

REVIEW OF PRICING PRINCIPLES FOR FIXED LINE SERVICES

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1 Executive summary

Vodafone Hutchison Australia Pty Limited (VHA) supports a move to a regulatory framework which locks in and rolls forward a regulatory asset base (RAB) for fixed line services. Complex and frequent revaluation of assets are likely to increase regulatory risk without providing an offsetting benefit from improved economic efficiency. A lock-in roll-forward RAB is likely to provide far greater certainty for both access providers and access seekers, while providing better incentives for promoting cost efficiency.

We are highly supportive of an access regime that promotes certainty. Improving regulatory certainty with respect to access terms and conditions is in the long-term interest of end-users; it encourages efficient investment in infrastructure and promotes competition in downstream markets. The promotion of certainty should be used by the Commission as its guiding principle for decisions about any contentious aspects of the new regulatory framework that lack compelling economic arguments favouring one approach over another.

Good regulatory practice requires that when compensating the fixed line service provider for access to its network, the expected level of compensation should be equal to the value of the initial investment by the asset owner – no more, no less. A strong expectation of cost recovery creates regulatory certainty and encourages efficient investment.

We consider that depreciated historic cost (DHC) is likely to provide the most appropriate basis for setting the initial RAB for enduring bottleneck infrastructure. DHC appropriately indexed provides an initial RAB which is most consistent with the economic principles of cost recovery and efficiency.

There is little merit in adopting a principle of cost recovery and providing regulatory certainty over some level of cost if the 'costs' that locked in exceed the prudently incurred cost of the asset and/or ignores the fact that those costs have been partly (or fully) recovered since they were incurred. Therefore, it would be appropriate for the Commission to have regard to historic costs and to have regard to the recovery of past costs that Telstra has received.

In general, VHA considers that it would be desirable to incorporate incentives to encourage efficient behaviour within any new regulatory framework. In considering the scope of any incentives regard should be had to the outcomes of the incentives inherent in the existing regulatory pricing principles and the fact that Telstra is a vertically integrated access provider and uses the access services to supply its own retail customers.

While Telstra remains vertically integrated, it would be inappropriate to allow it any degree of price flexibility in setting access prices. Telstra has very strong incentives to load costs onto the access services where it faces the most competition in downstream markets. Therefore, the Commission will need to continue to determine specific allocations of costs between regulated services. There are a range of approaches the Commission could use to allocate costs between regulated services. Historically, the Commission has applied an incremental cost concept to the allocation of costs. We support the continued application of this principle.

We support transitional arrangements that focus on restructuring prices between services while maintaining the overall revenue requirement. Access seekers (and in turn end users) should generally be protected from any price shocks where they have made significant investments that rely on the services being supplied by the access provider.

2 Introduction

VHA welcomes the discussion paper from the Australian Competition and Consumer Commission (the **Commission**) reviewing the 1997 Guide to Telecommunications Access Pricing Principles (**1997 Access Pricing Principles**) for fixed line services. VHA is an access seeker with respect to fixed line services through its purchase of the Public Switch Telephone Network (**PSTN**) terminating access service.

We regard reform of the Commission's access pricing principles for fixed line services as a necessary complement to the Australian Government's proposed amendments to the access regime set out in the *Telecommunications Legislation Amendments (Competition and Consumer Safeguards) Bill 2009*. We support a move to an ex-ante regulatory access framework for fixed line services that 'locks-in' and rolls forward assets as part of a RAB. The Commission's existing 'forward-looking', Optimised Replacement Cost (**ORC**) approach to asset valuation¹ used in the TSLRIC+ pricing methodology² has proved complex, contentious and ineffective. In our view, the RAB approach is more suitable for regulation of natural monopoly infrastructure, although it is not clear whether such an approach is suitable for regulation of access services in competitive (or contestable) markets.

2.1 Access pricing principles: Lessons from the last decade

Part XIC of the *Trade Practices Act 1974 (TPA)* is the legislation governing Australia's telecommunications access regime. Under the legislation, services provided by telecommunications carriers can be declared if the Commission deems that declaration promotes the 'long-term interest of end-users'. Access providers must grant access to declared services upon request.

