process of reviewing prices and determining the revenue requirement for subsequent regulatory periods, the ACCC will take into account any migration payments received by Telstra and any impact that de-commissioning the network may have on the RAB.

6 Determining the revenue requirement

This chapter sets out the process for determining the revenue requirement to be recovered by the access provider for each year over the regulatory period. This involves consideration of the following:

- forecasts of operating expenditure for each year
- a return of capital to the regulated firm (i.e. depreciation)
- a return on capital to the regulated firm (i.e. compensating the firm for its efficiently incurred investments)
- efficiency mechanisms and service quality incentives
- forecast tax liabilities.

The ACCC will determine the revenue requirement for each year over the regulatory period using the following formula. For example in year one:

$$RR_1 = \underbrace{Expected(OPEX_1) + (RAB_0 * WACC)}_{\text{Return on capital}} + \underbrace{Expected(DEP_1) + Expected(TAX_1)}_{\text{Return of capital}}$$

Where RR is the revenue requirement

OPEX is operating expenditure

WACC is the weighted average cost of capital

RAB is the regulatory asset base

DEP is depreciation

TAX is tax payable

Tax is calculated using the following formula:

$$TAX = (Pre\text{-}tax\ RR - (DEP + INT + OPEX)) * corporate\ tax\ rate$$

Where INT is interest payments

6.1 Depreciation method

Once the initial RAB has been established, an appropriate depreciation methodology needs to be determined in order to achieve a return of capital to the access provider over the assets' lives.

As noted in the Discussion Paper, economic depreciation methods are typically not applied by regulators due to inherent uncertainties and impracticalities.²⁸ Instead, some form of accounting depreciation is commonly used. The most common accounting methods are described below.

Annuity approach

The annuity approach to depreciation may recover equal capital costs (return on and of capital) in each regulatory period, or the depreciation may be front or back-loaded. Where there is a high degree of uncertainty over an operator's ability to recover the

28 Discussion Paper, p. 39.

costs of capital in the future, depreciation can be front-loaded.²⁹ Back-loaded depreciation may be appropriate where demand is initially uncertain and/or insufficient to recoup depreciation allowances based on straight line depreciation. For example, back-loading depreciation could be used to reduce the revenue requirement during the initial phase of low demand for a start-up company, or when a new service is introduced to the market. In a later phase when the new services have penetrated the market, the revenue requirement would be higher when there is a larger customer base over which to spread the higher (back-loaded) depreciation charges.

Straight-line depreciation

Straight-line depreciation allocates depreciation in equal amounts to each regulatory period. Under straight-line depreciation, although the return of capital is constant, the return on capital declines as the RAB falls over time. This occurs because the residual asset value declines as depreciation is deducted from the asset value in each period. This in turn leads to a progressive decline in the RAB, and ultimately a declining price path over time (assuming no further asset investments). Straight-line depreciation is the most common depreciation method applied in a regulatory context because it is simple to apply, transparent and can be determined consistently over time. As the allocation of depreciation is spread more evenly across present and future customers, relative to a front or back-loaded depreciation schedule, straight-line depreciation will often promote intergenerational equity.³⁰ The ACCC and AER have generally applied straight line depreciation in regulating businesses in various industries.

Submissions to the Discussion Paper generally favoured a depreciation approach that would result in smooth prices for end-users and thereby promote investor certainty.

To promote a smooth price path, and facilitate price certainty and stability, the ACCC may decide to smooth the prices estimated by the BBM or to adopt a glide path to ease the adjustment to a new level of prices. If such an approach is taken, this will effectively alter the profile of depreciation over the regulatory period (or longer if a glide path that extended across more than one regulatory period was adopted) since depreciation is effectively a residual. In this case, the depreciation received in any particular year would not strictly conform to a straight line methodology. However, the total amount of depreciation over the life of the access provider's assets would be set to ensure that the full costs of investing in those assets would be recovered.

6.1.1 ACCC's proposed approach

The ACCC proposes to adopt a straight line depreciation schedule under the BBM.

6.1.2 ACCC's reasons for the proposed approach

Applying straight line depreciation will allow the access provider to recover the cost of prudently incurred investment over the life of the asset. Moreover, it is likely to promote price stability for end users and thus greater certainty over the regulatory period. The ACCC and AER have generally applied a straight line depreciation

29 The Allen Consulting Group, *Principles for Regulatory Depreciation: Note to IPART*, September 2003, p. 7.

30 The Allen Consulting Group, *Principles for Regulatory Depreciation: Note to IPART*, September 2003, pp. 4, 9.

approach in regulating businesses in various industries, because it is the simplest and most widely adopted method of calculating depreciation.

Under the TSLRIC+ framework the ACCC used a tilted annuity approach in order to smooth prices between regulatory periods. This approach addressed the potential for assets to be revalued at the time of a new price review by allowing back-loading of cost recovery and approximating cost recovery that would occur in a potentially contestable market. Since the RAB will be locked in under a BBM, this rationale for a tilted annuity no longer applies.

While the Tribunal concluded that a tilted annuity is more likely to be suitable within a TSLRIC+ framework, it expressed no view as to the appropriate depreciation method under a locked-in asset valuation approach such as the BBM proposed in this draft report.³¹

6.2 Cost of capital (WACC)

The most common method used by regulators to determine the rate of return for pricing purposes is the weighted average cost of capital (WACC). The WACC represents the required rate of return on an investment and is the overall cost of capital for a firm that uses a mixture of debt and equity financing.

The WACC is one of the key components of the BBM in deriving the required revenue and associated price paths for regulated entities. Where the rate of return is set too low it may deter firms from making the necessary investments to maintain their infrastructure. Where the rate of return is set too high the firm may recover revenues that exceed its costs which may encourage inefficient investment.

In determining the WACC, it is necessary to ensure the rate of return is commensurate with the commercial risk associated with its regulated activities such that the firm will recover its efficient costs. The WACC adopted can be a real or a nominal WACC. A nominal WACC is essentially a real WACC adjusted for inflation. It does not make a difference whether a real WACC or a nominal WACC is used, so long as a consistent approach is adopted throughout the BBM.

In its submission to the Discussion Paper, Telstra proposed a standard capital asset pricing model (CAPM) implementation of the WACC.³² Vodafone Hutchison Australia (VHA) submitted that the WACC should be a nominal risk-adjusted return to the access providers.³³

The ACCC proposes to use a real vanilla WACC which is calculated as follows:

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

The cost of equity ($E[Ke]$) and cost of debt ($E[Kd]$) are often calculated as follows:

$$E[Ke] = rf + \beta_e \times [E(Rm) - rf] \quad (2)$$

$$E[Kd] = rf + \text{debt premium} + \text{debt issuance costs} \quad (3)$$

31 *Application by Telstra Corporation Limited ABN 33 051 775 556 [2010] ACompT 1 at [331].*

32 Telstra submission, pp. 28-29.

33 VHA submission, p. 13.

The ACCC uses the Monkhouse formula to derive the relationship between asset betas and equity betas:

$$\beta_e = \beta_a + (\beta_a - \beta_d) * \left\{ 1 - \left[\frac{E[K_d]}{1 + E[K_d]} \right] * [(1 - \gamma) * t] \right\} * \frac{D}{E} \quad (4)$$

The below table explains the various inputs used in the above formulas ((1) to (4)):

Input	Definition/explanation
D	Value of debt
E	Market value of equity
V	$D + E$
$E[K_d]$	Required/expected return on debt
$E[Ke]$	Required/expected return on equity
T	Company tax rate
Te	Effective tax rate of the firm
γ	Gamma - represents the value of franking credits under the Australian tax imputation system. A gamma of one represents full utilisation of franking credits while a gamma of zero represents no utilisation of franking credits.
β_e	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.
β_a	Asset beta - represents the fundamental systematic business risk associated with an asset.
$E(Rm)$	Required/ expected return on market portfolio
rf	Risk free rate - the return to an investor for holding an asset with a promised repayment amount and no risk of default. Typically, Australian Commonwealth Government bonds are used as a proxy for the risk free asset.
$E(Rm) - rf$	Market risk premium (MRP) - the expected risk premium investors require over the risk free return to induce them to invest in a well diversified portfolio of risky assets. The MRP is not directly observable as it is an expected return premium.
Debt premium	The difference between the yield to maturity on the chosen debt proxy (for example 10 year A rated bond yields) and the rf . The debt premium accounts for debt specific risk compensation over and above the risk free rate.
Debt issuance cost	The debt issuance cost is the transaction costs incurred by the borrower for issuing debt.
β_d	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.

6.2.1 ACCC's proposed approach

The ACCC proposes to apply a real vanilla WACC. A more detailed explanation of the ACCC's proposed approach to the WACC can be found at section A3.3.

A summary of the ACCC's proposed inputs into the WACC formulas is set out in the table below:

Input	ACCC proposed value/approach
rf	The rf will be based on the 10 year Commonwealth Government Securities bond yield, using an averaging period of 10 business days commencing as close as practically possible to the start of the regulatory period. The rf will be set for the duration of the regulatory period.
Debt risk premium	The debt risk premium will be the 10 year Bloomberg A rated yield to maturity less the rf , using an averaging period of 10 business days commencing as close as practically possible to the start of the regulatory period. The longest dated

Input	ACCC proposed value/approach
	Bloomberg yield curve extrapolated to 10 years will be used as a proxy if the 10 year A rated yield to maturity is unavailable.
Debt issuance cost	The debt issuance cost will be based on the methodology developed by Allen Consulting Group (ACG) ³⁴ updated for each regulatory period.
Market risk premium ($E(R_m) - rf$)	The MRP will be set at the historic level of 6 per cent.
Equity beta and asset beta (β_e and β_a)	The equity beta and asset beta will be set based on benchmark of comparator firms across OECD countries. The equity beta will be set at a value of 0.7.
Debt gearing	Debt gearing ratio will be set at 40 per cent debt and 60 per cent equity.
Debt beta (β_d)	The debt beta will be set at zero per cent.
Equity issuance costs	The ACCC proposes to exclude equity issuance costs from the WACC.
Tax liabilities	The ACCC proposes to use a post-tax framework under the BBM.
Gamma γ	The ACCC proposes to adopt a value of 0.65 for gamma.

6.2.2 Reasons for the ACCC's proposed approach

The ACCC proposes to apply a real vanilla WACC. The model undertakes all calculations in real terms and then converts the resulting prices to nominal terms by applying an estimate of inflation. Tax liabilities are explicitly included in the cash flows and a separate tax cost block is included in the model.

A post-tax methodology is typically used by other regulators, including the AER in regulating energy services, Australian state regulators such as the Essential Services Commission (ESC) in Victoria, the Queensland Competition Authority (QCA), and the Essential Services Commission of South Australia (ESCOSA), and regulators in the United Kingdom (such as Ofwat) and in the United States.

Outlined below are the ACCC's reasons for adopting the individual components of the WACC.

Risk free rate

The risk free rate is the return to an investor for holding an asset with a promised repayment amount and no risk of default.

Given that most network assets such as ducts and pipes are long-lived, it is appropriate to use a long-term rate for these assets, such as 10 years. The Tribunal has also expressed the view that the 10 year rate is appropriate where the life of the assets and the length of investment is long.³⁵ Further, the CAPM also suggests that investors' planning horizons typically match the life of the asset, so it is appropriate to match long term investments with long term rates.³⁶

The ACCC considers it inappropriate for the risk free rate to be updated annually. This would remove the interest rate risk exposure for the asset owner, and would effectively make the appropriate Commonwealth Government Securities bond yield

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

35 See *Application by GasNet Australia (Operation) Pty Ltd* [2003] ACompT 1, p. 6; *Application by Telstra Corporation Limited* [2010] ACompT1 at [404]-[405].

36 *Application by Telstra Corporation Limited* [2010] ACompT 1 at [481].

maturity one year, which would be inconsistent with the asset lives of most fixed network assets.

Debt risk premium

The debt premium accounts for debt specific risk compensation over and above the risk free rate. The ACCC has previously used Bloomberg's A-rated cost of debt benchmark in estimating the access provider's WACC.³⁷ Further, the ACCC considers an annually updated debt margin to be inappropriate for the same reasons stated for the risk free rate.

Debt issuance costs

Debt issuance costs are the transaction costs incurred by the borrower for issuing debt. The ACCC currently accepts the inclusion of debt issuance costs as an additional cost of debt to be included in the WACC. The ACCC has previously estimated debt issuance costs using an approach recommended by ACG in a report for the ACCC in the context of decisions made regarding gas and electricity.³⁸

The ACCC's view on debt issuance costs is that debt raising costs vary depending on the amount of debt on issue.

The CAN as a standalone debt financed asset would be a large company with a large debt portfolio. The access provider would have large amounts of debt on issue compared to gas and electricity companies and therefore the estimated debt issuance costs would be at the lower range of ACG estimates.

After updating ACG's analysis to reflect current market conditions, the debt issuance cost for Telstra is 8.5 basis points.

Market risk premium (MRP)

The MRP is the expected risk premium investors require over the risk free return to induce them to invest in a well diversified portfolio of risky assets. The MRP is not directly observable as it is an expected return premium.

In its 2008 ULLS undertaking decision, the ACCC adopted a conservative value of 6.5 per cent for the MRP, to reflect the period of extreme uncertainty in capital markets and the global economic conditions.

The ACCC's current view is that the Australian economy has shown signs of recovery. This is consistent with recent ACCC decisions such as the *Hunter Valley Coal Network Access Undertaking* and *Australian Postal Corporation 2010 Price Notification* which adopted the value of six per cent for the MRP.³⁹ Therefore, the ACCC proposes that the MRP should again be set at the level of six per cent.

Equity beta and asset beta

The equity beta and asset beta are calculated by benchmarking comparator firms across OECD countries and direct estimations.

37 ACCC, Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking, p. 206.

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

39 ACCC, *Draft Decision: Australian Rail Track Corporation Limited – Hunter Valley Coal Network Access Undertaking*, p. 568; ACCC, *Australian postal Corporation 2010 Price Notification*, p. 80.

The ACCC is of the view that a benchmarking approach that uses five years of monthly data and includes comparable operators in different countries is appropriate and mitigates problems of selection bias and errors in the data.⁴⁰ This was also recognised by the Tribunal in its recent ULLS undertaking decision.⁴¹

Debt gearing

The ACCC has in the past applied a gearing ratio of 40 per cent debt and 60 per cent equity.⁴² The ACCC believes this gearing ratio is appropriate in light of Ovum's analysis of the access provider's accounts as part of the ACCC's assessment of the ULLS undertaking, which recommended an average level of 34 per cent debt to 66 per cent equity.⁴³ The ACCC also considers that the CAN has lower risk than the access provider's other operations (such as mobiles and advertising) and therefore should be able to service more debt.

Debt beta

The ACCC considers a value of zero for the debt beta is appropriate for de-levering and re-levering equity beta. This is consistent with previous ACCC decisions.⁴⁴ A debt beta of zero per cent has also previously been supported by Telstra and Ovum.⁴⁵

Equity issuance costs

Consistent with its previous decisions, the ACCC considers that equity issuance costs should be recovered as a cash flow (operating cost) allowance when it raises equity capital and therefore should not be included in the WACC.⁴⁶

Tax liabilities

The ACCC proposes to use a post-tax framework under the BBM. The BBM framework calculates the tax expense as a separate building block cost based on expected cash flows, costs and the tax status of the RAB assets. Therefore, no tax adjustment needs to be made to the WACC.

Gamma

The ACCC applies a domestic CAPM in line with the benchmark assumption of a firm owned by Australian domiciled investors in determining the cost of equity and has treated the estimation of gamma accordingly. It has also taken into account the legislative restrictions on foreign ownership of the access provider's shares. The ACCC is of the view that adopting a benchmark gamma value of 0.65 is empirically justified.

40 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, p. 223.

41 *Application by Telstra Corporation Limited* [2010] ACompT 1 at [481].

42 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, p. 232.

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

44 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, p. 243

45 Telstra, *WACC submission*, 4 April 2008, p. 45; Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 38.

46 ACCC, *Final Decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, p. 434.

6.3 Capital expenditure, operating expenditure and efficiency mechanisms

The ACCC must forecast capital expenditure and operating expenditure that are likely to be incurred by the access provider during the regulatory period. These will be included in the revenue requirement to be recovered by the access provider during the regulatory period. While Telstra was supportive of an *ex ante* regulatory approval process for operating expenditure and capital expenditure forecasts, it submitted that a shorter time period of one to two years is appropriate for the forecasts.⁴⁷

The ACCC also proposes to build incentive mechanisms into the regulatory framework to ensure that only efficient and prudently incurred capital and operating expenditure is included in the revenue requirement. This approach is supported by the majority of submissions to the Discussion Paper, which generally favoured the adoption of mechanisms to induce efficient expenditure.

Capital expenditure, operating expenditure, and efficiency mechanisms are briefly explained below.

Capital expenditure

There are a number of methods that can be used to generate capital expenditure forecasts. For example, forecasts can be based on:

- actual capital expenditure over the past 5–10 years, projected forward using an average growth rate and adjusted to reflect forecast inflation during the regulatory period (i.e. using either a general inflation rate or inflation measures specific to particular inputs such as materials, labour, etc.)
- the access provider's planned capital expenditure (in real terms) during the regulatory period, based on its demand forecasts (e.g. fixed line voice and data traffic) and other identified drivers of infrastructure investment, and how these trigger investment in the following assets:
 - PSTN switches
 - digital subscriber line access modules (DSLAMs)/multiple service access nodes (MSANs)
 - core network assets
- an estimate of capital expenditure (in real terms) during the regulatory period, based on demand forecasts and other accepted drivers of investment.

Operating expenditure

Operating expenditure is an important component of the revenue requirement and includes all expenditure relating to the operation, maintenance and administration of services provided by the access provider. It is influenced by operating efficiency and performance.

Operating expenditure forecasts should reflect not only the efficient delivery of fixed line services to end-users, but also promote incentives for the regulated business to pursue efficiency improvements. It can be estimated using:

47 Telstra submission, p. 27.

- a top-down approach – efficiency adjustments are made to actual (historic) operating expenditures, and these costs are projected forward on historic cost-volume relationships, reflecting actual network architectures and configurations that are assumed to be efficient
- a bottom-up approach – this approach models the network and cost structures of an operator employing a hypothetical efficient optimised network with best-in-use technology or a benchmark efficient operator. Under this approach, cost-volume relationships are transparently defined and modelled according to engineering and economic best practice, provide more flexibility, and account for changes in parameters and costs over time.

Efficiency mechanisms

The regulatory framework should provide the access provider with the appropriate incentives to only commit such capital and operating expenditure as is necessary to provide the required services in a safe and effective manner. Therefore efficiency mechanisms can help provide incentives to the access provider to undertake prudent and efficient investment decisions and minimise its costs.

Service quality mechanisms

Service quality mechanisms can ensure that the access provider maintains the quality of service while minimising its costs.

6.3.1 ACCC's proposed approach

Capital expenditure

The ACCC considers it appropriate for the access provider to provide capital expenditure forecasts to the ACCC. The ACCC will then assess whether the forecasts are efficient and necessary to:

- meet anticipated demand for fixed line services
- comply with regulatory obligations
- ensure the safe and reliable delivery of fixed line services.

The ACCC needs to be satisfied that any new capital expenditure is prudent and efficient, and that cost estimates are based on reasonable assumptions about the efficient costs likely to be incurred over the regulatory period. Because of the likely volume and diversity of projects, the ACCC cannot examine expenditure on an individual project or proportion of expenditure basis. Therefore, in considering this issue, the ACCC will take into account whether:

- each capital expenditure project has been assessed and periodically reviewed in accordance with prudent investment guidelines
- efficient tender processes exist and have been adhered to so that only efficient costs are incurred
- discretionary capital expenditure is only undertaken where there is a positive return on investment during the life of the asset.

In order for the ACCC to assess prudence and efficiency, the ACCC will require:

- a copy of the investment guidelines used to rank capital expenditure projects
- an explanation of the investment program detailing:

- how non-discretionary projects relate to the drivers of investment, such as population growth and replacement of assets nearing the end of their asset lives
- for discretionary projects, a broad description of the type of investments being undertaken and the drivers of those investments.

In submitting capital expenditure forecasts for each regulatory period, the ACCC proposes that the access provider should provide:

- a report comparing the forecast for the previous regulatory period with the actual outcome of capital expenditure
- an explanation for any differences, trends and drivers.

For discretionary projects, the ACCC proposes that the access provider should provide:

- an explanation for any major differences in the types of investment undertaken compared to the forecasts
- evidence that a review of the capital expenditure projects was undertaken in accordance with its investment guidelines.

In determining what investment projects to include in capital expenditure for the relevant regulatory period the ACCC will have regard to transitional arrangements for projects that commenced prior to the start of the regulatory period.

In the absence of capital expenditure forecasts provided by the access provider, the ACCC will generate its own forecasts.

Operating expenditure

The ACCC considers it appropriate for the access provider to provide operating expenditure forecasts to the ACCC together with detailed information on:

- cost drivers used for each expenditure class
- cost allocations with respect to any common or joint costs related to common facilities/network elements
- forecast usage (traffic) data.

In submitting operating expenditure forecasts, the ACCC also proposes that the access provider provides a report comparing the forecast for the previous regulatory period with the actual operating expenditure, and explain any differences, trends and drivers.

An assessment can then be made to determine whether the operating expenditure forecasts are reasonable and, where necessary, appropriate efficiency adjustments can be made.

In the absence of operating expenditure forecasts provided by the access provider, the ACCC will generate its own forecasts.

Proposed Record Keeping Rule

The ACCC intends to make a record-keeping rule (RKR) to obtain forecast capital expenditure and operating expenditure data from the access provider for the regulatory period. This will include the underlying assumptions used to derive the forecasts. This RKR will be the subject of a separate consultation process.

If the access provider does not forecast operating and capital expenditure for the entire regulatory period, the ACCC will develop its own forecasts, as required, and seek feedback on the accuracy and reasonableness of its forecasts during consultation with industry.

Efficiency mechanisms

The ACCC proposes to use a mixture of both *ex ante* and *ex post* efficiency mechanisms as follows:

- Prudency checks may be applied to capital expenditure on an *ex ante* or *ex post* basis to ensure that allowed capital expenditure is efficient and prudent. The ACCC could then disallow any expenditure found to be inefficient and imprudent, and penalise or reward the access provider accordingly. Other techniques would be used to determine the efficiency of operating expenditure, such as benchmarking.
- A competitive tender process for some of the inputs used by the firm or services provided by the access provider can be adopted as a means of ensuring that operating and capital expenditure is undertaken efficiently by the regulated business. The ACCC may establish a framework for assessing significant operating expenditure items and would be able to disallow expenditure if it is not convinced of a competitive tender process. This would mainly relate to capital expenditure.
- A carry-forward mechanism to share the benefits of efficiency gains between the access provider and access seekers. For example, where the access provider can deliver a capital project for less than the forecast cost, the access provider will be able to recover the difference between the forecast and actual expenditure through access prices until the start of the next regulatory period (when the RAB is adjusted for actual expenditure), provided customer service standards are met. Access seekers will also benefit from an efficiency gain through lower access prices into the future (through a lower RAB).
- Cost pass-through mechanisms to ensure that the regulated firm can pass-through increased costs to access seekers. These costs are costs which were incurred as a result of external events or situations that are unforeseeable or beyond the control of the access provider. Therefore, cost pass-through would only be available in very limited circumstances (see section 7.5).

Service quality mechanisms

The ACCC does not intend to impose additional service quality mechanisms beyond those currently in place. The Customer Service Guarantee (CSG)⁴⁸ aims to ensure that faults are repaired within reasonable timeframes. Further the Network Reliability Framework⁴⁹ is a compliance and reporting framework that complements the CSG. In addition, the ACCC is required under section 152AQB of the TPA to determine model non-price terms and conditions of access to core fixed line access services (PSTN OTA, LCS and ULLS). A number of industry codes have also been developed on matters relevant to non-price terms and conditions, some of which have been registered with the Australian Communications and Media Authority.

48 Parts 2 and 5 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*.

49 Carrier Licence Conditions (Telstra Corporation Limited) Declaration 1997 (Amendment No. 4 of 2002).

6.3.2 ACCC's reasons for the proposed approach

Capital expenditure

The ACCC considers that, while historical capital expenditures can be used for forecasting purposes, it recognises that past investment trends may not be an accurate reflection of future capital investment requirements. The ACCC therefore considers it would be more appropriate for the access provider to provide capital expenditure forecasts through the proposed RKR.

Operating expenditure

Similar to the above reasons regarding capital expenditure forecasts, the ACCC does not consider that historical operating expenditure is a wholly accurate predictor of future operating expenditure. The ACCC's preferred approach is for the access provider to provide operating expenditure forecasts through the proposed RKR.

Efficiency mechanisms

Submissions to the Discussion Paper were divided on the issue of efficiency mechanisms. A number of submissions suggested CPI-X price caps on individual access service prices to promote efficient expenditure,⁵⁰ while Macquarie suggested that an *ex ante* prudency check should be used to review Telstra's capital and operating expenditure proposals leading into a regulatory period and make an assessment of whether planned expenditure is reasonable.⁵¹ Telstra submitted that a shorter time period (than used in the energy sector) for operating expenditure and capital expenditure forecasts of one to two years should be used. Telstra supported the use of an *ex ante* regulatory approval process for operating expenditure and capital expenditure forecasts.⁵² Optus submitted that there should not be efficiency mechanisms because they create incentives for gaming by the access provider.⁵³

After considering these submissions, it is the ACCC's view that the proposed *ex ante* and *ex post* efficiency mechanisms are likely to encourage efficient investment in infrastructure, productivity savings and thereby lower prices for end users, which is in the LTIE (provided the savings are passed on to downstream markets and then to end-users).

The ACCC assessment of proposed/completed investments through prudency checks/cost review processes is likely to encourage efficient capital expenditure because of financial penalties and rewards, while a competitive tender process will ensure there are the competitive pressures of the market place into this sector of the economy.⁵⁴ This should guard against the gaming concerns raised in some submissions.