Part XIC prescribes a 'negotiate-arbitrate' framework for obtaining access to declared services. It requires parties to negotiate the price and non-price terms of access to declared telecommunications services. If agreement cannot be reached, it defines a process for the Commission to resolve the dispute in a manner which promotes the long-term interests of end-users. The provisions of Part XIC allow access providers to submit 'access undertakings' for approval by the Commission and provisions exist for the Commission to set 'pricing principles' and 'model terms and conditions' which are designed to signal the Commission's approach to resolving disputes, and hence guide negotiations between access seekers and access providers. However, the practical impact of the Commission's pricing principles has been to constrain commercial negotiations, causing access seekers to increasingly notify access disputes and rely on the arbitration process for an outcome. The reliance on arbitration is, in our view, contrary to the intention of the 'negotiate-arbitrate' framework.

The 'negotiate-arbitrate' framework and the 'undertaking' approval process set out in Part XIC of the TPA have caused major problems for access providers and access seekers in both fixed line and mobile services. The Australian Government has recognised these problems and is seeking to reform the telecommunications access regime through its *Telecommunications Legislation Amendments (Competition and Consumer Safeguards) Bill 2009*. VHA welcomes the Government's proposed reforms, but equally considers that the Commission must implement a new approach to setting access pricing principles for fixed line services.

In our view, the Commission's historic approach to determining pricing principles has contributed to the complexity and regulatory uncertainty created by Part XIC of the TPA. We note that both the Commission and access providers have developed numerous 'forward-looking' incremental cost models

¹ An Optimised Replacement Cost asset valuation is determined by what it would cost at today's prices to replace the existing network with a newly designed network.

² TSLRIC+ stands for Total Service Long Run Incremental Cost, where the '+' refers to the allocation of common costs to the incremental cost of each service.

to calculate the prices of fixed (and mobile) access services. The various cost models are complex and generally have a limited life, with access prices in future periods typically set with reference to a new, often entirely different, cost model. The theoretical foundation and practical application of these models have been subject to significant legal and economic debate. Indeed, cost models are often at the centre of numerous proceedings in the Australian Competition Tribunal. As a result, there has been very limited certainty for either access providers or access seekers regarding the pricing principles, and hence prices, which are likely to be set for access services in the long term.

2.2 Forward-looking costs and natural monopoly infrastructure

The Commission's 1997 Access Pricing Principles emphasise the use of 'forward-looking' costs to set access prices for fixed line services. According to the Commission, 'forward-looking' costs are:³

... 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.

The Commission's interpretation of the principle of 'forward-looking' costs has seen it periodically 'optimising' and then revaluing the fixed line assets used to provide access services. In practice, the revaluation of the assets has involved the Commission using entirely different cost models with markedly different assumptions regarding optimal network design and best-in-use technology. In addition, each time the Commission has revalued the assets it has used updated assumptions regarding current and future input costs. The Commission's approach has caused widely fluctuating regulated asset values, which subsequently impact the determination of access prices for fixed line services.

The Commission's approach is, in part, predicated on a view that pricing based on re-valued assets would send efficient 'build-buy' signals to potential infrastructure competitors who might view the regulated services as contestable. The justification typically being that if infrastructure competitors could enter at lower cost than those estimated by a 'forward-looking' cost model then that would be desirable from the perspective of end-users. Alternatively, access prices that are set below the rate determined by a forward-looking cost model may discourage desirable investment in competing infrastructure (and encourage too much use of existing assets).

The Commission's desire for efficient 'build-buy' signals is not appropriate for natural monopolies (or so-called enduring bottlenecks). Natural monopolies arise when the economies of scale in an industry are such that one firm can provide services at materially lower cost than two (or more) firms. Duplication of their 'bottleneck' infrastructure is difficult to achieve and, in the event it does occur, the resulting competition is generally unsustainable. By definition, natural monopoly services are most efficiently provided by a single firm. Regulation of natural monopolies must be structured around providing incentives for the regulated firm. In these circumstances, adjusting prices to continually reflect fully forward-looking cost may not serve as an appropriate efficiency objective and may discourage efficient use of the existing network infrastructure.

We note that where regulation applies to assets which are competitive, or at least contestable, (that is, the assets can be efficiently duplicated) different considerations will arise. Since the Commission established its 1997 Access Pricing Principles, few distinctions have been made in the regulation of services which are enduring bottlenecks and services which are contestable or supplied in markets with multiple infrastructure competitors. While there are principles, such as increasing business certainty or reducing regulatory complexity, that are common to the regulation of all declared services, the regulatory outcomes over the last decade suggest that a 'one-size-fits-all' approach is no longer appropriate for the regulation of telecommunications

³ ACCC (1997) Access Pricing Principles— Telecommunications: a guide, page 29.

access services. The optimal approach to regulating access to natural monopoly infrastructure (for example, fixed line services) is likely to be different to the optimal approach to regulating competitive (or contestable) infrastructure markets (for example, the mobile terminating access service).

The proposed legislative changes in the *Telecommunication Amendments Bill (Competition and Consumer Safeguards) Bill 2009* (if passed by the Australian Parliament) together with the establishment of NBN Co will materially affect the design and implementation of the Commission's new regulatory framework for fixed line services. For example, the full structural separation of Telstra will affect the degree of flexibility allowed within the framework for setting depreciation and for the allocation of costs between services. Furthermore, the potential for Telstra to vend some of its regulated assets into NBN Co may complicate the implementation of a new regulatory framework.

2.3 Distinction between TSLRIC+ and locking in the RAB

The distinction between TSLRIC+ and the Commission's proposed approach to use an ex-ante regulatory access framework (based on a RAB) primarily arises from differences in the treatment of asset values. The Commission's approach to forward-looking costing of access services (which it termed TSLRIC+) has involved periodic revaluations of the assets used to provide regulated services. Under this approach, changes in the regulated asset value between periods are expected to reflect changes in technology, input prices (eg, raw material and labour) and more efficient network design. In reality, changes in the value of regulated assets have primarily been affected by changes in input prices (technologies and network design have largely been held constant) and by the use of entirely different cost models for calculating the assets value (eg, the Commission has referred to models such as NERA, PIE, PIE II, Analsys, and TEA⁴ in determining access prices).

The uncertainty regarding the current and future valuations of assets has made setting access prices extremely complex. For example, setting the depreciation component of access prices has involved significant debate about the expected changes to input prices. Inevitably, the forecasting of future input prices and subsequent asset revaluations (using different models and inputs) has resulted in substantial and unexpected fluctuations in prices. The fluctuations in prices resulting from these asset revaluations have created both regulatory uncertainty and a significant risk of cost under- or over-recovery.

An ex-ante regulatory access framework 'locks in' and 'rolls forward' a RAB. The elimination of periodic asset revaluations can substantially reduce the risk of cost under- or over-recovery. However, the change to the regulatory risk profile will depend on:

- > the size of the initial RAB which is 'locked in'; and
- > the use of incentives to encourage more efficient behaviour.

The initial RAB defines a portion of the stream of revenues that the access provider should expect to recover. As such, the initial RAB must be set at a level which is not biased toward either under- or over-recovery of costs. If the Commission is to avoid bias in determining the initial RAB, it is essential to consider the level of cost recovery the access provider, Telstra, has received to date. Furthermore, it should be mindful that the cost modelling required for some asset valuation approaches relies on hypothetical network design, economic and engineering assumptions and uncertain forecasts of demand. Such modelling risks substantial error in setting the initial RAB, and which could lead to sustained cost under- or over-recovery if that forms

⁴ These model names refer to the firm that developed the model (eg, NERA and Analsys) and name given to the model by Telstra (eg, PIE, PIE II and TEA). Each model is of a fixed line network in Australia.

part of the RAB which is 'locked in'. Finally, when considering the level of costs to be recovered the Commission should only permit the access provider to recover past costs that have been prudently incurred and those 'costs' should not include any element of monopoly profit.

The design of incentives to encourage more efficient behaviour typically relies on the potential for under- or over- recovery of costs. For example, if forecast expenditures are included in a future RAB despite actual expenditures being less than forecast then there will be cost over-recovery in the future. However, as discussed below, the design of a mechanism which allows some risk of under- or over-recovery can provide desirable incentives to incur costs efficiently which may justify this risk.