Further, carry-forward mechanisms will share the benefits of efficiency between the access provider and access seekers, and cost-pass through mechanisms will remove incentives on the regulated firm to increase its forecast operating expenditure (and hence prices) beyond the efficient level to account for the risks associated with uncertain or unpredictable events.

50 CCC submission, p. 30. TransACT submission, p. 4.

51 Macquarie submission, p. 6.

52 Telstra submission, p. 27.

53 Optus submission, p. 32-33.

54 King, S., *Competitive Tendering and Contracting Out: An Introduction*, Australian National University, August 2001, p. 2.

Service quality incentives

Telstra submitted that the current service quality mechanisms are sufficient.⁵⁵ Optus submitted that service quality incentives are not necessary.⁵⁶ All other submissions stated that some quality incentives are necessary, but could be subject to regulatory gaming.

The ACCC has had regard to these submissions and considers that the current service quality incentives are sufficient to ensure that access seekers and end-users receive service at an adequate level. Additionally, given the changes to the access regime that have been proposed, the ACCC is of the view that it would be inappropriate to consider any additional service quality incentives at this time.

6.4 Roll-forward process

Under the BBM, at the end of each year the RAB must be rolled-forward to determine the opening value of the RAB for the next year. The roll-forward process updates the RAB to reflect forecast capital expenditure, forecast depreciation and forecast asset disposals for that year. All submissions received on the Discussion Paper supported a BBM approach where the RAB is rolled-forward from one year to the next.

6.4.1 ACCC's proposed approach

Once the initial RAB has been set, the ACCC proposes to roll-forward the RAB each year by:

- adding the forecast capital expenditure
- subtracting depreciation and any forecast asset disposals.

This process can be represented by the following equation:

$$RAB_{t+1} = RAB_t + CAPEX_{t+1} - depreciation_{t+1} - asset\ disposals_{t+1}$$

Capital expenditure is not a direct component of the revenue requirement (as operating expenditure is), but rather is added to the RAB. Capital expenditure then translates to an addition into the revenue requirement in subsequent years through the return on capital given by the product of the WACC and RAB, as well as through the return of capital (regulatory depreciation). Capital expenditure is assumed to occur half-way through the year. To compensate the access provider for the implicit half-year return on capital expenditure, a half-year WACC adjustment is made to yearly capital expenditure. This approach is consistent with the AER's treatment of capital expenditure.

To calculate the opening RAB for the next regulatory period, the closing RAB will be adjusted for inflation using the consumer price index (CPI) to convert it into the price level used as the base year for the next regulatory period.

The ACCC may also establish a 'carry-over' mechanism (or 'unders and overs') to deal with any significant divergences between the forecasts and actual values for operating expenditure, capital expenditure and demand during a period. Carry-over mechanisms would address variations due to forecasting error. Any variations due to efficiencies or inefficiencies would be dealt with through the efficiency mechanisms discussed in section 6.3.

55 Telstra submission, p. 37.

56 Optus submission, p. 38.

6.4.2 ACCC's reasons for the proposed approach

The ACCC considers that rolling-forward the RAB using the above approach is in the LTIE. As outlined in section 4.4, this is because it will provide certainty regarding the value of the RAB, given that the RAB is locked-in and only rolled-forward through a predetermined process.

This in turn will lead to access price consistency and certainty for subsequent years.

7 Setting prices for specific services

This chapter sets out the ACCC's proposed method when implementing the BBM for specific services. It is broken into five parts:

- cost allocation method
- forecast demand
- form of price control
- length of regulatory period
- review.

7.1 Cost allocation method

The cost allocation method allocates the revenue requirement to individual services in order to set a unit price for those services in a given year. There are a number of ways to allocate costs to individual services. The Discussion Paper noted that the ACCC could adopt the cost allocation methodology in the Analysys cost model or the current RAF. It also called for submissions on the appropriate cost allocation method for the ACCC to adopt.⁵⁷

The ACCC has had regard to submissions made by industry participants regarding the appropriate cost allocation method. Telstra submitted that it is important to fix the allocation methodology and update the allocations from one year to the next.⁵⁸ Optus noted the importance of a transparent, objective and measurable allocation method. Macquarie and Optus both considered that the ACCC could draw on the cost allocation approach used in the Analysys cost model.

Submissions to the Discussion Paper generally suggested that cost allocation factors should be objective, verifiable and consistent with industry policy objectives.

7.1.1 ACCC's proposed approach

Under the cost allocation approach proposed by the ACCC, costs are allocated to each service using cost allocation factors. The allocated costs represent the total costs associated with providing each service. The allocation factors are derived from the Analysys cost model and then adjusted by the ACCC to reflect more up-to-date information about the usage of shared assets to provide specific services.

The ACCC has used the cost allocation factors from the Analysys Cost Model as a starting point for calculating the cost allocation factors applied in the BBM. It has adjusted these factors to remove, as far as possible, the effects of the optimisation undertaken in the Analysys model and to adjust for changes in the pattern of demand since the Analysys model was developed. For further details, see section A7 of Appendix A. To ensure the cost allocation factors remain accurate over time, the ACCC has adjusted the factors over the estimation period for forecast changes in demand.

⁵⁷ See Discussion Paper, pp. 51-52.

⁵⁸ Telstra submission, p. 30

7.1.2 ACCC's reasons for the proposed approach

The ACCC considers that in setting individual prices for each service under the BBM, costs need to be apportioned to each service. Infrastructure is frequently shared in providing both regulated and un-regulated services so allocation of costs amongst the services is required. These cost allocation factors reflect the percentage of costs in the CAN and the Core network caused by each service.

The ACCC has used the Analysys Cost Model as a starting point.

7.2 Forecast demand

Forecast demand is an estimate of the demand for a specific service in a future period. For example, forecast demand may be represented as the number of SIOs for a specific service (in the case of ULLS), the number of minutes (for PSTN OTA) or forecast call duration (for LCS). The ACCC will divide the total annual cost per service by the annual forecast demand for that service. This establishes a unit price for each service.

Reliable demand forecasts are essential in order to calculate accurate cost based unit prices. Telstra submitted that there are difficulties in accurately forecasting demand, especially over a five year period.⁵⁹

7.2.1 ACCC's proposed approach

The ACCC proposes to obtain forecast demand information from the access provider through the implementation of an RKR.⁶⁰ The RKR will require the access provider to submit forecast demand for each service for the regulatory period and supporting documentation outlining the method and underlying assumptions used. The ACCC will conduct industry consultation on the proposed RKR, and will prepare a regulatory impact statement.

The ACCC will assess whether the access provider's forecast demand is reasonable in accordance with the following principles:⁶¹

- the approach and methodology the access provider adopts must be appropriate
- the assumptions made by the access provider must be reasonable
- the data used must be current and accurate
- the key demand drivers must be taken into account (for example, these could include factors like population growth, technological advancement, household income)
- the methodology must be correctly applied
- the forecasts must be consistent with trends observed in actual historical RAF data, or it must be explained why a divergence from the trend is expected.

59 Telstra submission, p. 15.

60 The RKR will be the subject of a separate consultation process which will follow the release of this document.

61 These principles were used in ACIL Tasman's analysis of the appropriateness of the methodology used by gas distributor Jemena in its demand forecasts for an access arrangement period commencing on 1 July 2010: ACIL Tasman, *Review of Demand Forecasts for Jemena Gas Network NSW*, February 2010.

The ACCC may also have regard to alternative forecasts, for example by private forecasting groups, in assessing the reasonableness of the access provider's forecast demand.

The ACCC considers that the access provider's forecast demand should be subject to industry review. Stakeholders will be invited to make submissions on the validity and accuracy of the forecasts and the supporting methodology and assumptions.

The ACCC may also consider implementing a regular review of the forecast demand. This would ensure that prices could be adjusted if forecast demand were to differ significantly from actual demand. Forecasts could be revised annually if there is a significant difference between actual and forecast demand in the previous year. Indicative prices may then be adjusted according to the revised forecasts.

There is an inherent trade off between the price certainty to be gained from locking in demand forecasts and the risk that the forecasts will be incorrect and distort prices throughout the regulatory period.

In the absence of acceptable forecasts provided by the access provider, the ACCC proposes to generate its own forecasts and seek industry comments on those forecasts. The ACCC expects that it will be necessary to use its own forecasts for the initial regulatory period, as it is unlikely that the timeframe for implementing the RKR will allow sufficient time to determine the initial indicative prices. The proposed forecasts are included in the appendix.

7.2.2 ACCC's reasons for the proposed approach

Demand forecasts that overestimate demand may result in the access provider obtaining less than the required revenue. This may create a disincentive for the access provider to invest in efficient infrastructure as the access provider is not assured that it will earn sufficient revenue to receive a reasonable commercial return.

Conversely, demand forecasts that underestimate demand may result in prices for individual services that exceed the access provider's cost of providing those services. This would not achieve competitive neutrality in relation to those individual services, as access seekers would face prices based on higher costs than those faced by the access provider in the provision of downstream retail services.

The demand forecasts are also an important input in determining an appropriate level of operating and capital expenditures required over the regulatory period.

As such, accurate demand forecasts are important in order for the BBM and individual price cap framework to be implemented effectively. The ACCC considers that the access provider and access seekers are best placed to provide the most accurate demand forecasts.

7.3 Form of price control

There are a number of price control methods that can be used by the ACCC to regulate wholesale prices of declared fixed line services. The Discussion Paper raised individual price caps, weighted average price caps and revenue caps as possible methods, and called for submissions on the appropriate methodology to adopt.⁶²

62 See Discussion Paper, pp. 51-57.

The ACCC has had regard to submissions made by industry participants regarding the appropriate price control method to adopt. All submissions were in favour of an individual price cap methodology for the declared fixed line services.⁶³

7.3.1 ACCC's proposed approach

The ACCC proposes to adopt an individual price cap methodology for all of the declared fixed line services. This requires the ACCC to set individual prices for each declared fixed line service.

The service price will reflect the access provider's costs of providing for that service, including a reasonable rate of return on capital and the return of capital over time (regulatory depreciation).

7.3.2 ACCC's reasons for the proposed approach

The ACCC considers that an individual price cap methodology is the most effective means of promoting the LTIE.

Under an individual price cap approach, there is less flexibility (than would otherwise be afforded by average price caps and revenue caps) to move away from cost-based pricing for specific services. This promotes competitive neutrality as access seekers would face prices based on the actual costs faced by the access provider. As such, access seekers are not disadvantaged relative to the access provider when providing retail services which use that wholesale service as an input. This will promote competition in the relevant downstream retail markets.

Individual price caps will ensure that the access provider cannot price discriminate (a risk would be present if an average price cap approach or a revenue cap approach was adopted). A vertically integrated access provider will be unable to raise the price of a service required for access seekers to compete in the retail market (such as the ULLS) — therefore, it will not be able to prevent or delay a competitor's entry into retail markets reliant on those wholesale services. This will promote competition in downstream retail markets. It will also ensure efficient investment by access seekers in infrastructure (e.g. DSLAMS to provide the ULLS) is promoted.

Individual price caps will also promote efficient build/buy decisions. An access seeker will have an incentive to undertake efficient investment in infrastructure if it considers that it can provide services at a cheaper cost over its own infrastructure. Setting individual price caps helps ensure that costs for specific services remain cost-based (and are not inflated). This means that an access seeker will have an incentive to invest in infrastructure when it can do so at a cost less than the incumbent's actual cost of providing that service. This will promote the efficient use of and investment in infrastructure.

7.4 Length of regulatory period

The length of the regulatory period has implications for the firm's incentives to behave efficiently. In this draft report, 'regulatory period' refers to the period of time covered by the Pricing Principles Determinations (with indicative prices) made by the ACCC at the conclusion of this review process.

63 Telstra submission, p. 30; Optus submission, pp. 39-40; Macquarie submission, p. 8; VHA submission, p. 16; TransACT submission, p. 4; Frontier Economics Report, pp. 45-47.

Five years is a typical price determination period and is used by Ofwat and Ofgem (for water, electricity and gas price control in the United Kingdom) and the AER (in the national electricity market).

The regulatory period for State Water price determinations undertaken by IPART have varied from one to four years. In other sectors, IPART uses a three-year determination period for retail electricity tariffs and annual reviews for urban transport charges (taxi, rail and bus).

The submissions varied on the appropriate length of the regulatory period with Optus preferring a period of no more than three years and the Competitive Carriers' Coalition (CCC) and Macquarie suggesting a five year period (although the CCC suggests the first regulatory period should be for three years).⁶⁴ Telstra suggested that price should be updated regularly, perhaps annually, to reflect changes in costs.⁶⁵ VHA did not explicitly set out a time period, but suggested a longer rather than shorter regulatory period to allow incentive mechanisms to have an effect.⁶⁶

7.4.1 ACCC's proposed approach

The ACCC proposes to have an initial regulatory period of four years. The ACCC will determine the length of all subsequent regulatory periods based on industry developments and the applicable legislative framework. Allowing flexibility in the length of the regulatory period will provide the ACCC with the ability to take into account industry circumstances and other relevant factors when deciding on the length of subsequent regulatory periods.

The ACCC recognises that the proposed regulatory period of four years (from 1 January 2010 to 31 December 2014) extends five months beyond the current expiry date of each of the fixed line services declarations. (The expiry date for the declarations is 31 July 2014.)

In this regard, upon the expiry of each declaration, the ACCC is required, under section 152ALA of the TPA, to conduct an inquiry to determine whether to extend (or further extend) the expiry date of each declaration, revoke or vary the declaration, make a new declaration, or allow the declaration to expire. In proposing a regulatory period of four years for the reasons set out below, the ACCC is not prejudging the outcome of any future declaration inquiries in relation to the fixed line services, nor in any way limiting its discretion with respect to these inquiries. Application of the proposed pricing principles determinations with respect to prices for the period 1 August 2014 to 31 December 2014 is conditional upon the ACCC deciding to extend, vary or make a new declaration in each case.

7.4.2 ACCC's reasons for the proposed approach

The ACCC considers that a regulatory period of four years is in the LTIE. This period is long enough to give stability and certainty to prices to allow participants in the industry to plan investment. The period is sufficiently short to ensure that any changes in the industry can be incorporated into the pricing structure.

In setting the duration of the regulatory period, the ACCC considered the trade-off involved in setting shorter or longer periods. In particular, over a shorter period:

64 Optus submission, p. 36. CCC submission, p. 35. Macquarie submission, p.7.

65 Telstra submission, p. 36.

66 VHA submission, p. 14.

- there is greater certainty around expenditure and demand forecasts
- there is greater regulatory and administrative burden in undertaking price reviews.

Over a longer period:

- customers will be provided with greater price certainty
- there is greater incentive to minimise costs and increase productivity
- there is an increased potential that costs will not be recovered (which would be detrimental to dynamic efficiency).

The argument for a relatively short regulatory period is stronger when there is more uncertainty, or an increased likelihood of unanticipated outcomes for the operator or its customers. However, if there is a reasonable degree of certainty in the outlook period, a longer determination period is warranted.

To the extent that the industry is transitioning to a new regulatory framework, there is an argument for shorter regulatory periods during the transitional phase. This may give way to longer periods when certainty increases and operators and their customers have adjusted to the changed circumstances.

7.5 Review during regulatory period

Another consideration is whether there should be scope to review the Pricing Principles Determinations during a regulatory period. Such a review might occur as a result of an event that was not envisaged when prices were initially set.

The Discussion Paper sought views on whether there should be the opportunity for regulated prices to be reviewed in the middle of a regulatory period, in response to such events.⁶⁷ Telstra submitted that pass through mechanisms should be available to deal with unanticipated outcomes relating to the NBN.⁶⁸ Macquarie and the CCC submitted that review should be available only in limited or exceptional circumstances.⁶⁹ Optus submitted that there should be no review in the middle of a regulatory period in response to particular events which require unexpected additional costs to be incurred. However, Optus submitted that a review may be appropriate in response to events of a different nature (such as a significant commercial agreement concerning infrastructure).⁷⁰

7.5.1 ACCC's proposed approach

As noted above, the ACCC intends to set an initial regulatory period of four years. The ACCC is of the view that there should be scope for a review of the Pricing Principles Determinations within a regulatory period only if there are exceptional circumstances that warrant such a review. As the length of the regulatory period is set by the ACCC, not determined by legislation, the ACCC is able to review the Pricing Principles Determinations at any time during their term.

The ACCC recognises that any provision for initiating a review of the Pricing Principles Determinations during their term may lead to increased regulatory risk and possibly conflict with the objective of increasing regulatory certainty. However, given

67 Discussion Paper, p. 49.

68 Telstra submission, p. 31.

69 Macquarie submission, p. 7; Frontier Economics report, p. 34.

70 Optus submission, p. 36.

the rapidly changing nature of the Australian telecommunications industry, the ACCC believes that there should be provision, under very limited circumstances, for the Pricing Principles Determinations to be reviewed during their term. Such a provision should protect both the access provider and the access seekers from any regulatory risk arising from unexpected changes in capital expenditure, operating expenditure or demand forecasts during a period of industry change.

There is no proposed limitation as to the nature of the events that could give rise to a review of the Pricing Principles Determinations, although the events should be exceptional and unanticipated. Some of the events might include:

- large unavoidable changes in operating or capital expenditure which result in a change in the revenue requirement and would otherwise lead to price shock at the commencement of the next regulatory period
- unexpected changes in the telecommunications regulatory regime or other legislation that materially affects telecommunications providers
- natural disasters and other events that are outside those envisaged when prices were set.

An access provider or access seeker may write to the ACCC at any time requesting a review of Pricing Principles Determinations. Such an application would need to detail the reasons supporting the request with reference to the above and must include details of the access provider's proposed response to the event and the nature and form of the variations sought.

The ACCC considers that there would need to be strong reasons for reviewing prices during a regulatory period because of the benefits to the access provider and access seekers from price certainty and stability. Matters likely to be relevant in considering whether to commence a review of Pricing Principles Determinations include:

- either the access provider, the access seekers or end-users being materially adversely affected by the event
- the event being beyond the control of the party(ies) requesting the review, and
- the event not having been contemplated at the time prices were set.

The ACCC would consider the issues set out above and any other relevant matters and consult industry about the necessity of a review before making its decision to commence a review. The ACCC may also initiate a review of the Pricing Principles Determinations on its own motion.

Alternatively, the ACCC may decide to defer action to address the impact of any significant events during a regulatory period until the subsequent regulatory period, where this would not be expected to result in a price shock.

7.5.2 ACCC's reasons for the proposed approach

The ACCC is of the view that the ability to review the Pricing Principles Determinations in exceptional circumstances is in the LTIE.

Given the significant changes taking place in the Australian telecommunications industry, a mechanism that allows the ACCC to review the Pricing Principles Determinations (albeit under very limited circumstances) will increase industry confidence that prices accurately reflect the efficient cost of providing access to the

regulated service. Such a provision may be appropriate where dramatic industry events would otherwise lead to annual changes in the estimated revenue requirement and therefore access prices.

The ACCC will consult if it receives a request for a review of the Pricing Principles Determinations. This will help prevent any regulatory gaming and will provide an adequate prudency check that a review is warranted. This approach provides additional industry certainty that Pricing Principles Determinations will not be varied without significant cause during each regulatory period.

8 Structure of prices

8.1 De-averaged or averaged

The ACCC has considered whether prices should be averaged or de-averaged across regions, and whether to adopt different RABs for different geographic regions.⁷¹

There are various ways in which a RAB can be de-averaged. Macquarie⁷² and Optus⁷³ submit that any de-averaging should be considered on a service by service approach. Telstra however, submits that any de-averaging needs to be considered in light of government policies, sound economic principles and exemptions that will be in place in the future.⁷⁴

Given the continuing high level of uncertainty around the communications environment and the legislative framework for telecommunications, industry comment is sought on whether a two-stage transition period may be appropriate. The first stage could run from January 2011 to December 2014 (the current declaration period for fixed line services ends on 31 July 2014). During this stage, the current nationally disaggregated four band ULLS pricing structure would remain in order to provide stability and consistency in the prices faced by access seekers purchasing the ULLS. At the end of this stage, the Commission could reassess the appropriateness of disaggregated ULLS prices.

If it is considered desirable, a move to nationally averaged ULLS prices could be phased in over the second transition stage. This stage could run from January 2015 to December 2018. The ACCC will be reconsidering, and consulting on, the current pricing structure prior to determining indicative prices for the January 2015 to December 2018 period.

Industry comment is also sought on whether the existing structure for PSTN OTA prices is appropriate.

8.1.1 ACCC's proposed approach

The ACCC proposes to:

- set de-averaged prices for the ULLS, keeping the current four band structure
- set de-averaged prices for PSTN OTA, keeping the current structure
- set averaged prices for the other declared fixed line services.

8.1.2 ACCC's reasons for proposed approach

ULLS Pricing

The ACCC considers that averaged prices for the ULLS will not promote competition in non-metropolitan and non-CBD areas, given that the ULLS is not technically viable for delivering high speed data services in large parts of rural areas.⁷⁵

71 See section 4.3.6 of the Discussion Paper.

72 Macquarie submission, p. 9.

73 Optus submission, pp. 44-46.

74 Telstra submission, p. 38.

75 This position is consistent with the position that the ACCC took in its assessment of Telstra's 2005 ULLS undertaking: *Assessment of Telstra's ULLS monthly charge undertaking – final*

The ACCC also considers that nationally averaged pricing for ULLS at this stage would not promote the economically efficient use of and investment in infrastructure. Nationally averaged prices would depart significantly from the real underlying costs of the ULLS, thereby distorting allocative efficiency. Price averaging does not distort allocative efficiency greatly if cost differentials are reasonably small. However, in the case of the ULLS, the cost differentials between bands are sufficiently large to justify de-averaged prices.

Averaged charges in urban areas would result in inflated costs which would in turn increase the marginal cost of the ULLS and negatively impact on the viability for ULLS based investments. It is also likely that inefficient bypass would occur in urban areas due to the large differential between a nationally averaged ULLS price and the actual costs of providing ULL services.⁷⁶

For these reasons, ULLS prices have been disaggregated since 2003 using cost relativities estimated by the PIE II model. The ACCC has used the existing relativities between ULLS band prices to disaggregate the average prices estimated using a BBM since current costs are not available on a geographically disaggregated basis. This promotes price stability in a time of significant industry change.

WLR, LSS and LCS Pricing

Previously, WLR prices were calculated using a Retail Minus Retail Cost (RMRC) approach. For several years, the ACCC has signalled to industry its intention to move away from RMRC based pricing for WLR and LCS. The ACCC first raised the possibility of moving away from RMRC to a cost-based approach for setting LCS prices in 2003.⁷⁷ Since 2006, it has stated on three separate occasions that the RMRC approach was an interim pricing principle and that it would seek to implement a cost-based pricing approach for WLR and LCS as soon as it had constructed a robust cost model capable of producing reliable price estimates.⁷⁸

Since retail prices are set on a nationally averaged basis,⁷⁹ WLR prices were also set on a nationally averaged basis. In the absence of reliable geographically disaggregated cost data, the ACCC is unable to estimate cost-based de-averaged prices for WLR services. It does not have any existing de-averaged prices from which to determine relativities for de-averaging prices.

decision, August 2006, p. 92. In its review of that undertaking, the Tribunal agreed with the ACCC and concluded that averaged prices for the ULLS are not likely to promote competition in urban or rural areas: [2007] ACompT 3 at 132, 146.

76 The ACCC also took this view in its final decision in its assessment of Telstra's 2005 ULLS undertaking: ACCC, *Assessment of Telstra's ULLS monthly charge undertaking – final decision*, August 2006, p. 89-94. In its review of that undertaking, the Tribunal also considered that averaged prices for the ULLS would likely "discourage allocative efficiency because it will lead to a disassociation between the charges and costs of providing the service in different areas": [2007] ACompT 3 at 172.

77 ACCC, Final determination for model price terms and conditions of the PSTN, ULLS and LCS services, October 2003; ACCC, LCS and WLR – Final pricing principles and indicative prices for 2008-2009, August 2008; ACCC, Pricing principles and indicative prices – 1 August 2009 – 31 December 2010, December 2009.

78 ACCC, Local services review – Final decision, July 2006; ACCC, LCS and WLR – Final pricing principles and indicative prices for 2008-2009, August 2008; ACCC, Pricing principles and indicative prices – 1 August 2009 – 31 December 2010, December 2009.

79 The current arrangements are set by the Minister for Broadband, Communications and Digital Economy and are contained in *Telstra Carrier Charges – Price Control Arrangements, Notification and Disallowance Determination No. 1 of 2005*.

Similarly, the ACCC does not have reliable geographically disaggregated cost data to set de-averaged LSS and LCS prices or existing de-averaged prices from which to determine relativities for de-averaging prices.

While there may be significant differences in the underlying costs of providing these services across geographic areas, the ACCC proposes to continue to set these prices on a nationally averaged basis unless it is able to obtain reliable information on which to de-average prices.

9 Draft indicative prices

9.1 Draft indicative prices

This section summarises the draft indicative prices estimated by implementing the pricing principles, set out at Appendix A.

The 2011-14 draft indicative prices are estimated using a BBM for all services except LSS. The ULLS, WLR and LCS prices are lower than the current indicative prices, while the PSTN OTA price is higher and the LSS price is unchanged.

All prices have been smoothed to be uniform from 1 January 2011 to the end of 2014. The ACCC considers that smoothing prices to obtain a single draft indicative price for each service over the regulatory period provides certainty and stability.

The ACCC has rounded the averaged prices estimated by the model in recognition of the lack of precision in the inputs to the model, specifically forecast operating and capital expenditures and demand. The ACCC has taken a conservative approach by generally rounding up the prices.

ULLS prices have been estimated on the basis of the current geographically disaggregated band structure. The Band 4 price for more remote areas is notional, as there is very little demand, significant technological limitations on the copper and no reliable information on which to determine a price using the ACCC's model. In June 2010, there were only about 144 active ULLS services in Band 4 compared to over 690,000 active ULLS services across Bands 1, 2 and 3.