VHA supports a move to a regulatory framework which locks in and rolls forward a RAB for fixed line services. As a natural monopoly, fixed line services are unlikely to respond to the 'build-buy' signals generated by forward looking cost-models such as TSLRIC+. Hence complex and frequent revaluation of assets are likely to increase regulatory risk without providing an offsetting benefit from improved economic efficiency. The RAB is likely to provide far greater certainty for both access providers and access seekers, while providing better incentives for promoting cost efficiency in natural monopolies.

3 The legislative criteria and the conceptual framework

The legislative criteria for 'reasonable' access pricing contained in Part XIC of the Act are a sound basis for designing any new regulatory framework. The critical objectives for the design of the regime include the promotion of competition, pursuit of economic efficiency and recognition of the legitimate interest of the access provider. In practical terms of the new regulatory framework should ensure that:

- > access prices promote competition. In cases where there is a vertically integrated access provider, the terms of access should provide a level playing field (that is, equivalence) between access seekers and access providers when they compete in downstream markets. Ensuring a level playing field requires the Commission to have regard to the allocation of costs between services.
- > the access provider is encouraged to incur costs efficiently. However, the benchmark of efficiency should reflect what is realistically obtainable given reasonably prudent decisions on network design and technology made in the past. In other words, when an existing network is sunk, efficiency is promoted when future, on-going costs are minimised and new technologies are adopted in a timely manner.
- > access prices provide incentives to provide the quality of service demanded by consumers. Whilst the 'efficient' level of service quality is difficult to determine in the absence of competition, the regulatory framework should not bias in favour of too low or too high a quality of service. The regulator may need to assess the cost and benefits of introducing incentives to promote quality of service.
- > the legitimate business interests of the access provider are preserved. The access provider has a right to a 'normal' return on past investments, but it does not have a right to a monopoly (or 'supernormal') return. In practice, this means the Commission should determine a rate of return on assets that reflects the rate that is obtainable in a competitive market and is commensurate with the risks of the investment.

3.1 Creating certainty

The Commission's discussion paper indicates that creating certainty is a key driver for its review of the 1997 Access Pricing Principles for fixed line services. We are highly supportive of an access regime that promotes business certainty. Improving regulatory certainty with respect to access terms and conditions is in the long-term interest of end-users; it encourages efficient investment in infrastructure and promotes competition in downstream markets. The Commission should regard the promotion of certainty as the guiding principle for decisions about contentious aspects of the new regulatory framework that lack compelling economic arguments favouring one approach over another.

Good regulatory practices requires that when compensating an asset owner for the use of a long-lived asset, the expected level of compensation should be equal to the value of the initial investment by the asset owner – no more, no less. A strong expectation of cost recovery creates regulatory certainty and encourages efficient investment.

The regulatory framework should not discourage access providers from making efficient investments. If there is a risk that the regulator could make a future decision to disallow an investment from being recovered (that is, the asset will be ‘stranded’ by regulation) then it will have a ‘chilling’ effect on investment across the sector. Access providers should have an expectation that the cost of its efficient past investments will be recovered but the expectation must not constitute a guarantee of cost recovery. The Commission must have clear guidelines for determining whether investments by access providers have been prudently incurred and efficiently undertaken. In addition, it must have guidelines on what happens to assets within the RAB that are made redundant through cost-efficient improvements in technology. These matters are best handled through a periodic regulatory review and reset of the RAB.

3.2 Balancing legislative criteria

The potential for technology and service innovation leading to infrastructure competition was apparently central to the Commission’s thinking in determining its Access Pricing Principles in 1997. Over the following decade technological advancement and innovation has occurred across many telecommunications markets. Mobile and wireless services have seen rapid technological change, increasing the value of the networks and reducing costs to allow infrastructure competition to develop. In contrast, developments in fixed line services and networks have not resulted in a wholesale duplication of networks. Infrastructure competition has been restricted to a limited number of geographic areas. In most areas, the fixed line network remains an enduring bottleneck.

This context means that the regulatory framework must distinguish between services which are supplied by enduring bottleneck infrastructure and services which are supplied in contestable and/or competitive markets. In competitive markets, the value of a firm’s assets is determined by the future stream of revenues and expenditures in supply services to end-users. This value will change over time to reflect demand and supply conditions in the market to ensure that decisions regarding the use of the assets are in line with the interest of end-users. Regulatory intervention which distorts this competitive asset value will inevitably distort efficient use of and investment in infrastructure. In contrast, demand and supply conditions in monopoly markets will not predict an asset value which signals use of the asset which is in the interest of end-users. In this case regulation can ‘improve’ on the monopoly outcome to encourage greater use of assets.

3.3 The conceptual framework

The Commission has historically adopted a ‘forward-looking’ concept for calculating the cost of using an asset for a regulatory period. The cost of using an asset for a regulatory period has been calculated by adding:

- > the ‘return on capital’ where the value of capital is calculated as the cost of building an optimised replacement network; to
- > the ‘return of capital’ calculated as the expected change in the cost of building an ‘optimised replacement network’ during the regulatory period;
- plus
- > operating costs established by benchmarking ‘mark-ups’ on capital costs.

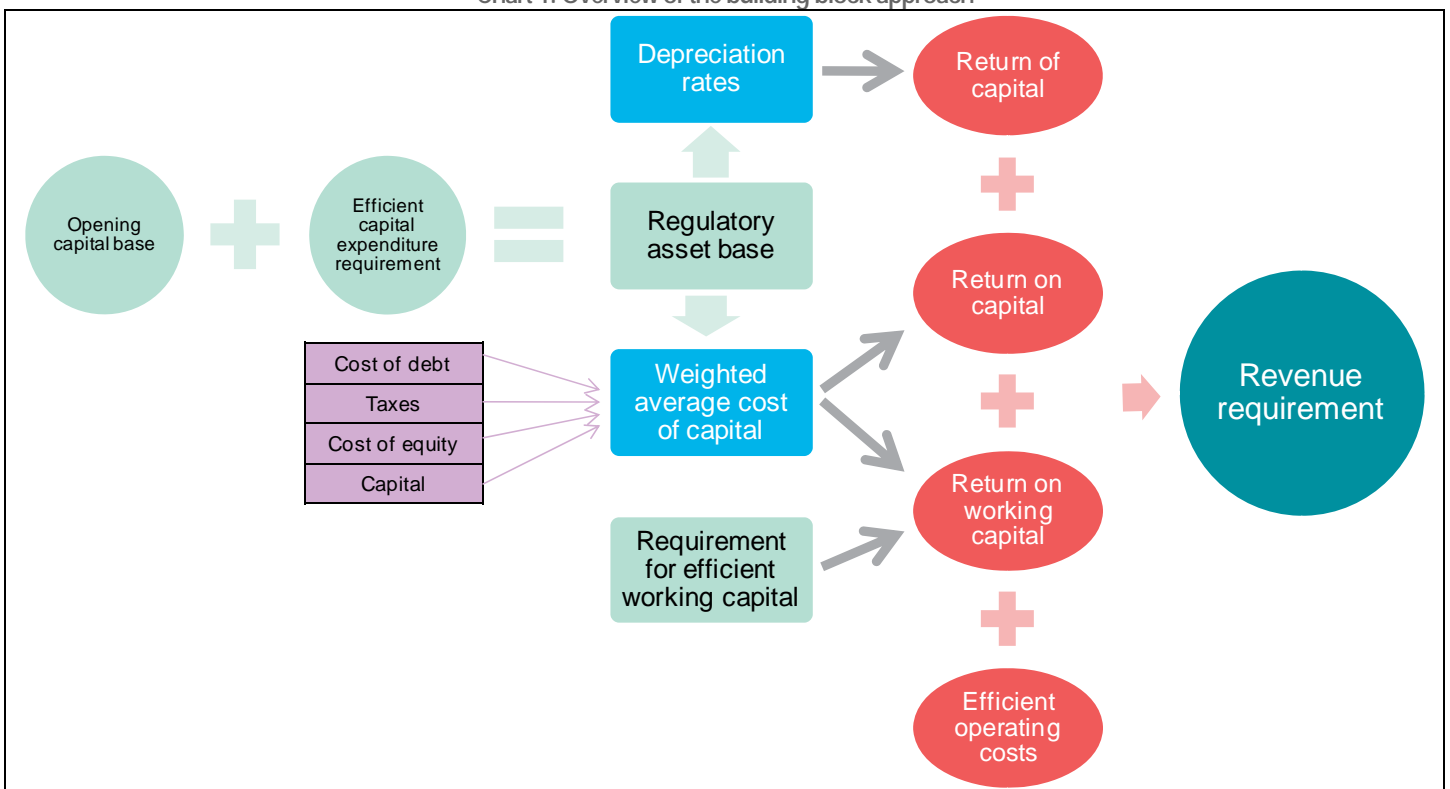
Where an asset is used to provide multiple services (regulated or unregulated), costs are allocated to each service based on the 'incremental cost' of each service plus an equi-proportionate mark-up⁵ to cover costs which are not incremental to any particular services.