The draft indicative price for LSS is determined by reference to the costs associated with the specific operational support systems in place to facilitate LSS provision, rather than the costs associated with access to the PSTN network.

The draft indicative prices are specific to the six declared fixed line services supplied over Telstra's (copper and fibre) access networks. The proposed new pricing principles and draft indicative prices are not intended to apply to any services supplied over the proposed NBN.

Summary—Current indicative prices compared with draft indicative prices from 1 January 2011 to 31 December 2014		
	Current indicative prices	Draft indicative prices based on initial RAB of \$7.5b
<i>ULLS access prices with geographically de-averaged prices</i>		
SIO-weighted national average (per line per month)	\$28.50	\$28.42
Band 1	\$6.60	\$6.50
Band 2	\$16.00	\$16.00
Band 3	\$31.30	\$31.00
<i>Band 4 (nominal)</i>		\$100
WLR (per line per month)	\$25.57 (Homeline) \$26.93 (Businessline)	\$20.00 (nationally averaged)
LSS (per line per month)	\$2.50	\$2.50
PSTN OTA (per minute)	1c (headline rate)	1.1c
LCS (per call)	17c	7.0c

These draft indicative prices are highly sensitive to the key assumptions. Using different assumptions for certain variables would significantly change the estimated prices, future price trends, and the relativities between prices.

The variables with the largest impacts on prices are:

- the estimated cost of capital (the WACC)
- forecast operating expenditure
- the depreciation method
- the factors used to allocate costs to specific services under the cost allocation method
- forecast demand.

The draft indicative prices are also included in the draft Pricing Principles Determinations which are released for consultation at Appendix E.

9.2 Draft indicative connection charges

In estimating the draft indicative connection and disconnection charges for the period 2011-14 the ACCC recognises that labour costs and contractor charges are likely to change over time. Accordingly, the ACCC has used actual CPI figures, RBA inflation forecasts and the RBA inflation target to index connection and disconnection.

A more detailed explanation of the method used by the ACCC to update the connection and disconnection charges and a summary of all the draft charges is contained in section A11 of Appendix A. The draft connection and disconnection charges are also included in the draft Pricing Principles Determinations which are released for consultation at Appendix E.

Appendix A: Application of the BBM

A1 Introduction

The purpose of this appendix is to inform industry, government and other interested parties of the way in which the ACCC has estimated the draft indicative prices. This has been done by applying the proposed draft pricing principles and making certain assumptions within the BBM developed for the ACCC. The draft indicative prices will apply from 1 January 2011 until 31 December 2014 and apply only to services provided over Telstra's access network using CAN and Core assets.

This appendix sets out the methodology and assumptions used to apply the proposed draft pricing principles and estimate prices for the declared fixed line services. The ACCC is seeking comments on its methodology and assumptions and will have regard to submissions received in finalising its approach.

Where submitters disagree on the methodology, they should propose an alternative methodology and explain why it is preferable to that proposed by the ACCC. Where there is disagreement on the assumptions made by the ACCC, submitters should propose alternative assumptions and explain how those assumptions have been obtained and why they are considered to be more appropriate. In each case, submitters should discuss the impact of changing the methodology or assumptions on estimated prices.

Subject to an appropriate confidentiality regime, the ACCC plans to release its model to enable interested parties to understand how prices are calculated, to see clearly what assumptions have been used, and to test the impact of alternative assumptions. The ACCC considers that releasing the model will promote transparency and certainty about how prices are estimated.

This appendix is structured as follows:

- **Section A2** outlines the design of the Ovum BBM and how it applies the proposed draft pricing principles.
- **Section A3** describes how the initial RAB will be rolled forward at the end of the initial regulatory period to determine the opening RAB value for the next regulatory period.
- **Section A4** sets out operating expenditure forecasts used in the BBM and explains how these forecasts are derived, including the source of the data used.
- **Section A5** describes how the tax liabilities included in the BBM are calculated.
- **Section A6** calculates the total revenue requirement obtained by summing each of the cost blocks.
- **Section A7** describes how the BBM allocates revenues to specific fixed line services and explains how the cost allocation factors have been determined.
- **Section A8** describes the demand forecasts used in the BBM and explains how the forecasts for each service are derived, including the source of the data used.
- **Section A9** describes the methodology used to calculate LSS prices and explains why there is a separate LSS model.

- **Section A10** outlines the draft indicative prices and explains the method used to calculate de-aggregated prices for ULLS and PSTN OTA services.
- **Section A11** outlines the draft indicative connection and disconnection charges.

A2 The Ovum BBM

A2.1 Development of the model

In March 2010, the ACCC decided that a BBM spreadsheet model should be constructed to calculate access prices for five of the declared fixed line services—the ULLS, WLR, LCS, and PSTN OTA. LSS prices are calculated through a separate model, which is discussed in section A9 of this appendix.

On 28 March 2010, the ACCC commenced a process for the engagement of an expert consultant to develop a BBM.

Ovum Pty Ltd (Ovum) was engaged by the ACCC on the 28 April 2010 to develop a model and user manual. The manual explains the underlying assumptions and design, how the model works, and the inputs required to estimate prices. The final model and manual were delivered to the ACCC on 6 July 2010. The ACCC subsequently revised some aspects of the model to ensure consistency with the pricing principles set out in this report.

The model takes into account the building block approaches previously adopted by the ACCC and AER and is consistent with the approach the ACCC is proposing to adopt to set access prices for fixed line services. In developing the Ovum BBM, Ovum was also required to have regard to the AER's post-tax revenue model (PTRM) and to ensure the model is tailored to the telecommunications industry.

Subject to an appropriate confidentiality regime, the ACCC plans to release the model and user manual for consultation. Submissions will be invited on model design, the accuracy of the model, the methodology and assumptions used to estimate prices, and the draft indicative prices. Sections A3-A10 of this appendix provide detail on the methodology, assumptions and prices estimates.

A2.2 Design of the Ovum BBM

The Ovum BBM calculates access prices for ULLS, WLR, LCS, and PSTN OTA for each year of the estimation period. The model calculates an aggregate revenue requirement for providing services over the PSTN.

The Ovum BBM contains spreadsheets that calculate each of the cost blocks in the BBM shown in figure 1 in chapter 4. The amounts calculated for each of these cost blocks are summed to obtain the aggregate revenue requirement for each year of the estimation period. A share of the aggregate revenue requirement is then allocated to each of the fixed line declared services and unit prices are calculated by dividing the revenue requirement for each service by demand for that service. Full details of how the model works are in the user manual.

The methodology adopted in the Ovum BBM is consistent with the proposed draft pricing principles. It implements steps 1-4 of the process described in figure 2 of chapter 4. Step 5 (to determine the structure of prices) is undertaken separately.

A2.3 Inputs required by the model

To estimate the revenue required to provide the declared fixed line services and to set a price for each service, a number of parameters must be entered into the Ovum BBM. These parameters are:

- the opening value of the RAB at the beginning of the regulatory period by asset class
- the services provided over the CAN and Core network for which prices are to be estimated
- the length of the price estimation period
- forecast operating expenditure and overheads
- forecast capital expenditure and asset disposals over the period, which will be rolled into the RAB
- forecasts of the parameters required to calculate the WACC
- the depreciation method to be adopted
- the tax value of the opening RAB and the corporate tax rate, including allowances for accelerated depreciation
- cost allocation factors to allocate a share of the aggregate revenue requirement to specific services
- forecast demand for each service over the period and the average call duration for LCS
- forecast inflation over the period.

The methodology and assumptions adopted by the ACCC to ascribe values to these parameters are discussed in detail in the following sections of this appendix.

A2.4 Real pricing approach

The Ovum BBM undertakes all the calculations to determine the revenue requirement and prices in real terms, except for the tax calculations which must be done in nominal terms (see section A5). Real prices are then converted to nominal prices by applying the forecast inflation rate.

In deciding that the Ovum BBM should be a real model, the ACCC weighed up the advantages and disadvantages of real and nominal approaches to estimating prices. It concluded that the advantages of a real approach outweighed the disadvantages.

The advantages of adopting a real approach to estimating prices include:

- Simplified assessment—using real values facilitates the assessment of trends and identification of cost drivers. Transparency is improved by removing the impact of inflation from the estimates of operating and capital expenditures.
- Avoidance of timing issues—a real approach avoids timing issues associated with applying inflation adjustments to certain items according to when they are incurred during the year.
- Consistency with other regulators—a real approach has been used by a number of state regulators, including IPART and the Essential Services Commission. While the AER's PTRM adopts a nominal approach, a number of parameters are

estimated in real terms, such as the real rate of return, and then adjusted for forecast inflation.

The ACCC considered that the main disadvantages of a real approach related to clarity and transparency. In terms of clarity, a nominal approach may be better understood by market participants. Financial markets typically express rates of return in nominal terms. However, this can be addressed by showing the nominal value for the WACC using the inflation forecasts used in the model.

In terms of transparency, real forecast data such as operating and capital expenditures would need to be adjusted for inflation to calculate nominal forecast values. Similarly, actual forecasts would have to be deflated to obtain real forecasts. The ACCC considers this disadvantage can be addressed by clearly stating the inflation forecasts used in the model so that real parameter values can be converted to nominal values.

The model has calculated real values in \$ as at 1 July 2009 because actual expenditure data is generally available for up to 30 June 2009.

A3 Financing capital expenditure

A3.1 Rolling forward the RAB

At the end of the regulatory period, the RAB must be rolled-forward to determine the opening value of the RAB for the start of the new regulatory period. During the period, the RAB is updated each year to reflect that year's capital expenditure, depreciation and asset disposals. The roll-forward model updates the RAB during the period by applying the following formula:

$$RAB_{t+1} = RAB_t + CAPEX_{t+1} - depreciation_{t+1} - asset\ disposals_{t+1}$$

Capital expenditure is not a direct component of the revenue requirement (as operating expenditure is), but rather is rolled into the RAB. The costs of financing capital expenditure are recovered through the revenue requirement through the return on capital (given by the product of the WACC and the RAB) and the return of capital (through regulatory depreciation).

Capital expenditure through the year is added to the closing RAB for that year. The return on capital for the following year is then calculated by the product of the opening RAB and the real vanilla WACC. The opening RAB in a given year is simply the previous year's closing RAB.

Capital expenditure is assumed to be undertaken evenly over the year. To reflect this assumption, the timing of capital expenditure is assumed to occur mid-way through the year. To compensate the access provider for the investment in capital expenditure over the half year, forecast capital expenditure is added to the closing RAB (or, equivalently, next year's opening RAB) with a half-year WACC adjustment given by:

$$capex_{t*+1/2} = capex_{t*} (1 + WACC)^{1/2}$$

Using this method, capital expenditure in a particular year has no impact on the revenue requirement for the year in which it occurs. Rather, in the following year, the previous year's capital expenditure plus the half-year WACC adjustment is fully incorporated into the RAB.

Concerns have been raised in the context of other regulated industries that this method may overcompensate the regulated business for its actual capital costs. While the ACCC has not comprehensively investigated the potential impact on the access provider's cashflows in this review, it considers that any potential over-compensation is likely to be minor. The ACCC may consider this issue further if it receives information that suggests any potential over-compensation may be significant.

Forecasts of capital expenditure and asset disposals are required to roll forward the RAB.

A3.2 Capital expenditure forecasts

The BBM requires capital expenditure forecasts as an input into calculating prices for the estimation period. As noted above, forecast capital expenditure is added to the RAB on a yearly basis and forms a component of the revenue requirement through the return on and of capital by being rolled into the RAB.

Section 6.3 of this draft report outlines a number of methods that can be used to generate capital expenditure forecasts. During the process of estimating draft prices

for the regulatory period, the ACCC approached Telstra for its forecasts of future capital expenditure but Telstra advised that suitable forecasts are not available. In the absence of capital expenditure forecasts provided by Telstra, the ACCC has assumed that capital expenditure over the regulatory period will be approximately the same as the five year average of past capital expenditure (in real terms) on assets used to provide the declared fixed line services.

The ACCC considered two sources of data on past capital expenditure. First, the ACCC derived estimates of capital expenditure from the RAF data provided by Telstra. The RAF data do not directly report gross capital expenditure. Implied capital expenditure is calculated as the year-on-year change in the historical value of assets by asset class (that is, the difference between the opening and closing book value of the assets). This method of estimating annual capital expenditure is subject to significant problems. In some years, the method implies that net capital expenditure is negative. In addition, implied capital expenditure is highly volatile on an annual basis. The estimation of implied capital expenditure may be distorted by a number of factors, including:

- asset sales, asset write-downs, transfers of assets to related companies, or other asset disposals during the year
- ‘retirements’ of assets that become fully depreciated during the year
- changes in asset lives that alter the written down value of those assets
- any changes in accounting practices or valuation approaches
- the potential inclusion of some network land and building assets.

Due to these problems, the ACCC concluded that using RAF data to estimate implied capital expenditure does not produce sufficiently reliable estimates to use in forecasting capital expenditure.

Second, the ACCC considered the capital expenditure data provided in Telstra’s annual reports. Several assumptions were required to allocate reported capital expenditures to the CAN and Core assets:

- The 2008, 2009 and 2010 annual reports record capital expenditure in a number of categories, including fixed access, network core and transmission.⁸⁰ The ACCC considers the capital expenditure reported for fixed access is likely to represent investments in the CAN, while the expenditure reported for network core and transmission relate to the Core as defined in the BBM.
- Prior to 2008, different classifications were used to allocate capital expenditure. The ACCC has assumed that capital expenditure reported for the customer access network relates to the CAN while switching and transmission expenditures have been allocated to the Core.
- All of the capital expenditure recorded in the annual reports’ transmission category has been allocated to the Core network. This is likely to overstate actual capital expenditure on transmission assets in the Core because some of this expenditure could relate to inter-capital transmission and non-declared regional

80 The other categories of capital expenditure are: IT, land and buildings, products, Sensis, wireless access, international, and other.

transmission assets.⁸¹ However, the ACCC does not have disaggregated data to allow it to exclude these expenditures.

Table A3.1 shows the capital expenditure reported in Telstra's 2006 to 2010 annual reports that has been allocated to the CAN and Core assets in the BBM. The nominal expenditures from the annual reports are shown, in addition to the expenditures in real terms. The five year average level of estimated real capital expenditures in the CAN and the Core is also shown.

Table A3.1 Capital expenditure reported in Telstra's annual reports actual and indexed to 1 July 2009 prices (\$m)

	2005-06	2006-07	2007-08	2008-09	2009-10
CAN	800	629	820	708	547
Indexed	928	691	848	719	547
5 year average (indexed)	747				
CORE	878	1 513	1 143	997	732
Indexed	1 019	1 663	1 182	1 013	732
5 year average (indexed)	1 122				

To calculate capital expenditure in real terms, each annual capital expenditure figure was indexed to 1 July 2009 prices using a simple average of the change in the Australian Bureau of Statistics (ABS) labour price index for the private communication sector and the ABS producer price index for electronic equipment and other machinery. The price changes in each of these indices and the average price movements used to index capital expenditure are shown in table A3.2.

Table A3.2 Price movements used to index capital expenditure

Year	Change in wage price (%)	Change in electronic equipment and other machinery (%)	Average price change (%)
June 2006	3.3	7.8	5.6
June 2007	4.2	8.3	6.3
June 2008	3.1	0.5	1.8
June 2009	2.6	0.6	1.6

Source: Australian Bureau of Statistics, *6345.0 Labour Price Index, Australia* at: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0/>; Australian Bureau of Statistics, *6247.0 Producer Price Index, Australia: Table 14-Electronic equipment and other machinery* at: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6427.0Jun%202009?OpenDocument>. The ACCC notes that the ABS has recently revised the indexes included in its *6427.0 Producer Price Indexes, Australia* publication and the information used in the table may not be available in future.

The ACCC notes that capital expenditure is volatile over time, as shown in table A3.1. The ACCC's capital expenditure forecasts do not include such volatility because there is insufficient information to make reasonable predictions. The ACCC has therefore smoothed out actual capital expenditure over the past five years to obtain an average value for the underlying level of investment in CAN and Core assets.

The ACCC has used a capital expenditure forecast of \$750m for the CAN and \$1100m for the Core over the four-year estimation period, based on average real capital expenditure estimated from Telstra's annual reports (rounded to the nearest

81 Inter-capital transmission is a declared service but not one of the fixed line regulated services in the current review. Inter-capital transmission would not be allocated to the Core network.

\$50m). The ACCC notes that the forecasts are unlikely to be accurate for each year of the estimation period (due to volatility in actual expenditure). However, the ACCC considers this approach is the best currently available for deriving a reasonable forecast of total capital expenditure over the four year estimation period.

Table A3.3 Capital expenditure forecasts (in \$m at 1 July 2009)

	2009-10	2010-11	2011-12	2012-13	2013-14
CAN	750	750	750	750	750
Core	1100	1100	1100	1100	1100

Forecast total capital expenditure must be allocated to the appropriate asset classes. In allocating forecast capital expenditure to assets, the ACCC has taken into account asset size, remaining asset life and expected demand for the services using the asset (which may result in a need to expand capacity). In doing so, the ACCC has applied caution in the weight placed on estimated remaining asset lives for the reasons set out in section A3.3.4. Tables A3.4 and A3.5 show the capital expenditure forecasts for each asset class.

Table A3.4 Allocation of capital expenditure by CAN asset class (\$m at 1 July 2009)

CAN	2009-10	2010-11	2011-12	2012-13	2013-2014
Ducts and pipes	300	300	300	300	300
Copper cables	133	133	133	133	133
Other cables	133	133	133	133	133
Pair gain systems	17	17	17	17	17
Radio CAN	83	83	83	83	83
Other assets	84	84	84	84	84

Table A3.5 Allocation of capital expenditure by Core asset class (\$m at 1 July 2009)

Core	2009-10	2010-11	2011-12	2012-13	2013-2014
Switching Equipment - Local	500	500	500	500	500
Switching Equipment - Trunk	100	100	100	100	100
Switching Equipment - Other	80	80	80	80	80
Inter-exchange Cables	90	90	90	90	90
Transmission Equipment	50	50	50	50	50
Radio Bearer Equipment	90	90	90	90	90
Satellite equipment	90	90	90	90	90
International network equipment	100	100	100	100	100

A3.3 Weighted average cost of capital (WACC)

A firm's WACC is the 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 with equivalent risk; that is, it represents the firm's opportunity cost of capital. The WACC is multiplied by the regulatory asset base to calculate the firm's return on capital.

The ACCC has used a real vanilla WACC to calculate the return on capital. The formula for calculating the real WACC is the same as for calculating the nominal WACC except that the risk free rate and the debt risk premium are expressed in real terms. The vanilla WACC is calculated as follows:

$$WACC_{vanilla} = \frac{D}{V} \times E[Kd] + \frac{E}{V} \times E[Ke]$$

where:

D = the value of debt

E = the market value of equity

Kd = the required/expected return on debt

Ke = the required/expected return on equity

The vanilla WACC is a post tax-WACC. The cash flows that are applied to the vanilla WACC are post-tax cash flows and they include the benefits from imputation as well as the interest tax shield.

The ACCC has used a real vanilla WACC of 6.39 per cent (which equates to a nominal vanilla WACC of 9.14 per cent) to estimate draft indicative prices. The parameter values used to obtain the WACC estimate are summarised in table A3.6. The methodology and data used to derive the parameter estimates are set out below.

Table A3.6 Estimates of the vanilla WACC and WACC parameters

WACC parameter	Estimated value
Nominal risk free rate	5.36%
Expected inflation	2.59%
Real risk free rate	2.70%
Nominal debt risk premium	3.07%
Real debt risk premium	2.99%
Debt issuance cost	0.085%
Market risk premium	6%
Equity beta	0.7
Debt gearing	40%
Imputation factor	0.65
Debt beta	0%
Equity issuance costs	0%
<i>Nominal Vanilla WACC</i>	<i>9.14%</i>
<i>Real Vanilla WACC</i>	<i>6.39%</i>

A3.3.1 Cost of equity

The cost of equity is a direct input into the WACC formula and needs to be estimated to derive the overall cost of capital for the regulated firm. The cost of equity reflects the opportunity cost of not investing in another investment of equivalent risk.

The cost of equity can be estimated by the capital asset pricing model (CAPM). The CAPM specifies a relationship between the expected return on an individual risky

asset or business and the level of systematic (or non-diversifiable) risk.⁸² The formula is:

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

where:

$E[Ke]$ = 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

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. The ACCC considers regulated firms should use an averaging period when estimating the yield on the risk free rate and the yield on debt, to address day-to-day market volatility.⁸³

In the basic form of the CAPM, investors' planning horizons typically would match the life of the asset. This implies that long term investments should be matched with long term government bonds.⁸⁴ Most fixed network assets, such as ducts and pipes, are long-lived and it is appropriate to use a long-term rate such as 10 years for these assets.

Following the Tribunal's decision in relation to GasNet's access arrangements,⁸⁵ the ACCC has generally used 10 year CGS bonds to determine the risk free rate. The Tribunal's view was reiterated in the ULLS undertaking decision:⁸⁶

[404] *Gasnet* has suggested that a 10 year rate is appropriate where the life of the assets and the length of the investment is long. The Tribunal considers that this is the case here, given the nature of the CAN assets and the investment in those assets.

...

[408] The Tribunal sees no present reason not to follow the decision in *Gasnet*. The Tribunal is therefore not persuaded to depart from the approach of the ACCC and Telstra to use government bonds with a 10 year maturity as an appropriate proxy for the risk-free rate.

The ACCC considers that continuing to use the 10 year Australian Government bond yield to maturity and a 10 day averaging period, as used in previous decisions such as

82 Systematic risk refers to risk that is inherent in the asset that cannot be diversified away. Systematic risk includes market wide factors which affect all companies for example, changes in interest rates and inflation. Hence, systematic risks faced by investors are those risks that are common to the market as a whole.

83 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 204.

84 Bishop and Officer, Term of risk free rate, Prepared for Energy Networks Association, Australian Pipeline Industry Association and Grid Australia, September 2008, p. 13.

85 *Application by GasNet Australia (Operation) Pty Ltd* [2003] ACompT 6.

86 *Application by Telstra Corporation Limited* [2010] ACompT 1 at [404], [408].

the ULLS undertaking,⁸⁷ will promote consistency and certainty in moving to a building block approach.⁸⁸ This approach is consistent with other decisions by the ACCC and the AER. The ACCC considers that the risk free rate should be set for the duration of the regulatory period.

In the BBM, the ACCC has used a real risk free rate, which is calculated by deflating the nominal risk free rate by expected inflation.

Nominal risk free rate

For the purposes of calculating draft indicative prices, the ACCC used a 10 day averaging period from 2 June 2010 to 15 June 2010. The average 10 year yield to maturity of 10 year Australian Government bonds for this period was 5.36 per cent.⁸⁹ The risk free rate will be updated to reflect an averaging period closer to the release of the final indicative prices.

Expected inflation rate

The ACCC/AER has previously determined that the best estimate of inflation over a 10 year period is to use the Reserve Bank of Australia's (RBA) short term inflation forecasts which currently extend out to 2 years and then adopt the mid-point of its target inflation band (which is 2.5 per cent) for the remaining years. The RBA's current inflation forecast for the quarters ending June 2011 and June 2012 is 3 per cent.⁹⁰

The RBA's inflation forecast over the year to June is used for consistency with the averaging period and bond duration. A geometric average of the forecast inflation rates is used to adjust for compounding inflation between years. The geometric average of the inflation forecasts from June 2011 to June 2020 is 2.59 per cent. The model uses the geometric average over the 10 year bond period to ensure consistency with the inflation rate used in the WACC.

The average inflation rate has also been applied to the real prices estimated by the Ovum BBM to obtain nominal prices.

Real risk free rate

To obtain the real risk free rate from the nominal risk free rate the Fisher equation is applied:

$$\frac{1+i}{1+\pi} = 1+r$$

where:

i = nominal interest rate

π = expected inflation

r = real interest rate

87 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 204.

88 The ACCC's position, consistent with the AER's position, is that the maturity of bonds used as the risk free proxy should match the term of the regulatory period and the rate should not be reset over this period.

89 Bloomberg, sourced on 16 June 2010.

90 RBA, *Statement on monetary policy*, 6 May 2010, p.56.

The real risk free rate after adjusting the nominal risk free rate for expected inflation is 2.70 per cent.

Market risk premium

The 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 the ACCC has adopted that convention.

The MRP should just be sufficient to induce investment in the market portfolio. In determining the MRP the ACCC has had regard to historical estimates, current studies of Australian market practitioners and regulatory precedent.

The MRP is not directly observable as it is an expected premium. Historical market risk premiums estimated over a long period of time are frequently used as the best estimate of what the market risk premium is likely to be in the future. An MRP of 6 per cent is supported by various long term historical estimates.⁹¹

Surveys of Australian financial market practitioners have also found that the most commonly used MRP is 6 per cent.⁹² Studies of Australian financial market practitioners involved in capital budgeting show they most commonly use a 6 per cent per annum as an MRP for asset or investment valuations.⁹³ In addition, survey data found a MRP of 6 per cent was the most commonly adopted value by market practitioners prior to the global financial crisis.⁹⁴

In the 2008 ULLS undertaking decision, the ACCC supported a conservative value of 6.5 per cent for the MRP to reflect the then global economic conditions and the consequent extreme uncertainty in capital markets.

The ACCC’s current view is that the Australian economy has shown signs of recovery and Australian market conditions appear to be returning to normal (that is, pre-global financial crisis). This is consistent with recent ACCC decisions such as the Hunter Valley Coal Network Access Undertaking and Australian Postal Corporation 2010 Price Notification which concluded that the MRP estimate should be the historical value of 6 per cent.⁹⁵ While the AER has applied a value of 6.5 per cent, it has noted that “commentary on financial markets indicates clear signs of stabilisation since the time of the AER’s SORI and its decision to increase the MRP to 6.5 per cent” and “the AER considers that a MRP of 6.5 per cent may be considered conservative when

91 J.C. Handley prepared a report to the AER on the historical equity risk premium for the AER’s review of the WACC parameter. The report used estimates for the periods 1883-2008, 1937-2008, and 1958-2008, ‘grossed-up’ for a 0.5 value of imputation credits, and found an MRP range of 5.6 to 6.1 per cent.

92 AER, *Electricity transmission and distribution network service providers – Review of the weighted average cost of capital (WACC) parameters – Final decision*, May 2009, p. xib.

93 Troung G., Partington, G. and Peat, M. (2008) “Cost of Capital Estimation and Capital Budgeting Practice in Australia” *Australian Journal of Management*, Vol. 33, No. 1, June 2008, p. 155.

94 KPMG (2005), *Cost of capital – market practice in relation to imputation credits*, August, p. 15; Telstra’s WACCs for Network ULLS and the ULLS and SSS Businesses, 2006, Capital Research, Neville Hathaway.

95 ACCC, *Draft Decision: Australian Rail Track Corporation Limited – Hunter Valley Coal Network Access Undertaking*, 2010, p. 568. ACCC, *Australian postal Corporation 2010 Price Notification*, 2010, p. 80.

accounting for current prevailing conditions”.⁹⁶ The ACCC considers the appropriate value for the market risk premium is 6 per cent.

Equity beta

The equity beta represents a measure of the systematic risk of an equity investment in a company relative to an equity investment in the equity market as a whole. The equity beta includes both the fundamental systematic business risk of the firm and any financial risk due to leverage.

Equity beta is measured by estimating the covariance between the return on the relevant assets or investments with the return of a portfolio representative of the market. The equity beta of the market portfolio is standardised at an average of one. Where the equity beta equals one, it indicates that the return on the investments has the same sensitivity to systematic risk as the overall market. If beta is less than one, then the sensitivity of the investments to systematic risk is less than the overall market. Conversely, where the value is greater than one, the systematic risk of the asset is greater than the market and investors would expect a higher return for bearing greater risk.

It is appropriate to use a value of equity beta that is expected to best represent the systematic risk profile of an efficient telecommunications service infrastructure provider over the relevant regulatory period. As with all WACC parameters, estimating the systematic risk profile of an efficient business provides the regulated business with the necessary incentives to earn a reasonable return on capital investment.

Regulators normally choose the equity beta by basing it on the historical equity betas of a selection of businesses that are deemed to be close comparators to the regulated business. In response to submissions by Telstra, the ACCC has previously considered the direct estimation approach for the equity beta and found potential difficulties in using this approach.⁹⁷ The ACCC considers benchmarking with comparable firms is a more appropriate method of estimating the equity beta.

Benchmarking approach

The ACCC has used telecommunications firms from selected advanced countries in the OECD as comparable businesses. A number of advanced countries were excluded from the benchmarking study for reasons including not being publicly listed, not providing fixed line services, and insufficient data.⁹⁸

In response to the Tribunal’s view in the 2008 Undertaking decision, the ACCC has considered monthly and weekly benchmarking data to determine which frequency provides the most robust and reliable estimate of the equity beta.⁹⁹ Daily estimates of the equity beta have not been calculated because a recent Ovum study found that daily data are less reliable.¹⁰⁰

96 AER, *Draft decision: Victorian electricity distribution network service providers – Distribution determination 2011-2015*, p. 503.

97 ACCC, *Final decision: Assessment of Telstra’s Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 222.

98 These include Cyprus; Malta; Luxembourg; Norway; Iceland; Belgium; Slovenia; and Ireland.

99 *Application by Telstra Corporation Limited* [2010] ACompT 1, p. 100.

100 Ovum, *Review of the economic principles, capital cost and expense calculations of the Telstra Efficient Access cost model*, 6 August 2008, p. 36.

The ACCC also considered whether to use 18 months or 2 years of data instead of 5 years. It concluded that a longer time period would be more reliable and appropriate for estimating an equity beta used as a basis for setting regulated returns for long-term investments. A shorter time period would also have too few sample points to produce reliable estimates from monthly sampling.

Table A3.7 Benchmark estimates of equity and asset betas across OECD countries

Firm	5 year monthly equity beta	5 year weekly equity beta	5 year monthly asset	5 year weekly asset beta	Debt/Equity Ratio	Country of Origin
AT&T	0.706	0.78	0.525	0.580	0.348	US
Qwest	0.824	1.338	0.327	0.531	1.536	US
Verizon	0.633	0.753	0.438	0.521	0.450	US
Cincinatti Bell	1.599	1.225	0.442	0.339	2.650	US
BCE	0.573	0.15	0.386	0.101	0.492	Canada
British Telecom	0.978	0.727	0.521	0.387	0.888	Britain
Telekom Austria	0.743	0.751	0.467	0.472	0.598	Austria
Telcom Italia	0.59	0.867	0.244	0.358	1.436	Italy
Hellenic Telecom	1.286	0.873	0.773	0.525	0.672	Greece
TDC solutions	0.733	0.241	0.372	0.122	0.980	Denmark
Portugal Telecom	0.723	0.751	0.394	0.409	0.846	Portugal
TeliaSonera	0.797	0.639	0.655	0.525	0.220	Sweden/ Finland
Telefonica	0.828	0.819	0.506	0.500	0.644	Spain
Deutsche Telecom	0.595	0.767	0.320	0.413	0.868	Germany
France Telecom	0.65	0.71	0.371	0.405	0.760	France
KPN	0.202	0.499	0.129	0.319	0.570	Netherlands
SwissCom	0.087	0.394	0.062	0.279	0.416	Switzerland
NTT	0.311	0.381	0.175	0.215	0.784	Japan
SingTel	0.422	0.157	0.368	0.137	0.148	Sing
PCCW	0.494	0.223	0.213	0.096	1.336	HK
Bezeq	0.401	0.042	0.291	0.030	0.384	Israel
Telecom NZ	1.185	0.828	0.834	0.583	0.426	New Zealand
Telstra	0.219	0.209	0.168	0.160	0.306	Australia
Average	0.677	0.614	0.390	0.348	0.738	

Source: Bloomberg Data Services

Table A3.7 compares equity and asset betas for a sample of OECD countries using monthly and weekly data over 5 years. The equity betas obtained from Bloomberg cannot be directly compared because different companies have different gearing ratios which result in different levels of risk. To produce comparable estimates, the equity betas are de-levered to obtain asset betas, which can be directly compared across companies. The benchmark asset beta is then re-levered using Telstra's gearing ratio

to obtain the benchmark equity beta for Telstra. The ACCC has used the Monkhouse formula to convert asset betas to equity beta and vice versa.¹⁰¹

The ACCC considers that greater weight should be placed on estimates based on monthly data sampling than weekly data sampling because:

- it is the more commonly recommended estimation interval and length used in financial markets;
- it picks up the systematic risk of an investment in Telstra's equity to the equity market as a whole over the monthly holding period which the ACCC considers is more representative of the risks facing longer term investors than using weekly or daily data holding period returns; and
- it is also likely to remove trading effects.

The international benchmarking results suggest a benchmark asset beta of 0.39. This value is lower than benchmark asset beta value of 0.47 estimated for the 2008 ULLS undertaking decision.¹⁰² Telecommunications companies' share prices were not as volatile as the S&P 500 index during the global financial crisis because telecommunications companies were regarded as a 'safe' stock for investors during their 'flight from risk'. This may provide a downward bias in recent estimates of equity betas compared to their long term values.

ACCC conclusion

While the most recent benchmark estimates for asset beta are likely to have been influenced by the global financial crisis, the ACCC considers that any downward bias in the benchmark value would be offset by the different composition of the benchmarked firms' businesses compared to Telstra's CAN.

The systematic risk associated with business lines like mobile communications is likely to be significantly higher than the systematic risk associated with fixed line services. Since the benchmarked firms provide both fixed and mobile networks, the benchmark asset beta is likely to be higher than the asset beta of Telstra's CAN alone. The ACCC has previously stated that the appropriate WACC for the ULLS is one based on a business providing access to a fixed line customer access network.¹⁰³

Furthermore, the ACCC has in the past stated that an asset beta value of 0.5 for Telstra is conservative since the systematic risk of the fixed line services is likely to be less than Telstra's operations as a whole.¹⁰⁴ An asset beta of 0.5 is consistent with an equity beta for Telstra of 0.83.

In its most recent decisions, the AER stated that the empirical evidence from Australia and overseas indicated that an appropriate range for the equity beta of a regulated utility was between 0.41 and 0.68. After consideration of other relevant factors, the

101 Monkhouse, P. 1997, *Adapting the APV Valuation methodology and the Beta Gearing Formula to the Dividend Imputation Tax System*, Accounting and Finance, 37(1), pp. 69-88. The Monkhouse formula is expressed as:
$$\beta_e = \beta_a + (\beta_a - \beta_d) * \left[1 - \frac{E[K_d]}{1 + E[K_d]} \right] * [(1 - \gamma) * t] * \frac{D}{E}$$

102 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 224.

103 ACCC, *Unconditioned Local Loop Service: Pricing principles and indicative prices*, June 2008.

104 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 229.

AER decided to take a “cautious approach” and adopt an equity beta of 0.8 for the regulated electricity businesses, noting that this value is above the range indicated by empirical estimates. In doing so, the AER was mindful of regulatory stability in moving from state-based to national regulation and the equity betas previously adopted by state-regulators, which ranged from 0.7 to 1.1.¹⁰⁵

The ACCC’s 2010 Australia Post decision used an asset beta of 0.355 and an equity beta of 0.463.¹⁰⁶ In its draft pricing principles for rural water corporations, the ACCC has proposed an equity beta of 0.7.¹⁰⁷ These values are both within the range of empirical estimates identified in the AER’s WACC review.

The ACCC has concluded that an equity beta of 0.7 is appropriate, based on an asset beta of 0.42 and Telstra’s debt/equity ratio. These values take into account regulatory stability and are consistent with the approach adopted in recent ACCC and AER decisions for other regulated utilities. The ACCC notes that it has taken a conservative approach in applying a value for the equity beta for Telstra’s CAN that is at the top end of the range of empirical estimates in the AER’s WACC review.

Equity issuance costs

Equity issuance costs are the fees associated with issuing new equity capital. Since equity issuance costs are only incurred when a business raises equity capital, the ACCC considers that Telstra should not be compensated for costs it has not incurred. The ACCC considers that equity issuance costs should be recovered as a cash flow (operating cost) allowance when a business raises equity capital and should not be included in the WACC.

A3.3.2 Cost of debt

The cost of debt is given as the sum of the risk free rate and a margin for debt, including the costs of raising debt:

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

where:

$$E[Kd] = \text{The required/expected return on debt}$$

$$rf = \text{The risk free rate}$$

To maintain consistency within the WACC formula, the risk free rate used to estimate the cost of debt must be equal to the risk free rate used to calculate the return on equity.

Debt risk premium

The debt risk premium (DRP) accounts for debt specific risk compensation over and above the risk free rate. The DRP is dependent on the gearing level, the credit rating and term of the debt.

The DRP is derived as the difference between the yield to maturity on the chosen debt proxy (for example, 10 year A rated bond yields) and the yield to maturity (YTM) on

105 AER, *Electricity transmission and distribution network service providers—Review of the weighted average cost of capital (WACC) parameters: Final decision*, May 2009.

106 ACCC, *Australian Postal Corporation 2010 price notification—Decision*, May 2010;

107 ACCC, *ACCC pricing principles for price approvals or determinations under the Water Charge (Infrastructure) Rules—Draft*, July 2010.

the chosen risk free proxy (for example, 10 year CGS bond yields). The value for the YTM on the chosen debt proxy is usually derived from a benchmark bond index obtained from a reputable financial market data source.

The ACCC has previously used Bloomberg's A-rated cost of debt benchmark in estimating Telstra's vanilla and pre-tax WACC.¹⁰⁸ As of August 2009, Bloomberg ceased publishing A rated fair yield curves beyond seven years. Therefore this approach can no longer be used to estimate the DRP based on 10 year CGS bond yields.

The ACCC considers the appropriate methodology is to take the longest maturity A-rated bond fair yield estimate available from Bloomberg and add to this an estimate of the term premium going from the maturity of the longest dated A-rated bond out to ten years as estimated from the next (higher) credit rating Bloomberg fair yield curve quoted out to at least ten years. The same averaging period as the risk free rate is to be applied to the debt risk premium.

Nominal debt risk premium

The debt risk premium has been calculated over a 10-day averaging period from 2 June to 15 June 2010. This produces a value of 3.07 per cent for the debt risk premium. The detailed calculations are set out in the table below. These values will be updated for an averaging period closer to the release of the final indicative prices.

Table A3.8 Bond yields for 10 day averaging period, 2-15 June 2010

	10 year CGS	7 year A rated	7 year AAA rated	10 year AAA rated	Spread	Debt risk premium
10 day average	5.359	7.842	6.249	6.833	0.584	3.066

Source: Bloomberg

Real debt risk premium

To estimate the real debt risk premium, the nominal bond yields are deflated by the expected inflation rate and the real 10 year CGS is subtracted from the estimated real 10 year A rated bond yield.

Table A3.9 Real bond yields for 10 day averaging period, 2-15 June 2010

	10 year CGS	7 year A rated	7 year AAA rated	10 year AAA rated	Spread	Debt risk premium
10 day average	2.697	5.117	3.564	4.133	0.569	2.989

The average real debt risk premium during the averaging period is 2.99 per cent.

Gearing level

The gearing level of a firm refers to the ratio of debt to equity that a firm uses to finance its capital. The gearing level is used to weight the return on equity and cost of debt in the WACC formula. Where the firm's capital structure is highly geared (i.e. the firm has a high level of debt), this implies greater financial risk for the firm and therefore a greater required rate of return for both equity and debt holders.

108 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 205.

The ACCC has in the past adopted a gearing ratio of 40 per cent debt and 60 per cent equity.¹⁰⁹ Ovum's analysis of Telstra's accounts as part of the ACCC's assessment of the ULLS undertaking found an average level of 34 per cent debt to 66 per cent equity across its entire business.¹¹⁰ However, the ACCC considers that the CAN is less risky than the access provider's other operations (such as mobiles) and therefore should be able to service more debt. Telstra's debt ratio at the time of privatisation was 41.3 per cent, when it more closely resembled a pure fixed line service operator.¹¹¹ The ACCC has therefore used a debt/equity ratio of 40:60 as an appropriate gearing level for the CAN assets.

Debt issuance cost

Debt issuance costs are the costs associated with raising debt. They can be recovered through a direct cash flow allowance or an adjustment to the WACC. The ACCC currently accepts the inclusion of debt issuance costs in the return on debt.¹¹² This approach was adopted following recommendations by the Allen Consulting Group in a report for the ACCC in the context of decisions made regarding gas and electricity.¹¹³

The ACCC's view on debt issuance costs is that debt raising costs vary depending on the amount of debt on issue. Increasing the amount of debt on issue results in lower debt issuance costs due to economies of scale as shown in the table below.

The CAN as a standalone debt financed asset would be a large company with a large debt portfolio. Since Telstra is much larger than a typical gas and electricity company, Telstra is expected to have more debt on issue compared to gas and electricity companies. The ACCC considers therefore that its expected debt issuance costs would be at the lower range of estimates. The ACCC considers that the appropriate debt issuance cost is 8.5 basis points assuming six debt issues of \$500m.

109 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 232.

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

111 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 232.

112 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 206.

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

Table A3.10 Indicative direct debt raising costs based on a nominal vanilla WACC of 9.61 per cent

	Estimated costs	1 issue	2 issues	4 issues	6 issues	10 issues	12 issues
Total amount raised	Multiples of median MTN* (\$500m)	\$500m	\$1000m	\$2000m	\$3000m	\$5000m	\$6000m
1. Gross underwriting fee	Bloomberg spread, upfront per issue, amortised	7.20	7.20	7.20	7.20	7.20	7.20
2. Legal and roadshow	\$115k upfront per issue, amortised	0.37	0.37	0.37	0.37	0.37	0.37
3. Company credit rating fee	\$50k per annum	1.00	0.50	0.25	0.17	0.10	0.08
4. Issue credit rating	4 basis points upfront per issue, amortised	0.64	0.64	0.64	0.64	0.64	0.64
5. Registry fees	\$3.5k per issue, per annum	0.07	0.07	0.07	0.07	0.07	0.07
6. Paying fees	\$4/\$1million, per annum	0.04	0.04	0.04	0.04	0.04	0.04
Total	Basis points per annum	9.3	8.8	8.6	8.5	8.4	8.4

Source: ACG, Bloomberg,

* Medium term note

Debt beta

The debt beta measures the systematic risk of debt. It represents the amount of market risk that holders of debt securities bear or are assumed to bear. A debt beta of zero per cent has previously been supported by Telstra and Ovum.¹¹⁴ Consistent with previous decisions,¹¹⁵ the ACCC has adopted a value of zero for the debt beta.

A3.3.3 Imputation factor (gamma)

The gamma parameter represents the market value of tax credits, otherwise referred to as imputation credits, generated by the company that could be distributed in the form of franked dividends to shareholders. Under Australia's imputation tax system, dividends distributed by the company from post tax earnings carry imputation credits that can be used by local residents to offset their personal tax liabilities. Imputation credits represent a benefit from the investment additional to dividends or capital gains.

The gamma parameter is not a direct input in the vanilla WACC formula. In the BBM, all tax effects including imputation benefits are captured in cash flows rather than the WACC.¹¹⁶

114 Telstra, *WACC submission*, 4 April 2008, p. 45. Ovum, *TEA model (v1.0) economic review*, 6 August 2008, p. 38.

115 ACCC, *Final decision: Assessment of Telstra's Unconditional Local Loop Service Band 2 monthly charge undertaking*, April 2009, p. 243.

116 With a vanilla WACC, the tax rate parameter (τ) and the dividend imputation franking credit parameter (γ) are still relevant. These parameters are used to adjust cash flows rather than being

The general regulatory approach in Australia is to define the gamma as the utilisation rate multiplied by the imputation payout ratio:

$$\gamma = \theta * F$$

where:

θ = the utilisation rate of imputation credits is the value of distributed imputation credits to investors as a proportion of their face value.¹¹⁷

F = the imputation payout ratio is the face value of imputation credits distributed by the firm as a proportion of the face value of imputation credits generated by the firm, that is, the tax paid by the business.

Imputation credits, and hence the gamma parameter, have a range of values. The gamma can range from zero (where imputation credits are not distributed and/or not valued by investors) to one (where imputation are fully distributed and fully valued by investors). For example, where the investor is not a local resident and pays no Australian taxes, the value of imputation credits to such an investor would be zero.

Since foreign investors cannot generally make use of imputation credits, the balance between foreign and domestic shareholders is a major factor in determining the appropriate value of gamma.

The value of gamma associated with communications access pricing has in the past been set at the midpoint of the possible range between zero and one. The midpoint of the possible range was chosen for a number of reasons, including the complexity of the issues and the wide divergence of estimates produced by expert studies.

The method most commonly used to produce empirical estimates of theta is economy-wide dividend drop-off studies, which measure the extent to which an average company's share price drops once it goes ex-dividend.¹¹⁸ These studies exhibit wide divergences in their results, reflecting the widely recognised problem of disaggregating the ex-dividend price drop between the value of the cash dividend and the value of the attached imputation credits.¹¹⁹ The ACCC considers therefore that these studies' estimates of gamma should be treated with caution.

The ACCC has reviewed whether a gamma of 0.5 remains appropriate for the telecommunications industry. In doing so, it has considered the findings of recent economy-wide empirical studies.¹²⁰ These studies found a range of gamma values. The ACCC has therefore considered empirical evidence specific to the

included within the WACC equation. Gamma measures the amount by which the rate of return required by shareholders is reduced to reflect the fact that the corporate tax paid by the regulated business is treated as a pre-payment of personal tax on behalf of the shareholders.

117 Where the domestic CAPM is used, the utilisation rate is the utilisation rate of the average Australian investor.

118 Since an F value of one was typically assumed in many of these studies, the value of gamma was equal to the estimated value of theta. No industry-specific studies have been undertaken.

119 See, for example, Demspey, M. and Partington, G., 'The cost of capital equations under the Australian imputation tax system', *Accounting and Finance*, 48, 3 Sept 2008, pp. 439-460 and SFG Consulting, *The impact of franking credits on the corporate cost of capital: Empirical evidence*, Report prepared for Envestra, March 2007.

120 Including D. Beggs and C. L. Skeels, 'Market arbitrage of cash dividends and franking credits', *The Economic Record*, vol. 82, no. 258, September 2006; J. C. Handley and K. Maheswaran, 'A measure of the efficacy of the Australian imputation tax system', *The Economic Record*, vol. 84, no. 264, March 2008; SFG, *The impact of franking credits on the cost of capital of Australian companies*, Report prepared for Envestra, Multinet and SP AusNet, 25 October 2007.

telecommunications industry in reaching a view on an appropriate gamma value for that industry.

In estimating the utilisation rate, theta, the ACCC has taken into account the shareholder limitations in section 8BG(a) of *Telstra Corporation Act 1991* that restrict aggregate foreign ownership of Telstra to 35 per cent.¹²¹ Since imputation credits cannot generally be utilised by foreigners, a gamma of 0.65 would reflect the benchmark value of imputation credits available to the remaining domestic shareholders. Franking credits are fully redeemable by Australian shareholders even if some of these shareholders pay little or no tax. Since 1 July 2000, franking credits can be redeemed for cash when the shareholder's tax liabilities are less than the franking credits to which they are entitled.¹²²

Since imputation credits cannot be utilised by foreigners, but are redeemable to Australians shareholders regardless of tax status, a theta of 0.65 is considered appropriate.

The ACCC also considered a 2004 study by Hathaway and Officer that estimated a gamma of 0.35, using a theta of 0.5 and an imputation payout ratio F of 0.71.¹²³ Empirical analysis shows that the average dividend payout ratio for Telstra from 2000 to 2010 has been 100.3 per cent.¹²⁴ Telstra also distributes 100 per cent of its franking credits. Therefore the ACCC considers that the value of F for Telstra should be set at 1.0.¹²⁵

Taking into account Telstra's actual dividend payout ratio, franking credit distribution and foreign ownership restrictions, the ACCC has adopted a value for gamma of 0.65 as an appropriate value for pricing the fixed line services.

A3.3.4 Depreciation

The ACCC has used the straight line method to calculate regulatory depreciation (return of capital). This method divides the up-front cost of the asset by the asset life to spread annual depreciation expenses equally over the life of the asset. Use of straight line depreciation is consistent with the approach adopted by the ACCC and AER in other regulated industries and with the draft pricing principle proposed in chapter 6 for depreciation. As noted in section A10, prices have been smoothed over the estimation period, which effectively alters the profile of depreciation payments away from a strict straight line method.

Estimates of the expected lives of assets in the CAN and Core are required to determine a depreciation schedule for these assets. Because the majority of these assets are not new, and have therefore already been partly depreciated, their remaining

121 Telstra has estimated that as at 23 July 2010, the number of Telstra shares recorded as foreign on the Telstra register was 20.38 percent of the total number of issued Telstra shares. See Telstra's website www.telstra.com.au/abouttelstra/investor/faqs.

122 Richard Heaney, *Dividend imputation in Australia: the value of franking account balances*, December 2009.

123 Hathaway, N. and Officer, B., *The value of imputation tax credits*, Capital Research, November 2004.

124 Bloomberg.

125 The value of F cannot be benchmarked against overseas carriers, as is the case for the asset beta, as there are different tax regimes and industry structures in other countries. No Australian studies have attempted to estimate a benchmark value of F for the telecommunications industry. Given the dominance of Telstra within the telecommunications industry, an Australian benchmark would be heavily influenced by Telstra's payout ratio.

asset lives must be calculated to set the time period over which the remaining depreciation will be recovered.¹²⁶ Since each asset class will contain a mixture of assets put in place at different times, an average asset life and average remaining asset life must be calculated for each asset class.

The ACCC sought information from Telstra on average asset lives and expected remaining asset lives for the CAN and Core assets included in the BBM. Telstra advised that it was unable to provide reliable information on total and remaining asset lives for those assets.

CAN

In the absence of specific information from Telstra, the ACCC has estimated average asset lives for the CAN assets based on the asset lives used in the Analysys cost model. For the purpose of estimating the draft prices included in this report, the ACCC has used a more conservative average asset life for ducts and pipes of 30 years rather than the 35 years assumed in the Analysys model. The ACCC's adoption of a conservative assumption recognises industry controversy about the appropriate asset life assumption for ducts and pipes. The ACCC seeks submissions on the appropriateness of this assumption, including reliable information on which to base any alternative asset life assumption. Using the Analysys assumption for ducts and pipes would reduce the estimated prices for ULLS and WLR by around \$1 per month.

Remaining asset lives have been calculated by applying the estimated undepreciated percentage of each asset class (derived from RAF data) multiplied by the average asset life for that class. The table below shows the average asset lives and remaining asset lives for each asset class in the CAN used to calculate depreciation in the BBM.

Table A3.11 Estimated average and remaining asset lives by CAN asset class as at July 2009

Asset class	Average asset life	Remaining asset life
Ducts and pipes	30	[c-i-c]
Copper cables	20	
Other cables	20	
Pair gain systems	12	
Radio CAN	12	
Other assets	20	[c-i-c]

The ACCC has identified a number of qualifications that must be kept in mind when relying upon the estimated total and remaining asset lives determined by the methods described above. The assumptions used to determine the asset lives for modern equivalent assets in the Analysys model will affect the reliability of the estimated CAN asset lives. The ACCC notes that the asset lives used in the Analysys cost model relate to optimised new assets as at 2007. These asset lives were calculated from international benchmarking studies. They are not necessarily consistent with the average asset lives of the existing, generally older and un-optimised equipment actually in use. Telstra did not comment on the assumed asset lives used in the Analysys model during consultation on the model.

¹²⁶ The amount of depreciation already recovered has been taken into account in setting the initial RAB values.

Further, in calculating the remaining asset lives, the accuracy of the depreciation schedules included in Telstra's RAF data will affect the reliability of the estimates for remaining asset lives. The ACCC understands that the information in the RAF may not be especially accurate for some assets, such as ducts, pipes and cables that were put in place many years ago when record keeping was generally less robust.

An additional qualification is that, if the price of new assets is lower than the average purchase price of the existing assets, the estimated depreciated percentage applied to calculate remaining asset lives will be overstated. The remaining asset lives will therefore be underestimated.

Core

The ACCC has estimated average asset lives for the Core assets using the asset lives obtained from the Analysys cost model. As for the CAN assets, remaining asset lives have been calculated by applying the estimated undepreciated percentage of each asset class (derived from the RAF) multiplied by the average asset life for that class. The table below shows the average asset lives and remaining asset lives for each asset class in the Core used to calculate depreciation in the BBM.

Table A3.12 Estimated average and remaining asset lives by Core asset class as at July 2009

Asset class	Average asset life	Remaining asset life
Switching Equipment - Local	27	[c-i-c]
Switching Equipment - Trunk	25	
Switching Equipment - Other	20	
Inter-exchange Cables	38	
Transmission Equipment	10	
Radio Bearer Equipment	10	
Satellite Equipment	10	
International Network Cables	24	[c-i-c]

The same qualifications that apply to the estimated asset lives for the CAN assets also apply to the estimated average and remaining asset lives for the Core assets.

While recognising the limitations of the estimated asset lives used in the BBM, the calculations are based on the best information presently available to the ACCC.

A4 Forecasting operating expenditure

The BBM requires operating expenditure forecasts in order to calculate prices for the regulatory period. Operating expenditure is an input to calculating the revenue requirement, that is then allocated to services (see section A7) and divided by forecast demand (see section A8) to calculate prices for each year.

As noted in section 6.3.1 of this report, the ACCC intends to obtain operating expenditure forecasts from Telstra in the future. In the absence of these forecasts, the ACCC has, for the purpose of estimating draft indicative prices, developed its own forecasts of operating expenditure for 2010-11 to 2013-14.

The forecasts are based on Telstra's average actual operating and maintenance expenditures over the past five years, provided to the ACCC as part of the RAF. Operating and maintenance expenses related to the asset classes not used by the regulated services (data equipment, mobile network and terminal equipment, and customer equipment) were excluded from the total operating and maintenance expenditures.

To estimate total operating expenditure forecasts, the ACCC has increased the average RAF values by 10 per cent to reflect an allocation of corporate overheads.

To convert the estimated total operating expenditure figures in nominal terms to real terms, each annual total operating expenditure figure was indexed to 1 July 2009 prices using a simple average of the change in the ABS labour price index for the private communication sector and the ABS producer price index for electronic equipment and other machinery.¹²⁷ These average price movements used to index operating expenditure are the same as those used to convert capital expenditures to real terms and are shown in table A3.2.

In basing its forecasts on historical data, the ACCC has assumed that Telstra's past operating expenditure reflects an efficient level of expenditure. The estimated operating expenditure has been assumed to remain constant in real terms over the estimation period.

Table A4.1 below sets out the forecasts for real operating expenditure used in the Ovum BBM to estimate draft indicative prices.

Table A4.1 Operating expenditure forecasts (\$m as at July 2009)

	2010-11	2011-12	2012-13	2013-14
CAN (\$m)	[c-i-c]			
Core (\$m)				
Total (\$m)				[c-i-c]

Total operating expenditure must be allocated to asset classes in order to estimate prices using the Ovum BBM. The ACCC has identified three alternative methods of allocating operating expenditure to asset classes in the Ovum BBM:

127 Australian Bureau of Statistics, *6345.0 Labour Price Index, Australia* at: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0/>; Australian Bureau of Statistics, *6247.0 Producer Price Index, Australia: Table 14-Electronic equipment and other machinery* at: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6427.0Jun%202009?OpenDocument>.

- allocating operating expenditure to each asset class by the share of that asset class's depreciated asset value in the total depreciated asset value (that is, the RAB) for each year
- allocating operating expenditure to each asset class by the share of its undepreciated asset value divided by the total undepreciated asset value for that year, or
- using the allocations in the RAF and assuming they remain constant over the estimation period.

The Ovum BBM can automatically calculate the first method of allocating operating expenditure to asset class. A problem with this method is that assets that are nearly fully depreciated will have very little operating expenditure allocated to them. It seems unlikely that an asset's operating costs will decline over its life. For some assets, maintenance costs may increase as the asset experiences more wear and tear over time. Further, assets that have been fully depreciated will have no operating expenditure allocated to them, even when those assets remain in use past their assumed asset lives for accounting purposes. This appears unrealistic since, in the ACCC's view, operating costs are more likely to be related to usage of the asset.

The second method allocates operating expenditure based on the historical cost of the asset as a proportion of the total historical cost of all assets using information from Telstra's RAF data. This method allows for a more uniform allocation of operating expenditure to assets. Although this method does not allocate operating expenditure to assets according to usage of the asset, since this information is not available to the ACCC, it is a more realistic allocation method than the first method.

A third method is to allocate forecast operating costs according to the allocation shares used in the RAF. The ACCC has compared the allocations to asset classes obtained using this method with those obtained using the second method. The allocations are broadly similar.

The main difference between the methods relates to the shares of operating expenditures allocated to CAN ducts, pipes and cables. The RAF method allocates a substantially greater share of operating expenditure to cables than to ducts and pipes but the combined share allocated to the two asset classes is similar under both methods. The ACCC considers that more operating expenditure is likely to be incurred in respect of cables than for ducts and pipes, which would generally need little maintenance once they are installed. While the ACCC considers the RAF allocation method produces a more realistic allocation of costs between the two asset classes, it has concluded that there would be a minimal impact on the total share of operating costs allocated to the services using ducts, pipes and cables. This results from the fact that these services use ducts, pipes and cables in similar proportions.

The ACCC considers that the second method is simple and transparent. It may also produce a more appropriate allocation of operating expenditure over time since it takes into account investments in new assets. However, the ACCC seeks comments on the allocation methods listed above and any alternative method that could better allocate operating expenditure, taking into account the information available to implement any alternative method.

The second method has been applied to allocate operating expenditure to asset classes in the Ovum BBM. The total operating costs allocated to each asset class are shown in tables A4.2 and A4.3 below.

The ACCC seeks feedback on whether the assumptions it has used to obtain operating expenditure forecasts, allocate corporate overheads, and allocate operating expenditure to asset classes are reasonable and appropriate.

Table A4.2 Allocation of operating expenditure by CAN asset class
(\$m at 1 July 2009)

CAN	2009-10	2010-11	2011-12	2012-13	2013-2014
Ducts and pipes	[c-i-c]				
Copper cables					
Other cables					
Pair gain systems					
Radio CAN					
Other assets					[c-i-c]

Table A4.3 Allocation of operating expenditure by Core asset class
(\$m at 1 July 2009)

Core	2009-10	2010-11	2011-12	2012-13	2013-2014
Switching Equipment - Local	[c-i-c]				
Switching Equipment - Trunk					
Switching Equipment - Other					
Inter-exchange Cables					
Transmission Equipment					
Radio Bearer Equipment					
Satellite equipment					
International network equipment					[c-i-c]

A5 Calculating tax payments

The Ovum BBM applies a post-tax building block framework to determine fixed line prices. In this framework, tax forms a separate building block component of the revenue requirement.

The assessment of tax in the model follows the conventional accounting treatment of tax as it applies the corporate tax rate to profits where profits are defined as revenue minus costs. The tax assessable profit under the building block approach is calculated as the pre-tax revenue requirement minus the three classes of tax deductible expenses – operating costs, tax depreciation and interest.

Tax payable is calculated in nominal terms because tax liabilities are based on nominal values. Tax is assessed on actual (not inflation-adjusted) profits generated throughout each year and the magnitude of the tax-deduction arising from interest expenses depends on the nominal interest rate, not the real interest rate. Tax depreciation and operating costs are also calculated in nominal terms for the purposes of assessing tax payable.

The tax calculations are performed in nominal terms and then adjusted into real terms and added to the pre-tax revenue requirement to calculate the (real) revenue requirement after tax. Tax liabilities form a separate cost block in the model because the access provider requires sufficient revenue to meet its tax expenses as well as its operating costs and the costs associated with its return on and of capital (as explained in chapter 6 of this report).

Tax depreciation

Tax depreciation is a tax deductible expense in assessing the amount of tax payable.

Straight line depreciation has been applied to calculate tax depreciation. Straight-line depreciation involves dividing the initial asset value with the asset's useful life to yield a constant depreciation expense each year. Using straight line depreciation complies with Australian tax rules and accepted conventions that favour the simplicity and transparency of the straight-line method for tax purposes.

Tax depreciation differs from regulatory depreciation because the tax rules allow companies to write-off the value of capital expenditures (through accelerated depreciation) faster than the depreciation used in the regulatory accounts. A consequence of accelerated depreciation is that the long-term effective tax rate is typically significantly lower than the corporate tax rate.

The effective tax rate

The effective tax rate is used to calculate the vanilla WACC through the cost of equity. The effective tax rate is typically lower than the corporate tax rate of 30 per cent because, as noted above, it includes the effects of accelerated depreciation.

The value of the effective tax rate calculated by the model depends on the assumptions made about expected and remaining asset lives, the differences between pre and post-tax cash flows attributed to the asset (equivalent to the amount of tax payable), and the length of the period over which the effective tax rate is calculated.

The pre-tax cash flows used to obtain the effective tax rate are calculated as the pre-tax revenue requirement minus operating costs, interest, capital expenditure, and

debt repayments. The post-tax cash flows are the pre-tax cash flows minus the tax payable.

Pre and post-tax cashflows are calculated for each year of the regulatory period. The respective internal rates of return (IRR) for the pre and post-tax cashflows are determined to give the $IRR_{\text{post-tax}}$ and $IRR_{\text{pre-tax}}$. The effective tax rate is then given by:

$$\tau_E = 1 - \frac{IRR_{\text{post-tax}}}{IRR_{\text{pre-tax}}}$$

The effective tax rate (in relation to equity) calculated by the model is 22.05 per cent. The effective tax rate is below the corporate tax rate of 30 per cent reflecting the tax benefits accruing under accelerated depreciation.

A6 Summary of the estimated revenue requirement

The BBM calculates the aggregate revenue required by the access provider to recover its costs of providing services on the PSTN for each year of the relevant regulatory period. As such, the aggregate revenue requirement includes non-regulated services provided using the PSTN, such as Telstra's retail fixed line services, transmission services, xDSL and mobile services, as well as the declared fixed line services. The allocation of appropriate shares of the aggregate revenue requirement to specific declared fixed line services is discussed in section A7.

The aggregate revenue requirement is calculated according to the following formula:

$$RR_1 = E(OPEX_1) + (RAB_0 * WACC) + E(DEP_1) + E(TAX_1)$$

where:

RR₁ = the aggregate revenue requirement for the year.

E(OPEX₁) = the forecast operating expenditure for the year.

RAB₀ = the Regulatory Asset Base at the beginning of the year, which equals the closing value of the RAB for the previous year

WACC = the regulatory Weighted Average Cost of Capital and is multiplied by the RAB to calculate the required return on capital.

E(DEP₁) = the forecast depreciation expensed for the period and represents the return of capital.

E(TAX₁) = the tax liabilities forecast to be incurred during the year.

The methodology and assumptions used to estimate each cost block were discussed in sections A2-A5. The table below summarises the resulting aggregate revenue requirement for each year (in real terms) and the inputs used.

Table A6.1 Aggregate revenue requirement (in \$m as at July 2009)

	2010-11	2011-12	2012-13	2013-14
Opex (\$m)	[c-i-c]			
Return on capital (RAB*WACC) (\$m)				
Return of capital (depreciation) (\$m)				
Tax payments (\$m)				
Estimated revenue requirement (\$m)				[c-i-c]

The aggregate revenue requirement shown in table A6.1 represents the estimated total revenue required to recoup the costs of providing all services that use CAN and Core assets. To determine the revenue required to provide specific services, the aggregate revenue requirement must be allocated to the different services sharing the use of the network assets. The ACCC has applied the cost allocation factors discussed in section A7 to estimate the costs and revenue requirement attributed to specific services and these allocations are shown in table A6.2 below.

Table A6.2 Allocation of revenue requirement to specific services (in \$m as at July 2009) [numbers in table are c-i-c]

			2010-11	2011-12	2012-13	2013-14
Declared fixed-line services	ULLS	Operating expenditure	■	■	■	■
		Return on capital	■	■	■	■
		Return of capital	■	■	■	■
		Tax payments	■	■	■	■
		Total	■	■	■	■
	WLR	Operating expenditure	■	■	■	■
		Return on capital	■	■	■	■
		Return of capital	■	■	■	■
		Tax payments	■	■	■	■
		Total	■	■	■	■
	PSTN OTA	Operating expenditure	■	■	■	■
		Return on capital	■	■	■	■
		Return of capital	■	■	■	■
		Tax payments	■	■	■	■
		Total	■	■	■	■
	LCS	Operating expenditure	■	■	■	■
		Return on capital	■	■	■	■
		Return of capital	■	■	■	■
		Tax payments	■	■	■	■
		Total	■	■	■	■
Total revenue requirement allocated to declared fixed line services			■	■	■	■
Other regulated and unregulated services	Operating expenditure		■	■	■	■
	Return on capital		■	■	■	■
	Return of capital		■	■	■	■
	Tax payments		■	■	■	■
	Total		■	■	■	■
Total			■	■	■	■

A7 Allocation of revenue requirement to specific services

Wholesale fixed line services are provided via the PSTN network, which is composed of the CAN and the Core network. The CAN represents the link between the telephone exchange and the customer.¹²⁸ The Core network includes switching and inter-capital transmission equipment used to connect each customer's call to its destination. Other non fixed line services, such as mobile services, transmission services and Telstra's retail fixed line services, are also provided using CAN and Core assets.

The revenue requirement calculated by the BBM is an aggregate revenue requirement for all the services provided using CAN and Core assets included in the BBM. To calculate the revenue to be recovered from each of the declared fixed line services, an appropriate share of the total revenue requirement (which represents the total costs of providing services via the CAN and Core networks, excluding the three asset classes that are not included in the BBM¹²⁹) must be allocated to each of these services. In the BBM, cost allocation factors are applied to the revenue requirement to allocate costs to specific services and permit the calculation of prices for those services.

The cost allocation factors set for each service should ensure that prices are cost-based and will adequately compensate the access provider for supplying the declared fixed line services.

Cost allocation method

CAN assets are used to provide the ULLS and WLR. The Core network is used to provide the WLR, PSTN OTA and LCS.

The ACCC has used the cost allocation factors in the Analysys Cost Model as the starting point for deriving appropriate cost allocation factors. For the CAN, these cost allocation factors were derived from demand data for individual services combined with routing factors to determine the percentage of assets used by each particular service. The routing factors were derived from industry and engineering best practice scenarios and reflect the use of assets by each individual service in 2007-08 when the Analysys model was developed, updated in 2009 for 2008-09 demands estimated by Analysys.

For the Core network, the allocation factors were derived from asset usage by the relevant services, routing factors and forecast demand. The allocation factors were then used to derive the proportions of costs assigned to each asset class and to each service.

Interested parties are able to obtain a copy of the Analysys model from the ACCC. The ACCC consulted widely on the model and received substantial comments from industry. No comments were received on the cost allocation method.

128 ACIF Code C569:2005 defines the customer access network as enabling the connection of customer equipment to switching equipment in a telecommunications network. It consists of a network of conduits and pipes with a mixture of cables.

129 Three asset classes—data equipment, mobile network and terminal equipment, and customer equipment—were excluded from the assets included in the RAB (and the BBM) because these assets are not used by the regulated fixed line services.

The three steps in the method used to derive the cost allocation factors in the Analysys model are described below.

Step one – calculation of CAN cost allocations within the Analysys model

- a) For each asset, apart from operating expenses, the *asset cost per unit output per geotype* is initially computed by summing the annualised capital expenditure, operating cost and cost sharing with the Core network. Operating expenses are classified as a separate ‘asset’ and calculated by a mark-up on the total asset costs.
- b) The cost to provide the services excluding operating expenses is then calculated as follows for each asset:

*CAN routing factor * service demand per geotype* asset cost per unit output per geotype / % of SIOs that can be ULLS in geotype*

- c) The costs excluding business expenses from 1(b) are then aggregated across the geotypes to produce the cost to provide the services on a per asset and per service basis.
- d) For each service, the sum of asset costs from 1(c) is then divided by the total asset costs for all CAN services excluding operating expenses. The percentages are then applied to the total CAN operating expense to arrive at service specific operating expenses allocations.
- e) The costs from step 1(c) and 1(d) are then grouped according to asset classes and services.

Step two – calculation of Core cost allocations within the Analysys model

- a) Asset costs are first separated into incremental (directly attributable) costs, common (shared) costs and indirect (unattributable) costs. In this instance, the asset costs include capital and operating costs. Operating expenses are classified as a separate ‘asset’ and calculated by a mark-up on the total Core asset costs.
- b) Incremental costs are allocated directly to services on a per asset basis through routing factors and forecast demand.
- c) Common costs are allocated by:
 - summing the relevant common Core costs
 - calculating the percentage each platform contributes to the total incremental cost
 - calculating the percentage each service contributes to each platform’s total incremental cost
 - applying the two percentages to the common cost to obtain the amount of common costs allocated to each service.
- d) Asset costs excluding operating expenses on per asset and per service basis are then calculated from:

Service specific Core asset incremental costs + Service specific common cost

- e) To allocate indirect costs, for each service, the sum of 1(d) costs is divided by the total Core incremental and common costs. The percentages are then applied to total indirect costs to allocate service specific indirect costs.

- f) The costs from 2(d) and 2(e) are then grouped according to asset classes and services. The asset classes (data equipment, mobile network and terminal equipment, and customer equipment) that are not used by the regulated fixed line services were excluded.

Step three – calculation of initial allocation factors

The costs from 1(e) and 2(f) represent cost allocations by asset classes and services. Dividing these costs by the relevant total asset group cost across the services determines the service specific cost allocation factors.

The allocation factors are then aggregated to obtain a format consistent with the RAF. This is achieved by combining certain services' factors into one overarching factor.

Adjustments to 'de-optimize' the Analysys cost allocation factors

The Analysys cost allocation factors have been used as a starting point for determining the cost allocation factors to be applied in the BBM. The Analysys factors were calculated by determining the share of costs appropriately allocated to each of the services provided on an optimised CAN and Core network. In using factors derived from an optimised model, the ACCC has assumed that optimisation has generally not significantly altered the relative *share* of costs, as distinct from the *level* of costs, allocated to specific services.¹³⁰

There are a number of uncertainties associated with this assumption. Potential problems with using the Analysys cost allocation factors would arise if:

- the optimisation undertaken by Analysys changed the relative usage of assets to provide services across the PSTN, for example if the MEA involve significantly different routing factors or other engineering differences
- if the prices of the MEA used in the Analysys model caused the unit costs of providing some services to fall (or increase) relative to other services, rather than reducing all unit costs in the same proportion.

If the optimisation undertaken by Analysys has changed the unit cost relativities across services, the Analysys factors could not be applied to Telstra's actual (unoptimised) network costs without adjustments to 'de-optimize' them. Without adjustments to remove the impact of optimisation, the Analysys factors would be incompatible with the actual cost data used in the BBM.

The ACCC has identified two areas where it considers optimisation has changed the unit cost relativities.

ULLS and WLR: The Analysys model optimised the CAN network by assuming that fibre was used to provide WLR and other services that could be provided across fibre. The model assumed that fibre cannot be used to provide the ULLS and that this would limit the use of fibre in the network. The model does not, however, specify where fibre was assumed to be installed or what percentage of fibre was used in the model. On the basis of the information available to it, and a detailed analysis of the Analysys cost allocation factors, the ACCC reached the conclusion that the amount of fibre assumed in the Analysys model is significantly greater than the actual amount of fibre currently used in the CAN.

130 In an optimised model, the level of costs would be expected to be lower than Telstra's actual costs, which have not been optimised.

Fibre is cheaper than copper to purchase and install. In addition, because fibre takes up less space than copper, less duct space is needed for fibre than for copper cables. By assuming a greater use of fibre to provide WLR and other services (which are mainly Telstra’s retail fixed line services), the optimisation applied in the Analysys model reduces the average unit costs for WLR and other services relative to ULLS. Optimisation will therefore result in lower cost allocation factors for WLR and the other services relative to ULLS in respect of ducts and pipes and copper cables than would be compatible with the actual assets in place.

The ACCC has adjusted the Analysys cost allocation factors for ducts and pipes and copper cables to ensure that the average unit costs for these asset classes are equal for the ULLS, WLR and other services provided using these assets. To achieve equal unit costs for these services, adjusted cost allocation factors have been derived by calculating the shares of services in operation (SIOs) for ULLS, WLR and other services, shown in table A7.1. Since the ACCC does not have direct information on the other services using those assets, the number of SIOs used to provide other services has been calculated as a residual.

Table A7.1 Services in operation (SIOs)—ULLS, WLR and other services as a percentage of total SIOs, 2009-10

	ULLS	WLR	Other	Total
Band 1	0.36%	[c-i-c]		2.61%
Band 2	7.93%			67.33%
Band 3	0.12%			20.12%
Band 4	0.00%		[c-i-c]	9.93%
Total	8.40%	12.78%	78.82%	100.00%

Source: Calculated from information provided by Telstra. The percentage share of other services has been calculated as a residual.

The ACCC recognises that this approach does not take into account the different distribution of ULLS, WLR and other services across the geographic bands.

Table A7.2 shows that ULLS SIOs are concentrated in Band 2, which covers the urban areas of capital cities, metropolitan regions and large provincial centres (including the CBD areas not included in Band 1). There is also a greater share of ULLS SIOs in Band 1, which covers the CBD areas of the major capital cities, compared to WLR and other services. Unit costs in Bands 1 and 2 are lower than the national average because the higher population densities and shorter distances to reach customer premises mean less ducts and pipes and copper cables are needed to provide each service.

Table A7.2 Services in operation (SIOs) by geographic band—ULLS, WLR and other services as a percentage of total SIOs, 2009-10

	ULLS	WLR	Other	Total
Band 1	4.24%	[c-i-c]		2.61%
Band 2	94.33%			67.33%
Band 3	1.41%			20.12%
Band 4	0.01%		[c-i-c]	9.93%
Total	100.00%	100.00%	100.00%	100.00%

Source: Calculated from information provided by Telstra. The percentage share of other services has been calculated as a residual.

In contrast, a larger percentage of WLR and other SIOs (compared to ULLS SIOs) are provided in Band 3, which covers semi-urban areas including outer metropolitan and smaller provincial towns, and has higher unit costs of service provision. The highest unit costs are incurred in Band 4, which covers rural and remote areas where population densities are low and distances are generally large. A much greater share of WLR and other SIOs are Band 4 than ULLS SIOs.

This implies that the average unit costs of ducts and pipes and copper cables may be lower for providing ULLS than for providing WLR and other services. However, the ACCC does not have cost information by band to enable it to take into account any potential difference in unit costs. The expected cost advantage in providing ULLS could be offset, to at least some extent, by the use of lower-cost fibre to provide some WLR and other services (such as Telstra's retail services).

Additional costs are allocated to WLR and other services from the other cables asset class, including fibre cables. No costs from other cables are allocated to ULLS. On balance, the ACCC has concluded that its adjusted cost allocation factors derived by equalising the unit costs of ducts, pipes and copper cables for ULLS, WLR and other services are likely to be reasonable, given that more detailed information on the structure of costs by service is not available. However, should better cost information be made available, the ACCC will review the cost allocation factors for ULLS, WLR and other services.

PSTN OTA: The switching equipment in the Core was built to carry more capacity than the current level of traffic. Total voice traffic using Telstra's switching equipment peaked in 2002-03 and has fallen since then, with a larger decline for PSTN OTA traffic. The fall in traffic reflects two factors: (i) Telstra's loss of market share to competing carriers that have invested in their own switching equipment and (ii) a reduction in total fixed line voice traffic as a result of a switch by end-users to alternative technologies such as mobiles.

The ACCC considers the switching equipment has been over-provisioned for current voice traffic levels. Since there cannot be any over-provisioning in the optimised Analysys model, the Analysys cost allocation factors would have been determined in respect of a smaller, cheaper amount of switching equipment than the equipment actually in place.

The ACCC has adjusted the Analysys cost allocation factors for the three classes of switching equipment (local, trunk and other) to ensure that unit costs per minute are not inflated by the loss of traffic on the switching equipment. Telstra's investment in switching capacity was a commercial decision based on past voice traffic and Telstra's forecasts of future demand. It received compensation for the risk of a fall in demand through its commercial rate of return on assets. The ACCC considers that Telstra should not be permitted to spread the costs of its switching equipment over its remaining customers, particularly since the switching equipment is, to a large extent, a natural monopoly.¹³¹

For local switching equipment, the adjustment involves using the total peak voice traffic volume in 2002-03 as the denominator each year and the forecast demand for PSTN OTA as the numerator to calculate a revised cost allocation factor.

131 Access seekers, whose customers (end-users) call a number on the Telstra network, cannot avoid pay terminating access charges to Telstra for the use of its network.

For trunk and other switching equipment, the adjustment process ensures that the routing factors built into the Analysys cost allocation factors are retained. On average, PSTN OTA traffic uses a greater share of trunk and other switching equipment than local calls, such as those provided through the LCS. Many local calls can be routed to their destination using only local switching equipment. In contrast, PSTN OTA calls always use some trunk switching equipment, and some also use other switching equipment, in being routed to their destination.

To retain the routing factors in the Analysys cost allocation factors, the ACCC has maintained the relativity between the Analysys factors for trunk and other switching equipment and the factor for local switching equipment in applying the over-provisioning adjustment to the trunk and other switching equipment cost allocation factors for PSTN OTA services.

The ACCC considered whether an adjustment was needed to the cost allocation factors for LCS. Given that the share of switching equipment allocated to LCS in the Analysys model is relatively low, the ACCC considered that any adjustment to the factors for LCS would be minor and it concluded that no adjustment would be made. Submissions are sought on the appropriateness of this conclusion.

Adjustment of the Analysys cost allocation factors for changed pattern of demand

The Analysys model was developed in 2007-08 based on the demand patterns prevailing at the time. It was updated in 2009 to reflect forecast demand for 2008-09 but, to the ACCC's knowledge, the forecasts were made in 2007-08 and were not revised in 2009.

The cost allocation factors in the model do not therefore take into account the exponential growth that has occurred in data traffic in recent years. Data traffic has more than doubled each year for the past three years. The Analysys model's demand forecast significantly underestimated the growth in data traffic. At the same time, voice traffic has been declining.

The ACCC considers this change in the pattern of demand will have a significant impact on the appropriate cost allocation factors for transmission equipment. It considers that the adjustment to the PSTN OTA cost allocation for switching equipment, described above, is likely to adequately address the impact on switching equipment. The impact on the cost allocation factors for other Core asset classes is not expected to be significant although the ACCC seeks submissions on this issue.

To cater for the significant increase in data traffic over recent years, the ACCC is aware that Telstra has invested in expanding the capacity of its transmission equipment and this is confirmed by Telstra's annual reports on capital expenditure on transmission assets. While the ACCC does not have specific information on the amount of investment in the Analysys model's transmission equipment asset class, it considers that the capacity of the transmission equipment now in place, and the value of that equipment, is likely to be significantly greater than the magnitude and value of the equipment assumed in the Analysys model.

Since voice traffic has declined over recent years, applying the Analysys cost allocations for PSTN OTA to the existing value of Telstra's actual transmission equipment would substantially over-allocate costs to PSTN OTA services. It would effectively allocate to PSTN OTA much of the recent investment in transmission

equipment required to cater for higher data traffic. The ACCC considers it is appropriate that the costs of expanded transmission capacity are recovered from data services rather than PSTN OTA services.

The ACCC has therefore adjusted the Analysys cost allocation factors to reflect current usage patterns using information from Telstra's RAF data. Between 2007–08 and 2008–09, the share of PSTN OTA (voice) traffic in total traffic using the transmission equipment fell from [c-i-c] per cent to [c-i-c] per cent [c-i-c] while the share of data and ISDN traffic increased from [c-i-c] per cent to [c-i-c] per cent [c-i-c].¹³² To reflect the increase in data traffic during 2008–09, the Analysys cost allocation factor for transmission equipment in respect of PSTN OTA services has been reduced from [c-i-c] per cent to [c-i-c] per cent [c-i-c].

In making this adjustment, the ACCC has retained the relativity between the cost allocation factors for PSTN OTA services and data services. Data services use the transmission equipment more intensively than voice traffic.

Updating the cost allocation factors

Relative demand for different services is expected to change over time. As a result, usage of CAN and Core assets to provide specific services will also change. To ensure that the cost allocation factors continue to reflect services' actual usage of infrastructure, the cost allocation factors should be varied to reflect changes in the pattern of demand.

Over the estimation period, the ACCC has further adjusted its initial cost allocation factors, based on the Analysys factors with the adjustments described above, to reflect the latest demand figures and forecast changes in demand over the estimation period.

To adjust the cost allocation factors for PSTN OTA applying to transmission equipment for 2009–10 to 2013–14, PSTN OTA minutes as a share of total traffic was calculated from forecasts of total PSTN call minutes and total data traffic. The ACCC has assumed that the forecast percentage declines in PSTN call minutes will be offset by similar increases in demand for total packet switched data during this period. On the basis of actual increases in reported data traffic, this assumption is considered to be very conservative. Using higher forecasts for growth in data traffic would reduce the cost allocation factors for transmission equipment for PSTN OTA (and could reduce the prices estimated by the model).

The adjusted allocation factors have been used to derive the share of the aggregate revenue requirement assigned to each asset class and service in the Ovum BBM.

The demand forecasts applied by the ACCC do not take into account possible large changes in demand for fixed line services associated with the migration of customers from the copper network to the proposed national broadband network. The ACCC does not have sufficient information at this stage to incorporate any such demand changes into its forecasts. Should better information become available about the magnitude and timing of any substantial migrations during the estimation period, the ACCC may need to adjust the cost allocation factors used in the Ovum BBM.

Table A7.3 below shows the cost allocation factors used to calculate draft indicative prices.

132 To compare voice and data traffic, PSTN OTA call minutes were converted to Mbps, assuming 1 voice call minute equals 64 kbps.

Table A7.3 Cost allocation factors for specific fixed line services

	ULLS					WLR				
	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
CAN										
Ducts and pipes	0.08	0.09	0.10	0.10	0.10	0.13	0.12	0.12	0.12	0.12
Copper cables	0.08	0.09	0.10	0.10	0.10	0.13	0.12	0.12	0.12	0.12
Other cables	-	-	-	-	-	0.12	0.12	0.12	0.12	0.11
Pair gain systems	-	-	-	-	-	0.12	0.12	0.12	0.11	0.11
Radio CAN	-	-	-	-	-	-	-	-	-	-
Other assets	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
Core										
Switching Equipment - Local						0.02	0.02	0.02	0.02	0.02
	PSTN OTA					LCS				
	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Core										
Switching Equipment - Local	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.06	0.05	0.05
Switching Equipment - Trunk	0.23	0.21	0.19	0.17	0.16	0.05	0.05	0.04	0.04	0.04
Switching Equipment - Other	0.22	0.20	0.19	0.17	0.16	0.07	0.07	0.06	0.06	0.05
Inter-exchange Cables	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.01
Transmission Equipment	0.09	0.07	0.06	0.06	0.05	0.04	0.04	0.04	0.03	0.03
Radio Bearer Equipment	0.05	0.04	0.04	0.04	0.03	0.02	0.02	0.02	0.02	0.01
Satellite Equipment	0.05	0.04	0.04	0.04	0.03	0.02	0.02	0.02	0.02	0.01
International Network Cables	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01

A8 Forecasting demand

The BBM requires demand forecasts for each of the access provider's regulated fixed line services in order to calculate unit prices for each service. The share of the revenue requirement allocated to each service is divided by forecast demand for that service to determine the average price for that service.

As noted in section 7.2 of this report, the ACCC intends to obtain demand forecasts from Telstra in future. In the absence of these forecasts, and for the purpose of estimating draft indicative prices, the ACCC has developed its own forecasts, taking into account recent trends in demand for each service and the demand forecasts in the Analysys Cost Model. The Analysys model forecasts were calculated in 2007 and used a range of data sources, including the CAN RKR, the RAF and Telstra's annual reports. The ACCC has taken into account the latest actual demand data available for each service.

Table A8.1 below sets out the demand forecasts that the ACCC has used to estimate draft indicative prices for each of the fixed line services.

Table A8.1 Demand – estimated (2009-10) and forecast (2010-11 to 2013-14)

Services	2009-10	2010-11	2011-12	2012-13	2013-14
Unconditioned Local Loop Service (lines)	827,333	910,066	955,570	979,459	989,253
Growth rate		10.00%	5.00%	2.50%	1.00%
Wholesale Line Rental (lines)	1,252,784	1,215,200	1,196,972	1,182,011	1,170,191
Growth rate		-3.00%	-1.50%	-1.25%	-1.00%
PSTN Originating & Terminating Access (million minutes)	[c-i-c]				[c-i-c]
Growth rate		-10.00%	-8.00%	-8.00%	-8.00%
Local Call Service (million minutes)	5,600	5,040	4,637	4,266	3,925
Growth rate		-10.00%	-8.00%	-8.00%	-8.00%

The ACCC seeks feedback on whether the assumptions and data sources it has used to obtain demand forecasts are reasonable and appropriate. Further details on the assumptions and data used are provided below.

ULLS

Telstra provides the ACCC with usage data on the ULLS under the CAN RKR. The total number of ULLS lines according to Telstra's December 2009 CAN RKR report was 765,508. A comparison of Analysys figures with actual demand between 2007 and 2010 showed that ULLS growth was much higher than Analysys had predicted. In developing its forecasts for ULLS demand, the ACCC has taken into account actual growth rates to March 2010.

The ACCC does not expect the substantial growth of ULLS demand to date to continue, particularly given the current uncertainty around future industry developments and possible legislative change. The ACCC has taken this uncertainty into account in forecasting slower growth rates for ULLS during the estimation period.

WLR

Telstra published usage data on the WLR as at June 2010 in its 2009-10 annual report, where it was categorised as 'domestic wholesale' fixed line services in operation. A comparison of Analysys figures with actual data showed that the decline of WLR usage had been underestimated by the Analysys model.

One of the factors driving the rapid increase in ULLS and decrease in WLR usage has been the rate of substitution between the two services. The ACCC expects that the conversion of WLR lines to ULLS lines is likely to slow over the estimation period as Telstra's wholesale customers will be less likely to invest in their own infrastructure given the current uncertainty around future industry developments and possible legislative change. Consequently, the ACCC expects the rate of decline in WLR lines to slow over the next four years.

However, as some increases in ULLS demand can be met by the availability of unused slots on DSLAMs, it is likely that the increase in ULLS over the period will be proportionately larger than the fall in WLR services. The ACCC has taken these factors into account to determine annual rates of decline for WLR lines over the next four years.

PSTN OTA

Data provided to the ACCC by Telstra as part of the RAF shows that PSTN OTA usage has declined faster than predicted by Analysys. The demand for PSTN OA is expected to reflect the rate of substitution from fixed to mobile voice services.

The ACCC has assumed that recent trends in PSTN OTA demand will stabilise over the period and has forecast a 10 per cent decline in 2010-11 followed by a constant decline of 8 per cent per annum for the remainder of the period. These rates have been applied to actual data from June 2009 to determine forecast PSTN OTA demand over the next four years.

LCS

The ACCC does not have access to recent actual usage data for the LCS. The ACCC has therefore estimated total LCS demand for 2009-10 by summing the local calls listed in the RAF data of service providers using Telstra's network, augmented by an estimated allowance for calls carried by carriers not required to submit RAF data. The ACCC considers that fixed to mobile substitution will be the key driver of decline in LCS demand, and has applied the same annual rates of decline to those used to forecast PSTN OTA demand.

The Ovum BBM requires average call duration forecasts for the LCS. These forecasts are used in conjunction with the forecasts for total demand (measured in minutes) to calculate the service price per call. The ACCC has assumed an average call duration of four minutes throughout the price estimation period, based on standard engineering practice.¹³³ This is consistent with the assumption used to determine previous LCS prices per call.

Table A8.2 Forecast average call duration for LCS (minutes)

Services	2009-10	2010-11	2011-12	2012-13	2013-14
Average call duration	4.0	4.0	4.0	4.0	4.0

133 Horak, R. 2007, *Telecommunications and Data Communications Handbook*, Wiley-Interscience, p. 119.

A9 Estimating LSS prices

Since 2002 the pricing principle applicable to LSS has been that the LSS price should be set to recover the incremental specific cost of providing the LSS. This is essentially the capital expenditure and operating and maintenance costs of IT systems for ordering and provisioning LSS, and operating costs associated with LSS product management and front of house operations. The resulting LSS price is not, strictly speaking, an access charge since it relates primarily to the cost of the operational support systems required to provide the service, rather than for the usage of the PSTN.

The current approach to determining LSS prices combines LSS specific costs with ULLS specific costs and Telstra's internal equivalent costs for ADSL over an appropriate cost-recovery period, amortises the total cost for the period, and allocates this equal annual cost in proportion to the number of active ULLS, LSS and ADSL lines.¹³⁴

The establishment of the LSS price under this framework has required the development of a separate pricing model containing capital and operating expenses associated with specific operational support systems required to provide the LSS, ULLS and ADSL equivalent services.

The specific costs that are shared between LSS, ULLS and ADSL-equivalent are:

- Business Support System (BSS) development and operational costs
- front of house staff
- wholesale product management costs
- indirect costs.

Operating expenditure for LSS is classified according to whether it is a direct or indirect cost. The direct costs are additional labour for front of house service operations, operating expenditure related to the support system automation projects and wholesale product management. The indirect costs include loading on front of house service operations and loading on wholesale product management.

The ACCC's view has been that the ULLS, LSS and Telstra's internal equivalent use of the copper line should make an equal unit contribution to the recovery of the specific costs incurred in respect of these services. This approach ensures that Telstra and ULLS/LSS access seekers each face the same unit costs for what are essentially common production processes that Telstra undertakes.

The ACCC has used this recovery base in setting an LSS monthly charge of \$2.50 in several final determinations in respect to LSS access disputes. The approach was subsequently endorsed by the Tribunal.¹³⁵

LSS has not been included as a service category in the BBM. LSS is excluded from the BBM because, as already indicated, the price for LSS is determined by reference to the costs associated with the specific operational support systems in place to facilitate LSS provision rather than the costs associated with access to the PSTN network.

134 The term 'specific costs' refers to the incremental cost of providing the service, and includes the costs associated with ordering, provisioning and qualifying a line sharing service. A similar specific cost charge applies to the ULLS, in addition to the monthly access charge.

135 See *Telstra Corporation Ltd (CAN 051 775 556)* [2006] ACompT 4.

As a consequence of the LSS being priced by reference to separate LSS-specific costs, cost allocation factors cannot be directly applied to LSS within the BBM using common costs spread between existing BBM services. LSS has its own specific costs in relation to facilitating service provision and there are no other capital and operating costs which would be allocated to the service under the approach adopted in the BBM.

In the absence of any further information on future capital and operating expenditure for the operational support systems required to provide the LSS, the ACCC's current view is that the LSS indicative price should be determined outside the BBM framework through the continuing use of the separate specific cost model and should remain at \$2.50 per month.

A10 Draft indicative prices for fixed line services

This section discusses the draft indicative prices estimated by the Ovum BBM using the assumptions discussed in sections A3-A9 for ULLS, WLR, PSTN OTA and LCS. Draft indicative LSS prices were estimated by applying the methodology and assumptions outlined in section A9.

The Ovum BBM estimates real prices which have been converted to nominal terms by applying the inflation forecasts set out in section A3.3.1.

The prices for all services have been smoothed by taking a simple average of the prices estimated by the model over the four year estimation period. Without smoothing, the prices for ULLS and WLR would increase slightly (by less than \$2) over the four years while the PSTN OTA and LCS prices would fall slightly. The ACCC considers that smoothing prices to obtain a single draft indicative price for each service over the regulatory period provides certainty and stability. Submissions are sought on the appropriateness of this approach.

The ACCC has also rounded the averaged prices estimated by the model in recognition of the lack of precision in the inputs to the model, specifically forecast operating and capital expenditures and demand. In doing so, the ACCC has taken a conservative approach by generally rounding up the prices estimated by the model.

The ACCC intends to apply the draft prices from 1 January 2011 until the end of 2014. While the regulatory period does not correspond precisely with the financial year basis of the model, the ACCC considers that any impact on prices will be insignificant given that prices have been averaged and rounded. The ACCC will consider any submissions it receives on this approach.

ULLS price estimates

ULLS prices are currently determined on a geographically disaggregated basis, with different prices for exchange service areas in four geographical bands. The bands are delineated on the basis of teledensity,¹³⁶ which is related to the cost of providing services:

- Band 1 covers the CBD areas of the major capital cities.
- Band 2 covers the urban areas of capital cities, metropolitan regions and large provincial centres (including CBD areas not included in band 1).
- Band 3 covers semi-urban areas including outer metropolitan and smaller provincial towns.
- Band 4 covers rural and remote areas.

The Ovum BBM estimates an average ULLS price by estimating the total revenue requirement for ULL services and dividing the revenue requirement by expected demand to obtain an average unit price.

To calculate draft indicative band prices, the ACCC has de-averaged the estimated average ULLS price for each year by applying the existing relativities between prices across Bands 1-3. The existing price relativities were derived from Telstra's Pie II model which estimates disaggregated network costs and volumes into the four

¹³⁶ Teledensity is a measure of the density of demand for services.

geographical bands. For Band 4, a working assumption of \$100 has been used for the price based on information provided by Telstra. The current four band structure based on the PIE II model has been applied by the ACCC since 2003. To set geographically disaggregated cost-based prices that do not employ the current indicative price relativities, disaggregated cost and asset information would be needed for each band. This information is not currently available.

On the basis of these assumptions and an initial RAB of \$7.5b, ULLS prices in the four bands are estimated to fall slightly, or remain the same as, the current indicative prices as shown in the Table A10.1.

Table A10.1 Current indicative ULLS prices and estimated geographically de-averaged prices

	Current indicative prices	Estimated prices 2011–14
SIO-weighted national average	\$28.50	\$28.42
ULLS (per line)*		
▪ Band 1	\$6.60	\$6.50
▪ Band 2	\$16.00	\$16.00
▪ Band 3	\$31.30	\$31.00
▪ Band 4	\$100.00 (assumed)	\$100.00 (notional)

Note: * The national average ULLS price is a notional price because it has been calculated by applying weights derived from the distribution of SIOs across the bands, that is, by assuming that all SIOs are ULLS lines. In contrast, in calculating band prices, costs have been allocated to bands in proportion to current ULLS demand in each band. Currently, 94 per cent of ULLS services are in Band 2.

The ULLS prices estimated by the model have been smoothed over the four year estimation period to provide for uniform prices to give price certainty and stability.

WLR price estimates

As noted in section 9 of this report, the WLR price has calculated on a nationally averaged basis. The current indicative price was calculated using the RMRC approach. This method deducts from the current retail price the costs involved in providing retail services (that are not provided to access seekers for the wholesale service). It includes the cross-subsidies included in the nationally averaged retail price as well as any monopoly profits that Telstra has built into the retail price.

For several years, the ACCC has signalled to industry its intention to move away from RMRC based pricing for services such as WLR and LCS in favour of a robust cost-based pricing approach.¹³⁷ The ACCC first raised the possibility of moving away from RMRC to a cost-based approach in 2003 when it suggested that it could utilise a TSLRIC based price to determine the LCS price. Subsequently, in the 2006 Local Services final decision, the ACCC stated that “once it has constructed a robust cost model in all geographic regions, it should seek to implement a cost-based pricing approach”.¹³⁸ The RMRC approach was adopted by the ACCC in the absence of such

137 ACCC, *Final determination for model price terms and conditions of the PSTN, ULLS and LCS services*, October 2003; ACCC, *Local services review – Final decision*, July 2006; ACCC, *Pricing principles and indicative prices – LCS, WLR and PSTN OTA services – Final determination and explanatory statement*, November 2006; ACCC, *LCS and WLR – Final pricing principles and indicative prices for 2008-2009*, August 2008; ACCC, *Pricing principles and indicative prices – 1 August 2009 – 31 December 2010*, December 2009.

138 ACCC, *Local services review – Final decision*, July 2006, p. 75.

a model. In its 2008 and 2009 decisions on indicative prices, the ACCC reiterated that the interim RMRC pricing principle would be maintained until a robust cost model capable of producing reliable price estimates was available. The ACCC stated that as soon as it had such a model it would seek to implement a cost-based pricing approach for both WLR and LCS.¹³⁹

Estimated WLR prices have been derived using a building block approach, which calculates prices from the estimated efficient costs of providing the service. No monopoly profits are included in these prices. The estimated WLR price of \$20.00 is therefore significantly lower than the current indicative price of \$25.57 for residential users and \$26.93 for business users.

The current indicative prices are differentiated according to end-user, with a lower price for residential users. Since the costs of providing WLR services do not vary by type of end-user, the ACCC considers that the wholesale (access) price should not continue to be differentiated.

The estimated WLR price of \$20.00 is \$4.00 higher than the estimated Band 2 ULLS price. The costs of providing WLR services exceed the costs of providing ULLS because additional Telstra equipment (associated with switching, billing and ordering services) is used to provide WLR services, compared to the ULLS.

The WLR prices estimated by the model have been smoothed over the four year estimation period to provide for a uniform price to give price certainty and stability.

LCS price estimates

The ACCC has estimated a draft indicative price of 7.0 cents for LCS for 2011 to 2014. The LCS prices estimated by the model have been smoothed over the four year estimation period to provide for a uniform price to give price certainty and stability. If they were not smoothed, prices would fall by about 2 cents (from around 8 cents to 6 cents) over the four year period.

The draft indicative price is significantly lower than the current indicative price of 17.36 cents per call. This price fall reflects the exclusion of monopoly profits in moving from a RMRC pricing method to a building block approach. The current indicative LCS price was calculated using the RMRC approach, which deducts from the current retail price the costs involved in providing retail services (that are not provided to access seekers for the wholesale service). It includes monopoly profits built into the retail price and therefore exceeded the costs of providing LCS services. In contrast, the Ovum BBM calculates prices from the estimated efficient costs of providing the service and excludes monopoly profits.

As noted above in relation to WLR, the ACCC has, since 2003, signalled to industry its intention to move away from RMRC based pricing for LCS.

PSTN OTA price estimates

The estimated PSTN OTA price of 1.1 cent is slightly higher than the current headline indicative price. This price is an average of the prices estimated by the model over the four year price estimation period, which fall from 1.2 cents to 1 cent. Since the current

139 ACCC, *LCS and WLR – Final pricing principles and indicative prices for 2008-2009*, August 2008; ACCC, *Pricing principles and indicative prices – 1 August 2009 – 31 December 2010*, December 2009.

headline rate is 1 cent, the ACCC sees benefit from price stability in setting a uniform price for the period, rather than setting a higher price and then reducing it.

The current headline price is based on traffic profiles and call holding times that were established in 2003. More recent information, including information provided by Optus as part of the Telstra/Optus PSTN OTA arbitration in 2006, indicates that it is possible that there have been changes in the call holding times and traffic profiles that form the basis of the disaggregated rates table from which PSTN OTA charges are derived.

Table A10.2 shows the current structure of indicative prices for PSTN OTA by geographic area. The headline rate is the weighted average of the flagfall, End Minutes of Use (EMOU) charge and average length of a call, which is assumed to be 4 minutes (as explained in section A8). The ‘average’ row represents a weighted average of the geographically de-averaged charges.

Table A10.2 PSTN OTA prices

	Current price (2010) in cents			Proposed price (2011–14)		
	Flagfall	EMOU charge	Headline rate	Flagfall	EMOU charge	Headline rate
CBD	0.8	0.35	0.57	0.94	0.39	0.63
Metropolitan	0.84	0.49	0.70	0.92	0.54	0.77
Provincial	0.94	0.68	0.91	1.03	0.75	1.00
Rural	2.06	3.66	4.18	2.27	4.03	4.60
Average	0.95	0.76	1.00	1.05	0.84	1.10

Note: * EMOU charge – end minutes of use charge (i.e., the per minute charge).

The ACCC seeks submissions on the disaggregated rates consistent with the headline rate of 1.1 cents. Information on current call holding times, traffic profiles and appropriate weights should be provided to explain the method used to calculate disaggregated rates.

Submissions are also sought on whether prices for PSTN originating access services should be the same as those for PSTN terminating access services, noting that the assets used to provide these services are identical. In the absence of industry views to the contrary, the ACCC’s preliminary view is that these prices should remain the same.

LSS prices

As noted in section A9, the LSS price is determined outside the BBM framework through a separate specific cost model. In the absence of any further information in respect to future capital and operating expenditure on the operational support systems required to provide the LSS, estimated prices remain at \$2.50 per month.

A11 Draft indicative connection and disconnection charges

This section discusses the draft indicative connection and disconnection charges the ACCC proposes to apply to the ULLS and LSS for the next regulatory period. These charges relate to the costs of technicians performing jumpering work inside Telstra exchanges, travel and vehicle costs for the technicians, costs of back-of-house management or assistance for technicians, material costs and indirect costs.

The ACCC has previously identified the costs it considers to be efficient for the various components of connection and disconnection charges. In 2008, the ACCC made a pricing principles determination relating to the ULLS. This determination included a detailed review of the appropriate indicative connection and disconnection charges to be applied to the service.¹⁴⁰ A similar analysis was conducted in relation to the LSS in 2007.¹⁴¹ In December 2009, the ACCC decided to maintain the indicative connection and disconnection charges it had established through these regulatory processes until their expiry on 31 December 2010.

In setting connection and disconnection charges in final determinations for ULLS and LSS access disputes, the ACCC has recognised that labour costs and contractor charges are likely to change over time. Accordingly, the ACCC has set different prices for different financial years, reflecting average rates of change in labour rates. The ACCC considers that it is appropriate to employ this approach to calculate indicative charges to apply from 1 January 2011.

The ACCC has previously applied a percentage change in labour rates derived from data published by the ABS to update the indicative connection and disconnection charges. The ABS's Labour Price Index has been considered the most appropriate measure of Australian labour costs.¹⁴² The ACCC has applied the rate of change measured in the Labour Price Index sub-classification 'ordinary time rates of pay excluding bonuses for the private sector communications services industry'.

To calculate the draft indicative connection and disconnection charges, the ACCC has had regard to historical wage growth in the communications sector, actual inflation figures and the Reserve Bank of Australia's (RBA) inflation forecasts. Between 2003 and 2009, the actual inflation rate as measured by the CPI approximated wage growth in the communications sector. Further, the RBA's past inflation forecasts have been a good predictor of the actual inflation rate over recent years.

Therefore, the ACCC has used actual CPI figures up to the June quarter 2010, the RBA's inflation forecasts and the mid-point of the RBA's inflation target to index connection and disconnection charges from 1 January 2010 (when the ACCC set the current charges).

Below are the current indicative prices for 2010 and the draft indicative charges that the ACCC is proposing to set for 2011-2014.

140 ACCC, *Unconditioned Local Loop Service – Pricing Principles and Indicative Prices*, June 2008, pp. 23-45.

141 ACCC, *Review of the Line Sharing Service Declaration – Final Decision*, October 2007, pp. 99-109.

142 See Australian Bureau of Statistics, *6345.0 Labour Price Index, Australia* at: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0/>.

LSS single connections

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012-Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per connection	\$43.10	\$44.39	\$45.50	\$46.64	\$47.81

LSS single disconnections (where payable)

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per disconnection	\$38.70	\$39.86	\$40.86	\$41.88	\$42.93

Note: These charges are not payable for:

- A disconnection made pursuant to a Telstra churn process by which services can be transferred between LSS, and between LSS and DSL services, or
- Any period in which the access seeker was participating in the Telstra LSS churn process and Telstra (Bigpond) was not participating in the Telstra LSS churn process.

LSS Managed Network Migration (MNM) connection charges – where the service is to be connected on a line Telstra is using to supply a wholesale ADSL service

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012-Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Fixed amount (per MNM)	\$140.10	\$144.30	\$147.91	\$151.61	\$155.40
Variable amount (per connection)	\$32.20	\$33.17	\$34.00	\$34.85	\$35.72

LSS MNM minimum exchange charge

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per exchange	\$784.10	\$807.62	\$827.81	\$848.51	\$869.72

ULLS single connection charges – in use ULLS and transfer ULLS connections

Band	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
1	\$50.40	\$51.91	\$53.21	\$54.54	\$55.90
2	\$53.10	\$54.69	\$56.06	\$57.46	\$58.90
3	\$57.70	\$59.43	\$60.92	\$62.44	\$64.00

Charges for ULLS Managed Network Migration – involving the transfer of end user data services from a Telstra wholesale PSTN and/or ADSL service, or from a line that Telstra is using to supply a ULLS to another access seeker ('MNM')

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Fixed amount (per MNM)	\$140.10	\$144.30	\$147.91	\$151.61	\$155.40
Variable amount (per connection)	\$25.00	\$25.75	\$26.39	\$27.05	\$27.73

ULLS MNM minimum exchange charge

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per exchange	\$638.00	\$657.14	\$673.57	\$690.41	\$707.67

ULLS call diversion charge

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Fixed amount (per ULLS call diversion)	\$9.30	\$9.58	\$9.82	\$10.06	\$10.32
Variable amount (pro rata per month)	\$12.50	\$12.88	\$13.20	\$13.53	\$13.86

ULLS cancellation charges

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per service where pre-jumping has occurred	\$20.00	\$20.60	\$21.21	\$21.85	\$22.51
Where entire MNM is cancelled	\$138.00	\$142.14	\$145.69	\$149.34	\$153.07

Appendix B: Summary of submissions

This appendix summarises the submissions received by the ACCC in response to the Discussion Paper.

Choice of assets and asset lives

In determining the remaining asset lives of assets included in the RAB, the CCC submitted that the ACCC should have regard to economic lives of these assets, using estimates contained in the Analysys model.¹⁴³ The CCC also noted that the roll-out of the NBN may make some assets redundant, and this deserves careful consideration in determining asset lives.

Telstra submitted that if the asset's life is understated, it will receive payments with a present value above the cost of the investment and access seekers will face prices that are too high.¹⁴⁴ Similarly, if the expected asset life is overstated, Telstra submitted that investors will not be able to cover their investment costs and access prices will be too low. Telstra submitted that all assets included in the supply of relevant services should be included in the RAB.¹⁴⁵

Macquarie believed that Telstra's network was becoming technologically and operationally obsolete, and that short asset lives for the fixed network assets should be adopted.¹⁴⁶ However, it recognised that given the uncertainty surrounding NBN and whether or not Telstra will continue to operate its fixed network, the current book asset lives should remain unchanged. Macquarie submitted that decisions about asset lives should be made when there is greater certainty about NBN.

Optus submitted that in general, the asset life of each network element should be equal to its remaining useful life. That is, before it wears out and requires replacement.¹⁴⁷ Optus noted that the asset lives for copper and ducts used in the Analysys model were too short compared to those used in other jurisdictions. Further, Optus noted that the impact of NBN should also be taken into account in deciding asset lives — for example if all customers are migrated to the NBN, Optus submitted that Telstra would no longer be able to recover its network costs through wholesale access charges. Optus submitted that the ACCC should decide on this issue if and when a deal between Telstra and NBN is finalised. Optus also submitted that it is important to guard against underestimating the remaining life.¹⁴⁸

143 Frontier Economics, *Access pricing principles for fixed line services, A response to the ACCC's discussion paper prepared for the CCC*, February 2010 (CCC Submission), p. xii.

144 Telstra, *Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services, Telstra's Response to the ACCC's Discussion Paper*, 26 February 2010 (Telstra submission), p. 5.

145 Telstra submission, p. 34.

146 Macquarie, *Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services*, 26 February 2010 (Macquarie submission), p. 5.

147 Optus, *Optus Submission to Australian Competition and Consumer Commission in response to discussion paper Telecommunications Access Pricing Principles for Fixed Line Services*, February 2010 (Optus submission), p. 31.

148 *ibid.*

Level of past recovery

VHA submitted that costs which have been partly (or fully) recovered by Telstra since they were incurred should not be included in the opening RAB value.¹⁴⁹ It was VHA's view that depreciation could be readily observed by examining the revenues the access provider has actually received from services on its assets.

Telstra was of the view that historical payments and prices were not relevant to setting a forward looking price.¹⁵⁰ Telstra was of the view that the initial asset base should be valued on the basis of the remaining annuity payments that are due (based on the tilted annuity approach) as any new methodology which does not take into account previously unrecovered capital costs would potentially ignore the legitimate commercial interests of the access provider.¹⁵¹

Optus recognised that past recovery of capital investment (depreciation) needs to be taken into account in setting an opening RAB value.¹⁵² Optus submitted that an opening RAB set above Telstra's residual costs would result in end-users paying a second time for the depreciation portion of the assets, resulting in a windfall gain to the access provider.

Macquarie submitted that past compensation to Telstra should be consistent with the asset valuation methodology used in setting an opening RAB.¹⁵³ The asset valuation methodology favoured by Macquarie was depreciated historic cost (DHC). As such, it recommended that past depreciation should be deducted from the gross value of each regulated asset.

The CCC submission favoured an adjustment to the depreciated value of the asset base by the actual levels of cost recovery, to prevent potential cost over- or under-recovery.¹⁵⁴

Single versus multiple RABs

All submissions favoured the adoption of a single RAB in determining prices for individual services.

The CCC and Optus submitted that geographic de-averaging should also be considered. Where there are significant intra-service cost variations (e.g. by geography), the CCC requested these differences to be reflected in prices, to ensure that the prices promote competition, encourage efficient consumption and efficient investment by access seekers.¹⁵⁵ Optus supported geographically de-averaged pricing and recommends the use of separate RABs for different regions.¹⁵⁶

Telstra recommended the use of a single RAB, as it would be administratively easier to implement and minimise the risk of pricing inconsistencies.¹⁵⁷ Where geographic de-averaging is favoured, Telstra supported the allocation of annual costs into

149 VHA, *Review of pricing principles for fixed line services, Submission to the Australian Competition and Consumer Commission*, February 2010 (VHA submission), p. 12.

150 Telstra submission, p. 34-35.

151 *ibid.*, p. 23 and p. 35.

152 Optus submission, p. 12.

153 Macquarie submission, p. 4.

154 CCC submission, p. xi.

155 *ibid.*, p. xii.

156 Optus submission, p. 46-47.

157 Telstra submission, p. 34.

different geographic areas, to have regard to the different geographic cost structures.¹⁵⁸

Macquarie submitted that there was no need to create separate RABs because the fixed line services have common infrastructure costs, hence when the common costs are allocated to each service, sub-RABs would be effectively created.¹⁵⁹ The sub-RABs would determine prices for specific services, and determine prices for specific services in different regions. Macquarie suggested that the ACCC should be responsible for determining the allocation of asset values for each of the fixed line services.

VHA also supported the adoption of a single RAB. However, it favoured the use of Ramsey Pricing to assign common costs between services.¹⁶⁰

Choice of valuation methodology

All submissions recommended the use of a DAC/DHC approach in determining an opening RAB value, except that of Telstra, which favoured the use of a DORC methodology.

VHA considered DHC to be appropriate in setting the initial RAB value, as it is drawn from actual costs, and prevents over-recovery of costs incurred from existing assets.¹⁶¹ In setting the initial RAB value, VHA argued that the ACCC should have regard to recovery of past costs that Telstra has received. Depreciation may then be determined from the revenues the access provider has received from services.

TransACT and the CCC favoured a DHC approach to setting the initial RAB value. These submissions suggested that the initial RAB value should be determined using historic costs from Telstra's regulatory accounts, minus past compensation that Telstra has received against those assets to date.¹⁶² If this approach is too difficult, TransACT supported the use of depreciated asset values from Telstra's accounts in setting the initial RAB value.

Optus favoured a DAC methodology in determining an opening RAB value, because according to Optus this approach takes account of past compensation received by Telstra and hence is likely to be consistent with the legislative criteria.¹⁶³ According to Optus, a DORC valuation methodology may be more complex, is subject to a greater degree of uncertainty in estimating parameter values, is prone to modelling error and requires access to information that is held by an interested party. In contrast, a DAC approach is more simple and transparent (historic costs can be readily identified).

Macquarie argued that sunk assets should not be attributed a value, because they are not recoverable and therefore has no opportunity cost.¹⁶⁴ As such, Macquarie believed that sunk assets should not be included in the cost base that the access provider seeks to recover.

158 *ibid.*, p. 38.

159 Macquarie submission, p. 3.

160 VHA submission, p. 12.

161 *ibid.*

162 TransACT, *Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services-Discussion Paper December 2009*, 26 February 2010 (TransACT submission), p. 4.

163 Optus submission, p. 18-19.

164 Macquarie submission, p. 4.

Telstra favoured using DORC to setting an initial RAB value. It submitted that the initial RAB should be valued on the basis of remaining annuity payments due after application of the TSLRIC+ tilted annuity. Telstra submitted that a change in valuation approach from ORC to one based on historic costs would result in a windfall loss or gain, the indexation of present costs of assets would be inaccurate and subjective, the bundle of assets included in the RAB could not be efficiently replaced today, and there are complexities in addressing accounting decisions/costs in that were made in the past.¹⁶⁵

Depreciation method

Macquarie submitted that costs should be recovered in equal amounts over each regulatory period and that an annuity approach to depreciation should be used with the outcome that depreciation is back loaded and prices are reasonably constant.¹⁶⁶ Similarly, Optus submitted that a flat path for access pricing would generally be appropriate in order to facilitate certainty.¹⁶⁷ Optus submitted that the profile of cost recovery should in general be subordinate to the choice of appropriate price path.¹⁶⁸

VHA supported a depreciation profile that will result in a smooth path of prices so that access seekers could have greater investment certainty.¹⁶⁹ The CCC submitted that an approach which smooths price paths is a desirable way to set annual depreciation.¹⁷⁰

Telstra submitted that the depreciation method should not be determined until after decisions have been reached on other relevant issues.¹⁷¹ Telstra further submitted that ongoing regulatory depreciation should be the sum of: straight line depreciation of the asset; the change in value of the asset from one year to the next; and asset impairments made through the year.¹⁷²

Rate shocks

Macquarie and Optus submitted that rate shocks are unlikely to be a problem.¹⁷³ Macquarie submitted that rate shocks would only occur if Telstra made significant investment in its fixed network. Telstra submitted that its proposed approach would avoid rate shocks and lead to greater predictability in the path of prices.¹⁷⁴

Both VHA and TransACT submitted that smooth price paths should be used to minimise potential price shocks.¹⁷⁵ The CCC submitted that consumers will prefer schedules that avoid rate shocks only where those shocks are price increases.¹⁷⁶

Depreciation approach for different classes of assets

Macquarie, Optus and Telstra all submitted that the depreciation approach should be uniform across all assets.¹⁷⁷ Macquarie suggested that this is justified because of the

165 Telstra submission, p. 21.

166 Macquarie submission, p. 5.

167 Optus submission, p. 27.

168 *ibid.*

169 VHA submission, p. 13.

170 CCC submission, p. 26.

171 Telstra submission, p. 35.

172 *ibid.*, p. 27.

173 Macquarie submission, p. 5. Optus submission, p. 28.

174 Telstra submission, p. 36.

175 VHA submission, p. 16. TransACT submission, p. 5.

176 CCC submission, p. xii.

relatively high degree of homogeneity among fixed line services and that this will keep the regulatory process as simple as possible. Telstra, however, suggested that because different assets will have different asset lives and remaining lives, the depreciation payments would differ.¹⁷⁸

Cost of capital

Telstra proposed that a standard CAPM implementation of the WACC should be used.¹⁷⁹ VHA considered that a regulated rate of return should be set to provide a nominal risk-adjusted return on the investments undertaken by the access providers.¹⁸⁰

Other submissions did not comment on the cost of capital as comment was not sought by the Discussion Paper.

Price control method

Individual price caps

Telstra, Optus, Macquarie, VHA, TransACT and CCC submitted that the ACCC should continue to set individual prices for the declared fixed line services.¹⁸¹ Optus, Macquarie, VHA and the CCC submitted that this methodology will reduce incentives for Telstra to discriminate against its retail competitors which would reduce competition in the retail market.¹⁸² For example, VHA stated that it:

“...supports the Commission taking a prescription approach to cost allocation and access price setting for so long as Telstra remains vertically integrated in downstream markets.”¹⁸³

Telstra submitted that the ACCC should continue to set individual prices for ULLS and PSTN OTA in particular. Telstra considered that doing so will (i) provide Telstra and its customers with certainty regarding the price of each service; (ii) provide appropriate incentives for Telstra to manage operating expenditure and capital expenditure efficiently and counteract falling demand for fixed services; and (iii) ensure *ex ante* cost recovery, subject to appropriate forecasts of volumes being used.¹⁸⁴

Flexibility in the pricing services

Telstra submitted that there is a strong case for applying RAB pricing to all declared fixed network services. However, Telstra noted that where services are competitive, RAB pricing could be detrimental to competition.¹⁸⁵

Optus, Macquarie and VHA submitted that pricing flexibility is not appropriate for any of the declared fixed line services.¹⁸⁶

177 Macquarie submission, p. 5. Optus submission, p. 30. Telstra submission, p. 36.

178 Telstra submission, p. 36.

179 Telstra submission, pp. 28-29.

180 VHA submission, p. 13.

181 Telstra submission, p. 30; Optus submission, pp. 39-40; Macquarie submission, p. 8; VHA submission, p. 16; TransACT submission, p. 4; CCC submission, pp. 45-47.

182 Optus submission, pp. 39-40; Macquarie submission, p. 8; VHA submission, p. 16; CCC submission, p. 45-47.

183 VHA submission, p. 16.

184 Telstra submission, p. 30.

185 Telstra submission, p. 33.

186 Optus submission, p. 44. Macquarie submission, p. 9. VHA submission, p. 16.

The CCC suggested that the ACCC should retain its flexibility to deviate away from a general pricing principle where circumstances suggest doing so would better serve the objects of the TPA.¹⁸⁷

Cost allocation method

Allocating costs to individual services

Telstra submitted that the method of allocating annual costs to regulated services should be fixed, with the allocators updated each year to reflect changes in circumstances.¹⁸⁸

Optus submitted that the cost allocation approach should be transparent and objectively measurable. Optus considered that, to the extent possible, costs should be apportioned to a service from the network elements over which the service is provided and cited the approach to cost allocation adopted in the Analysys cost model as one example of this.¹⁸⁹ Further, Optus submitted that the approach should not be subject to significant information asymmetry problems and should avoid creating opportunities for regulatory gaming.¹⁹⁰

Macquarie argued that the ACCC was in a position to draw on the various inputs at its disposal (which includes the Analysys cost model and the RAF accounts) to undertake cost allocation consistent with industry policy objectives.¹⁹¹

VHA noted that there is a range of approaches the ACCC could use to allocate costs between regulated services. VHA noted that historically, the ACCC has applied an incremental cost concept to the allocation of costs, and that VHA generally supports the continued application of this principle.¹⁹²

The CCC suggested that wherever possible, the ACCC should seek to follow cost-causality principles when deciding how to allocate common costs. It suggested that where costs are common to only a sub-set of the regulated services, the ACCC should allocate these costs only to those services. Further, if usage factors – such as relative minutes of use or routing factors – can be used to sensibly allocate common costs to various services, the CCC believed that these should be applied.¹⁹³ TransACT supported in principle the CCC submission.¹⁹⁴

Geographically averaged or de-averaged prices

Telstra submitted that the approach to determining whether prices are averaged or de-averaged needs to reflect government policy, or otherwise be based on sound economic principles having regard to cost recovery in rural areas, competition in urban areas, and exemptions that are and will be in place in the future.¹⁹⁵

187 CCC submission, p. 51.

188 Telstra submission, p. 30.

189 Optus submission, p. 44.

190 Optus submission, p. 40.

191 Macquarie submission, p. 8.

192 VHA submission, p. 17.

193 CCC submission, p. 55.

194 TransACT submission, p. 2.

195 Telstra submission, p. 38.

Macquarie submitted that there should be a de-averaged price for the ULLS, but not for any other service.¹⁹⁶

Optus considered that the question should be considered on a service by service basis. Optus submitted that the ACCC should continue to set prices for the ULLS according to cost-reflective geographic price bands. Optus submitted the ACCC should replace Telstra's PSTN OTA tiered pricing table and move to a national rate.¹⁹⁷

Separate RABs for different regions or a single national RAB

Telstra submitted that it is simpler to have a single RAB, and that having multiple RABs increase the risk of inconsistency. Telstra noted that where de-averaging is sought, the annual costs could be split into different geographic areas having regard to the geographic cost structure.¹⁹⁸

Optus considered that there should be separate RABs for different regions, as this could offer a more transparent means of monitoring and assessing how unit costs of providing services across different regions vary. Optus considered that geographically de-averaged prices would not be truly cost-based unless different RABs were maintained for each region of interest and that the simplest approach to defining separate regional RABs would be to retain Telstra's existing four band structure. Optus noted that alternatively, a new (and more cost-reflective) four band structure could be introduced by retaining the current bands 1 and 2, and simply replacing bands 3 and 4 with new bands representing ESAs classified by the Analysys model as "clustered" band 3 and 4 exchanges to fall relative to the pricing which would apply to the remainder of bands 3 and 4.¹⁹⁹

Macquarie submitted that there should be a single national RAB and sub-sets of this RAB would be applicable to specific services in different regions.²⁰⁰ Macquarie submitted that there is no conflict between uniform pricing for some services and regional RABs used to determine other services.²⁰¹

The CCC considered that there should be a single RAB, but where there are significant intra-service cost variations (e.g. by geography), then these should be reflected in prices to ensure that prices promote competition. The CCC noted that introducing more RABs could increase the complexity and reduce the flexibility of price setting by the ACCC.²⁰²

Efficiency mechanisms

The CCC, Macquarie, Telstra, TransACT and VHA all submitted that there should be incentive mechanisms to promote efficient expenditure.²⁰³ The CCC and TransACT suggested CPI-X price caps on individual access service prices to promote efficient expenditure.²⁰⁴ Submissions promoting incentive mechanisms did not distinguish between capital expenditure and operating expenditure.

196 Macquarie submission, p. 9.

197 Optus submission, pp. 44-46.

198 Telstra submission, p. 38.

199 Optus submission, p. 47.

200 Macquarie submission, p. 9.

201 *ibid.*, p. 10.

202 CCC submission, pp. 22-24.

203 CCC submission, p. xiii. Macquarie submission, p. 6. Telstra submission, p. 27. TransACT submission, p. 4. VHA submission, p. 14.

204 CCC submission, p. 30. TransACT submission, p. 4.

Macquarie suggested that an *ex ante* prudency check should be used to review Telstra's capital and operating expenditure proposals leading into a regulatory period and make an assessment of whether planned expenditure is reasonable.²⁰⁵ Macquarie also argued that a locked-in RAB removes the discipline of future network optimisation and so required the use of a mechanism to encourage efficiency in expenditure.²⁰⁶

Telstra submitted that a shorter time period than used in the energy sector for operating expenditure and capital expenditure forecasts should be used. It suggested a one or two year time period. Telstra supported the use of an *ex ante* regulatory approval process for operating expenditure and capital expenditure forecasts.²⁰⁷

VHA, while supporting efficiency mechanisms, warned that there is a risk of gaming where there is an information asymmetry and so the mechanisms must be designed carefully.²⁰⁸

Optus submitted that there should not be efficiency mechanisms because they create incentives for gaming by the access provider.²⁰⁹ Optus suggested that no mechanisms need to be introduced in order to encourage access providers to incur costs efficiently.²¹⁰

Length of regulatory period

The submissions varied on the appropriate length of the regulatory period with Optus preferring a period of no more than three years and the CCC and Macquarie suggesting a five year period (the CCC suggests an initial three year period).²¹¹ Telstra suggested that price should be updated regularly, perhaps annually, to reflect changes in costs.²¹² VHA did not explicitly set out a time period, but suggested a longer rather than shorter regulatory period to allow incentive mechanisms to have an effect.²¹³

Optus noted, in support of a short regulatory period, that it is important that the regulatory regime is able to adapt and respond quickly to developments such as the roll out of the NBN and any deal between Telstra and NBN Co.²¹⁴

Price review during the regulatory period

The CCC and Macquarie submitted that in exceptional circumstances there should be the possibility of reviewing prices during the regulatory period. The CCC submitted this should be at the request of Telstra or access seekers and subject to a rigorous prudence check to avoid abuse.²¹⁵ Macquarie suggested it should occur only as ordered by the Minister if in the ACCC's view a review would be in the public interest or if competition in fixed services was being materially harmed.²¹⁶

205 Macquarie submission, p. 6.

206 *ibid.*

207 Telstra submission, p. 27.

208 VHA submission, p. 14.

209 Optus submission, p. 32-33.

210 *ibid.*, p. 34.

211 Optus submission, p. 36. CCC submission, p. 35. Macquarie submission, p.7.

212 Telstra submission, p. 36.

213 VHA submission, p. 14.

214 Optus submission, p. 36.

215 CCC submission, p. 34.

216 Macquarie submission, p. 7.

Optus submitted there should be no opportunity for regulated prices to be reviewed in the middle of the regulatory period in response to particular events which require unexpected additional costs to be incurred. However, Optus stated it may be appropriate for regulated prices to be reviewed in the middle of a regulatory period in response to events of a different nature (e.g. an NBN Co and Telstra deal).²¹⁷ Telstra submitted that pass through mechanisms should be available to deal with unanticipated outcomes relating to the NBN.²¹⁸

Incentives for service quality

The submissions on service quality incentives were varied, with the CCC, Macquarie, TransACT and VHA supporting them, while Optus and Telstra did not see a need for them.

Macquarie submitted that financial and non-financial incentive schemes should be adopted to ensure that quality of access services is not compromised.²¹⁹ VHA supported an incentive structure which would encourage the access provider to increase service quality, but warned that this structure may be subject to significant gaming opportunities.²²⁰ TransACT submitted that service quality incentives mechanisms should contain both financial penalties and rewards.²²¹ It also submitted that such mechanisms could reduce the reliance of Part XIB mechanisms such as RKR to monitor and enforce quality incentives.²²²

The CCC submitted that the presence of expenditure reduction incentive mechanisms required parallel quality incentive mechanisms to ensure that expenditure savings are not at the expense of deteriorations in service quality.²²³ It submitted that service quality incentives should incorporate both financial penalties and rewards.²²⁴ It proposed that the mechanism should allow Telstra to charge slightly higher prices if it exceeds key quality benchmarks by a certain percentage and vice versa.²²⁵ The CCC further submitted that building the standard access obligations into the quality incentive mechanism could reduce reliance on Part XIB mechanisms.²²⁶

Optus submitted that a financial incentive scheme for quality of service was not necessary and should not be introduced.²²⁷ Telstra submitted that the current model terms and conditions are sufficient and that there was no need for additional incentive schemes.²²⁸

Transition to new prices

Macquarie, Optus and VHA all proposed that some sort of glide path should be used if prices are different to the current regulated prices. Macquarie, however, submitted that (expected) lower access prices should apply immediately, while the

217 Optus submission, p. 36.

218 Telstra submission, p. 36.

219 Macquarie submission, p. 8.

220 VHA submission, p. 15.

221 TransACT submission p. 4.

222 *ibid.*

223 CCC submission, p. 35.

224 *ibid.*

225 *ibid.*, p. 36.

226 *ibid.*

227 Optus submission, p. 38.

228 Telstra submission, p. 37.

implementation of higher prices should be delayed.²²⁹ It argued that lower prices should apply immediately so that the benefits can flow through from the access seekers to end consumers as soon as possible.²³⁰

Optus submitted that it would be appropriate to maintain access prices at the current levels for a period of time and potentially implement a glide path as any significant changes could ‘shock’ the market. Then access prices should be gradually transitioned to new levels. Optus proposed that if a price change results in prices that diverge by more than 10 per cent from current prices, a glide path is likely to be required.²³¹ It submitted that new prices should be introduced over a two to three year period, with the length of time afforded for the transition along a glide path ultimately depending on the difference between current access prices and those implied by the new valuation. Optus proposed a glide path that is smooth with each increment/decrement of an equal size.²³²

VHA submitted that an extensive transitional period of 5 years, where only prices are restructured while the overall revenue requirement is maintained, would be most appropriate. It suggested that the change in prices should be factored into future prices via an adjustment to the depreciation path of the RAB.²³³

In contrast, Telstra submitted that while there may be industry calls to soften the impact of prices changes, the “requirement to do this can only be determined once the size of any potential shock is known.”²³⁴ Telstra argued that the approach it has proposed is designed to be consistent with the expectations created by the current pricing arrangements, thus minimising any differences with the price paths industry and consumers would reasonably have anticipated.²³⁵

NBN transitional arrangements

All submissions made comments on NBN transitional arrangements. The CCC submitted that during the transition to an NBN environment, and the rolling out of significant new capital infrastructure, potential price shocks need to be minimised. Future arrangements between Telstra and the NBN will significantly impact the opening value attributed to the RAB. For instance, if Telstra chooses not to sell any of its assets to the NBN, then the value attributed to the RAB will be paramount in influencing the competitive prospects and viability of the NBN. Further, if Telstra chooses to compete with NBN, the CCC submitted that during the transition period the ACCC may need to consider Telstra’s future fibre investments, and factor this into the opening RAB valuation.²³⁶

VHA also submitted that the transition to an NBN environment and the proposed legislative changes in the *Telecommunication Amendment Bill (Competition and Consumer Safeguards) Bill 2009* will materially affect the access pricing principles framework established by the ACCC. Like the CCC, VHA submitted that the possible

229 Macquarie submission, p. 10.

230 *ibid.*

231 Optus submission, pp. 48-49.

232 *ibid.*, p. 49.

233 VHA submission, p. 17.

234 Telstra submission, p. 38.

235 *ibid.*

236 CCC submission, p. 4.

sale of assets from Telstra to NBN would significantly alter the implementation of the new regulatory framework.²³⁷

TransACT submitted that a transition to an NBN environment should continue to promote industry investment, competition and the long-term interests of end-users. It also submitted that while it is difficult to speculate about future NBN arrangements, the ACCC should frame future pricing principles and indicative prices accordingly.²³⁸

Optus submitted that the transition will have a significant bearing on the period over which Telstra will be able to recover its ongoing costs. That is, once customers have migrated to the NBN, this will reduce the life over which Telstra will be able to recover its network costs through wholesale access charges. Despite this, Optus argued that Telstra should not be able to accelerate its depreciation in the period leading up to the migration, because Optus believes that NBN will compensate Telstra for its foregone revenue. Therefore, Optus submitted that Telstra's RAB should be adjusted to reflect this Telstra-NBN deal, and as such, the value of the RAB may even become negative.²³⁹

Macquarie also argued that the operation of the NBN is likely to further reduce the life of Telstra's regulated assets. As such, Macquarie suggested that current book assets lives should be maintained during this period.²⁴⁰

Telstra recognised that the transition to an NBN environment needs to promote stability in prices, and submitted that a change in the asset valuation approach may adversely distort investment decisions. Telstra argued that a successful transition should ensure that ACCC decisions align with government policy, particularly in relation to price structure, minimise disruptions to access seeker and investor expectations, minimise adjustment costs, and ensure stability in the market. Telstra submitted that a transition to a new pricing framework should not impose onerous administrative costs on firms, and should ensure to promote the objectives of the legislation.²⁴¹

237 VHA submission, p. 5.

238 TransACT submission, p. 2.

239 Optus submission, p. 31.

240 Macquarie submission, p. 6.

241 Telstra submission, pp. 5-6.

Appendix C: Description of the fixed line services

Following are brief descriptions for each of the fixed line services that are covered by this review. The full service descriptions for each service can be found in the ACCC's *Fixed Services Review Declaration Inquiry* (July 2009) (available from the ACCC's website: <http://www.accc.gov.au>).

ULLS

The ULLS is a service for access to unconditioned cable, usually a copper wire pair, between an end user and a telephone exchange. The ULLS essentially gives an access seeker the use of the copper pair without any dial tone or carriage service. This allows the access seeker to use its own equipment in an exchange to provide a range of services, including traditional voice services and high speed internet access, to end-users connected at the exchange. The ULLS has been a declared service since 1999 and was redeclared in 2006.²⁴² In July 2009, the declaration was extended for a further five years until 31 July 2014.²⁴³

WLR

The WLR service allows access seekers to resell the basic line rental service that allows an end-user to connect to the traditional voice network, make and receive calls and have a telephone number. The WLR was first declared in 2006, excluding the CBD areas of Sydney, Melbourne, Brisbane, Adelaide and Perth.²⁴⁴ In July 2009, the declaration was extended for a further five years until 31 July 2014.²⁴⁵

LSS

Line sharing is where two separate carriers provide separate services over a single copper line. The copper line spectrum is normally split (or shared) so that:

- one carrier or service provider provides the voice services over the line
- the LSS access seeker provides high-speed broadband services, through the use of its own xDSL technology, over the higher frequency part of the copper line.

The LCS has been a declared service since 2002 and was redeclared in 2007.²⁴⁶ In July 2009, the declaration was extended for a further five years until 31 July 2014.²⁴⁷

PSTN OTA

The PSTN OA service is the carriage of telephone calls from the calling party to a point of interconnection (POI) within an access seeker's network. The PSTN TA is the carriage of telephone calls from a POI within an access seeker's network to the party receiving the call. Access seekers currently use PSTN OA and TA services to provide the following services:

242 ACCC, *Declaration inquiry for the ULLS, PSTN OTA and CLLS – Final determination*, July 2006.

243 ACCC, *FSR Declaration Inquiry*, July 2009.

244 ACCC, *Local Services Review–Final decision*, July 2006.

245 ACCC, *FSR Declaration Inquiry*, July 2009.

246 ACCC, *LSS – Final decision on whether or not a LSS should be declared under Part XIC of the TPA*, August 2002; ACCC, *Review of the Line Sharing Service Declaration – Final Decision*, October 2007.

247 ACCC, *FSR Declaration Inquiry*, July 2009.

- national long-distance calls
- international calls
- mobile phone to fixed network calls
- fixed network to mobile network calls, and
- local calls.

The PSTN OTA has been a declared service since 1997 and was redeclared in 2006.²⁴⁸ In July 2009, the declaration was extended for a further five years until 31 July 2014.²⁴⁹

LCS

The LCS is a service for the supply of an end-to-end voice grade carriage service between two points within a standard zone. It allows access seekers to resell local calls to end-users without the need for deploying substantial alternative infrastructure. Commercially, the LCS is generally sold with the WLR. The LCS has been a declared service since 1999²⁵⁰ and was redeclared in 2006²⁵¹ excluding the CBD areas of Sydney, Melbourne, Brisbane, Adelaide and Perth.²⁵² In July 2009, the declaration was extended for a further five years until 31 July 2014.²⁵³

248 ACCC, *Declaration inquiry for the ULLS, PSTN OTA and CLLS – Final determination*, July 2006.

249 ACCC, *FSR Declaration Inquiry*, July 2009.

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

251 ACCC, *Local Services Review – Final Decision*, July 2006.

252 Note the variation of the declaration was in recognition of the previous exemption granted to the LCS in the CBD areas. See: ACCC, *Future scope of the local carriage service – final decision*, July 2002.

253 ACCC, *FSR Declaration Inquiry*, July 2009.

Appendix D: Statutory framework and the LTIE

Section 152AQA of the TPA requires the ACCC to determine, in writing, pricing principles for declared services at the time, or as soon as practicable after, a service is declared or varied. Pricing principles may include price-related terms and conditions. In making its determination, the ACCC is required to publish a draft determination, invite public consultation and consider submissions made during consultation.

The ACCC must have regard to its pricing principles determination when arbitrating an access dispute in relation to the same declared service under Part XIC of the TPA.²⁵⁴ However, the pricing principles are not binding on the ACCC, and parties to arbitrations are still able to address the ACCC on the relevance and applicability of the principles having regard to their particular circumstances. The ACCC considers that, although a party may argue against the principles being applied to its particular case, pricing principles may help guide commercial negotiation of access by providing greater certainty as to the ACCC's views on reasonable access prices.

The determination of pricing principles and indicative prices are intended to increase commercial certainty, to provide guidance to the ACCC's regulatory decision making, and to express the ACCC's view of reasonable access prices. This Appendix sets out some of the broad arguments as to why these new pricing principles are in the LTIE.

LTIE

Promotion of competition

In determining the extent to which a particular thing is likely to result in the achievement of promoting competition in markets for listed services the ACCC must have regard to the extent to which the thing will remove obstacles to end-users of listed services gaining access to listed services.²⁵⁵ However, the ACCC is not limited to this and may consider other matters in determining whether a thing will promote competition in markets for listed services.

The ACCC considers that the choice of asset valuation methodology will have a material impact on the level of competition in the telecommunications sector. This is because the asset valuation methodology used to set the initial value of the asset base impacts directly on access prices, which will consequently determine the profit levels of both access seekers and access providers. This, in turn, impacts the entry decisions of potential access seekers, and the level of effective competition in the market.

Any-to-any connectivity

Any-to-any connectivity is the ability of end-users of different networks to communicate. It benefits users by allowing users of one network to communicate with users of other networks. Access prices should not artificially discriminate against the users of any particular network in the provision of any-to-any connectivity and should encourage operators of different networks to configure their networks to promote any-to-any connectivity.

254 Subsection 152AQA(6) of the TPA.

255 Subsection 152AB(4) of the TPA.

Encouraging the economically efficient use of, and the economically efficient investment in, infrastructure

The TPA sets out matters that the ACCC must have regard to in section 152AB(6):

In determining the extent to which a particular thing is likely to result in the achievement of the objective referred to in paragraph (2)(e), regard must be had to the following matters:

- (a) whether it is, or is likely to become, technically feasible for the services to be supplied and charged for, having regard to:
 - (i) the technology that is in use, available or likely to become available; and
 - (ii) whether the costs that would be involved in supplying, and charging for, the services are reasonable or likely to become reasonable; and
 - (iii) the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks;
- (b) the legitimate commercial interests of the supplier or suppliers of the services, including the ability of the supplier or suppliers to exploit economies of scale and scope;
- (c) the incentives for investment in:
 - (i) the infrastructure by which the services are supplied; and
 - (ii) any other infrastructure by which the services are, or are likely to become, capable of being supplied.

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.

This legislative criterion is of particular significance to the current process, as an appropriate methodology needs to be chosen that sends correct build/buy signals to both the access provider and access seekers. It has been traditionally argued that replacement cost methodologies (such as TSLRIC+ and ORC) provide appropriate signals to access seekers and the access provider, as they determine what costs a new entrant would face. This is determined by reference to modern technologies whilst removing historical inefficiencies that may be inherent in the actual network design.

However, it is now known that replacement costs tend to overstate the costs that should be recovered. The ACCC's considers that it is the appropriate to determine the

access price based on the actual costs faced by the access provider. When faced with these costs, an access seeker can then determine if they are able to provide the service at less cost. This encourages access seekers to consider alternative technologies that are available to provide the service (and avoids the regulator having to make decisions about what technologies are appropriate). This approach also considers that the access provider receives appropriate signals, because they are recovering the actual costs that they have incurred in rolling out the relevant infrastructure.

An access charge that overestimates the actual cost of providing a specific service would also be inefficient in a productive efficiency sense, since competitors using the access service would not be able to provide retail services at the lowest possible cost. The ability to achieve dynamic efficiency will also be affected as competitors in the market paying inflated access prices for specific wholesale services may scale back investment required to develop new and innovative products.

It is important to note that price is just one of the many factors that access seekers and the access provider would take into account when deciding whether to invest in infrastructure. In many cases, there are strategic, operational and commercial factors that are greater influences on investment decisions:

- first mover advantages in the market, enabling the infrastructure owner to target specific customer segments, exploit bundling opportunities and launch “win back” campaigns targeting customers who have migrated to competitors
- the ability to control rival’s input costs through numerous price and non-price terms and conditions
- the benefits to infrastructure owners of having full control and certainty over access to essential inputs
- the ability to leverage off the ownership of essential inputs to gain competitive advantage in downstream markets
- brand recognition and marketing benefits associated with being a major owner and supplier of key inputs to the production of telecommunications services
- the high level of bargaining power in commercial negotiations resulting from, among other things, asymmetric information regarding costs, technical specifications and network operating requirements
- access to information concerning rivals’ marketing and product development strategies.

A key consideration for access seekers is the extent to which investment in their own access infrastructure will remove these competitive advantages currently enjoyed by the access provider. For access providers, on the other hand, the degree to which they can capture such benefits by investing in infrastructure will be a primary driver of their decision to invest.

Appendix E: Draft Pricing Principles Determinations

This Appendix contains draft Pricing Principles Determinations for:

- ULLS
- WLR
- LSS
- PSTN OTA
- LCS



[DRAFT]

Pricing Principles for the Unconditioned Local Loop Service (ULLS) Determination 2010

Trade Practices Act 1974

The AUSTRALIAN COMPETITION AND CONSUMER COMMISSION makes this Determination under section 152AQA of the *Trade Practices Act 1974*.

Dated

[DRAFT NOT FOR SIGNATURE]

Graeme Samuel
Chairman

Australian Competition and Consumer Commission

1 Name of Determination

This Determination is the *Pricing Principles for the Unconditioned Local Loop Service (ULLS) Determination 2010*.

2 Commencement

This Determination commences on 1 January 2011.

The pricing principles, including indicative prices, set out in this Determination do not have effect in relation to the time period 1 August 2014 to 31 December 2014, unless by 1 August 2014 the Australian Competition and Consumer Commission (Commission) makes a decision to:

- (a) extend or further extend the expiry date of the ULLS declaration; or
- (b) allow the ULLS declaration to expire and to make a new ULLS declaration under section 152AL of the *Trade Practices Act 1974*.

Note: The Australian Competition and Consumer Commission must have regard to this Determination if it is required to arbitrate an access dispute under Division 8 of the *Trade*

Practices Act 1974 in relation to the declared services covered by this Determination (see subsection 152AQA(6)). An arbitral determination may be backdated (see section 152DNA).

3 Pricing principles and indicative prices

The pricing principles specified in Schedule 1 and the indicative prices specified in Schedule 2 are to apply to the Unconditioned Local Loop Service (ULLS) declared by the Commission under section 152AL of the *Trade Practices Act 1974*.

Schedule 1 Pricing principles for the ULLS for the period 1 January 2011 to 31 December 2014

The Commission's pricing principles for the ULLS for the period 1 January 2011 to 31 December 2014 are:

For access:

- the price for the ULLS should be determined on the basis of a building block model
- the ULLS charges should be geographically de-averaged.

For connection:

- a specific cost component should be included in the ULLS monthly price, calculated by combining 'ULLS specific costs' with 'LSS specific costs' and Telstra's internal equivalent costs for ADSL, and allocating those costs across the number of active ULLS, LSS and ADSL lines
- connection charges should be set with reference to the amounts charged by third party contractors to Telstra for jumpering work in exchanges, indirect costs and back-of-house costs.

Schedule 2 Indicative prices for the ULLS for the period 1 January 2011 to 31 December 2014

The indicative prices for the ULLS for the period 1 January 2011 to 31 December 2014 are:

ULLS monthly charges on a per service per month basis for Bands 1, 2 and 3

Band	Monthly price per service
1	\$ 6.50
2	\$ 16.00
3	\$ 31.00

Note: No indicative price is set for Band 4.

ULLS single connection charges – in use ULLS and transfer ULLS connections

Band	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
1	\$50.40	\$51.91	\$53.21	\$54.54	\$55.90
2	\$53.10	\$54.69	\$56.06	\$57.46	\$58.90
3	\$57.70	\$59.43	\$60.92	\$62.44	\$64.00

Note: No indicative price is set for the ULLS in Band 4.

Note: No indicative price is set for a Vacant ULLS connection.

Charges for ULLS Managed Network Migration – involving the transfer of end user data services from a Telstra wholesale PSTN and/or ADSL service, or from a line that Telstra is using to supply a ULLS to another access seeker (MNM)

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Fixed amount (per MNM)	\$140.10	\$144.30	\$147.91	\$151.61	\$155.40
Variable amount (per connection)	\$25.00	\$25.75	\$26.39	\$27.05	\$27.73

ULLS cancellation charges

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per service where pre-jumping has occurred	\$20.00	\$20.60	\$21.21	\$21.85	\$22.51
Where entire MNM is cancelled	\$138.00	\$142.14	\$145.69	\$149.34	\$153.07

ULLS MNM minimum exchange charge – per MNM

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per exchange	\$638.00	\$657.14	\$673.57	\$690.41	\$707.67

ULLS call diversion charges for the initial connection/activation of ULLS

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Fixed amount (per ULLS call diversion)	\$9.30	\$9.58	\$9.82	\$10.06	\$10.32
Variable amount (pro rata per month)	\$12.50	\$12.88	\$13.20	\$13.53	\$13.86



[DRAFT]

Pricing Principles for the Wholesale Line Rental (WLR) Determination 2010

Trade Practices Act 1974

The AUSTRALIAN COMPETITION AND CONSUMER COMMISSION makes this Determination under section 152AQA of the *Trade Practices Act 1974*.

Dated

[DRAFT NOT FOR SIGNATURE]

Graeme Samuel
Chairman

Australian Competition and Consumer Commission

1 Name of Determination

This Determination is the *Pricing Principles for the Wholesale Line Rental Service (WLR) Determination 2010*.

2 Commencement

This Determination commences on 1 January 2011.

The pricing principles, including indicative prices, set out in this Determination do not have effect in relation to the time period 1 August 2014 to 31 December 2014, unless by 1 August 2014 the Australian Competition and Consumer Commission (Commission) makes a decision to:

- (a) extend or further extend the expiry date of the WLR declaration; or
- (b) allow the WLR declaration to expire and to make a new WLR declaration under section 152AL of the *Trade Practices Act 1974*.

Note: The Australian Competition and Consumer Commission must have regard to this Determination if it is required to arbitrate an access dispute under Division 8 of the *Trade*

Practices Act 1974 in relation to the declared services covered by this Determination (see subsection 152AQA(6)). An arbitral determination may be backdated (see section 152DNA).

3 Pricing principles and indicative prices

The pricing principles specified in Schedule 1 and the indicative price specified in Schedule 2 are to apply to the Wholesale Line Rental (WLR) declared by the Commission under section 152AL of the *Trade Practices Act 1974*.

Schedule 1 Pricing principles for the WLR for the period 1 January 2011 to 31 December 2014

The price of the WLR for the period 1 January 2011 to 31 December 2014 should be determined on the basis of a building block model.

Schedule 2 Indicative price for the WLR for the period 1 January 2011 to 31 December 2014

The indicative price for the WLR for the period 1 January 2011 to 31 December 2014 is:

Monthly price per service
\$20.00



[DRAFT]

Pricing Principles for the Line Sharing Service (LSS) Determination 2010

Trade Practices Act 1974

The AUSTRALIAN COMPETITION AND CONSUMER COMMISSION makes this Determination under section 152AQA of the *Trade Practices Act 1974*.

Dated

[DRAFT NOT FOR SIGNATURE]

Graeme Samuel
Chairman

Australian Competition and Consumer Commission

1 Name of Determination

This Determination is the *Pricing Principles for the Line Sharing Service (LSS) Determination 2010*.

2 Commencement

This Determination commences on 1 January 2011.

The pricing principles, including indicative prices, set out in this Determination do not have effect in relation to the time period 1 August 2014 to 31 December 2014, unless by 1 August 2014 the Australian Competition and Consumer Commission (Commission) makes a decision to:

- (a) extend or further extend the expiry date of the LSS declaration; or
- (b) allow the LSS declaration to expire and to make a new LSS declaration under section 152AL of the *Trade Practices Act 1974*.

Note: The Australian Competition and Consumer Commission must have regard to this Determination if it is required to arbitrate an access dispute under Division 8 of the *Trade*

Practices Act 1974 in relation to the declared services covered by this Determination (see subsection 152AQA(6)). An arbitral determination may be backdated (see section 152DNA).

3 Pricing principles and indicative prices

The pricing principles specified in Schedule 1 and the indicative prices specified in Schedule 2 are to apply to the Line Sharing Service (LSS) declared by the Commission under section 152AL of the *Trade Practices Act 1974*.

Schedule 1 Pricing principles for the LSS for the period 1 January 2011 to 31 December 2014

The Commission's pricing principles for the LSS for the period 1 January 2011 to 31 December 2014 are:

For access:

- the price for the LSS should be determined on the basis of costs associated with the specific operations support systems in place to facilitate LSS provision
- a contribution for line costs will not be recovered in the LSS monthly price.

For connection:

- a specific cost component should be included in the LSS monthly price, calculated by combining 'LSS specific costs' with 'ULLS specific costs' and Telstra's internal equivalent costs for ADSL, and allocating those costs across the number of active ULLS, LSS and ADSL lines
- connection and disconnection charges should be set with reference to the amounts charged by third party contractors to Telstra for jumpering work in exchanges, indirect costs and back-of-house costs.

Schedule 2 Indicative prices for the LSS for the period 1 January 2011 to 31 December 2014

The indicative prices for the LSS for the period 1 January 2011 to 31 December 2014 are:

LSS monthly charge per service

1 January 2011 – 31 December 2014
\$2.50

LSS single connections

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012- Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per connection	\$43.10	\$44.39	\$45.50	\$46.64	\$47.81

Note: These charges do not apply to connections in Band 4

Note: These charges do not apply where the line on which the LSS is connected was being used to supply a ULLS.

LSS single disconnections (where payable)

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per disconnection	\$38.70	\$39.86	\$40.86	\$41.88	\$42.93

Note: These charges are not payable for:

- a disconnection made pursuant to a Telstra churn process by which services can be transferred between LSS, and between LSS and DSL services, or
- any period in which the access seeker was participating in the Telstra LSS churn process and Telstra (Bigpond) was not participating in the Telstra LSS churn process.

LSS managed network migration (MNM) connection charges – where the service is to be connected on a line Telstra is using to supply a wholesale ADSL service

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012- Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Fixed amount (per MNM)	\$140.10	\$144.30	\$147.91	\$151.61	\$155.40
Variable amount (per connection)	\$32.20	\$33.17	\$34.00	\$34.85	\$35.72

Note: These charges do not apply to MNMs in Band 4

LSS MNM minimum exchange charge

	Jan 2010- Dec 2010	Jan 2011- Dec 2011	Jan 2012 - Dec 2012	Jan 2013- Dec 2013	Jan 2014- Dec 2014
Per exchange	\$784.10	\$807.62	\$827.81	\$848.51	\$869.72

Note: These charges do not apply to MNMs in Band 4



[DRAFT]

Pricing Principles for the Public Switched Telephone Network Originating Access and Terminating Access Services (PSTN OTA) Determination 2010

Trade Practices Act 1974

The AUSTRALIAN COMPETITION AND CONSUMER COMMISSION makes this Determination under section 152AQA of the *Trade Practices Act 1974*.

Dated

[DRAFT NOT FOR SIGNATURE]

Graeme Samuel
Chairman

Australian Competition and Consumer Commission

1 Name of Determination

This Determination is the *Pricing Principles for the Public Switched Telephone Network Originating Access and Terminating Access Services (PSTN OTA) Determination 2010*.

2 Commencement

This Determination commences on 1 January 2011.

The pricing principles, including indicative prices, set out in this Determination do not have effect in relation to the time period 1 August 2014 to 31 December 2014, unless by 1 August 2014 the Australian Competition and Consumer Commission (Commission) makes a decision to:

- (a) extend or further extend the expiry date of the PSTN OTA declaration; or
- (b) allow the PSTN OTA declaration to expire and to make a new PSTN OTA declaration under section 152AL of the *Trade Practices Act 1974*.

Note: The Australian Competition and Consumer Commission must have regard to this Determination if it is required to arbitrate an access dispute under Division 8 of the *Trade*

Practices Act 1974 in relation to the declared services covered by this Determination (see subsection 152AQA(6)). An arbitral determination may be backdated (see section 152DNA).

3 Pricing principles and indicative prices

The pricing principles specified in Schedule 1 and the indicative prices specified in Schedule 2 are to apply to the Public Switched Telephone Network Originating Access and the Public Switched Telephone Network Terminating Access Services (PSTN OTA) declared by the Commission under section 152AL of the *Trade Practices Act 1974*.

Schedule 1 Pricing principles for the PSTN OTA for the period 1 January 2011 to 31 December 2014

The price of the PSTN OTA for the period 1 January 2011 to 31 December 2014 should be determined on the basis of a building block model.

Schedule 2 Indicative prices for the PSTN OTA for the period 1 January 2011 to 31 December 2014

The indicative prices for PSTN OTA for the period 1 January 2011 to 31 December 2014 are:

1 January 2011 – 31 December 2014	<i>Flagfall</i>	<i>EMOU charge</i>	<i>Headline rate</i>
<i>CBD</i>	0.94	0.39	0.63
<i>Metropolitan</i>	0.92	0.54	0.77
<i>Provincial</i>	1.03	0.75	1.00
<i>Rural</i>	2.27	4.03	4.60
Average	1.05	0.84	1.10



[DRAFT]

Pricing Principles for the Local Carriage Service (LCS) Determination 2010

Trade Practices Act 1974

The AUSTRALIAN COMPETITION AND CONSUMER COMMISSION makes this Determination under section 152AQA of the *Trade Practices Act 1974*.

Dated

[DRAFT NOT FOR SIGNATURE]

Graeme Samuel
Chairman

Australian Competition and Consumer Commission

1 Name of Determination

This Determination is the *Pricing Principles for the Local Carriage Service (LCS) Determination 2010*.

2 Commencement

This Determination commences on 1 January 2011.

The pricing principles, including indicative prices, set out in this Determination do not have effect in relation to the time period 1 August 2014 to 31 December 2014, unless by 1 August 2014 the Australian Competition and Consumer Commission (Commission) makes a decision to:

- (a) extend or further extend the expiry date of the LCS declaration; or
- (b) allow the LCS declaration to expire and to make a new LCS declaration under section 152AL of the *Trade Practices Act 1974*.

Note: The Australian Competition and Consumer Commission must have regard to this Determination if it is required to arbitrate an access dispute under Division 8 of the *Trade*

Practices Act 1974 in relation to the declared services covered by this Determination (see subsection 152AQA(6)). An arbitral determination may be backdated (see section 152DNA).

3 Pricing principles and indicative prices

The pricing principles specified in Schedule 1 and the indicative prices specified in Schedule 2 are to apply to the Local Carriage Service (LCS) declared by the Commission under section 152AL of the *Trade Practices Act 1974*.

Schedule 1 Pricing principles for the LCS for the period 1 January 2011 to 31 December 2014

The price of the LCS for the period 1 January 2011 to 31 December 2014 should be determined on the basis of a building block model.

Schedule 2 Indicative prices for the LCS for the period 1 January 2011 to 31 December 2014

The indicative price for the LCS for the period 1 January 2010 to 31 December 2014 is:

Local Calls
7.0c per call