The Commission's historic approach could broadly be described as a 'building block' approach. However, in contrast to building block approaches used in other regulated industries the initial RAB is revisited at the start of each regulatory period and no record is kept of allowed (or actual) asset base recovery (depreciation) to 'net off' the initial RAB for the next regulatory period.

Within the broad framework of a 'building block approach to regulation' there are a variety of options for valuing assets, defining the profile of depreciation, setting the return on capital, determining operating and working capital costs, and allocating cost to individual services (if that allocation is undertaken at all).

The key inputs to the building block approach to regulation are described in Chart 1.

Chart 1: Overview of the building block approach



Source: Based on IPART 2007, *Review of the CityRail Regulatory Framework*, Issues Paper, October, p62.

Within the conceptual framework of the building block approach outlined above a number of practical design choices must be made including the approach to setting the initial RAB, whether that asset value is every revisited in the future, deciding on the profile for recovering that asset base, the

⁵ An 'equi-proportionate' mark-up is one which applies the same percentage mark-up to each services. The percentage to apply is calculated to be the one that is sufficient to cover all of the common costs.

appropriate return on unrecovered capital investments, and deciding how operating and capital expenditures will be rolled into the asset base. Where the asset is used to provide multiple services, rules may be needed to determine the allocation of costs to regulated services.

The 1997 Pricing Principles Guide indicated four broad principles for determining access prices, stating that they should:

- > be cost-based;
- > not discriminate in a way which reduces competition;
- > not be inflated to reduce competition in dependent markets; and
- > not be predatory.

Many of these principles remain relevant however, the Commission should restate and expand them to ensure consistency with s152AH of the *Trade Practices Act 1974 (TPA)* or, alternatively s152BCA of the *Telecommunications Legislation Amendments (Competition and Consumer Safeguards) Bill 2009* (in the event that it is passed by the Australian Parliament). The principles in the latter state that the Commission must have regard to:

- > whether the determination will promote the long-term interests of end-users of carriage services or of services supplied by means of carriage services;
- > the legitimate business interests of a carrier or carriage service provider who supplies, or is capable of supplying, the declared service, and the carrier's or provider's investment in facilities used to supply the declared service;
- > the interests of all persons who have rights to use the declared service;
- > the direct costs of providing access to the declared service;
- > the value to a person of extensions, or enhancement of capability, whose cost is borne by someone else;
- > the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility; and
- > the economically efficient operation of a carriage service, a telecommunications network or a facility.

In considering its design choices for the RAB, it would be helpful if the Commission set out specific criteria for guiding its decisions. For example, VHA regards the following concepts as providing critical direction to the Commission's review of the 1997 Access Pricing Principles:

- > **Cost Recovery** – the legislative criteria of 'legitimate business interest' exists to ensure that access providers expect to achieve cost recovery. Access provider should have an expectation that they can recover past prudent investments including a normal return on unrecovered capital. The principle of cost recovery should be central to considerations around i) the setting of the initial RAB; and ii) for the treatment roll-forward of that asset base.
- > **Incentives for efficient behaviour**– Incentive structures may be adopted to 'promote efficient use of and efficient investment in infrastructure'. Incentives should be built into regulation where they can be demonstrated to promote efficiency objectives.
- > **Competition on its merits** – in recognition that the current access provider is vertically integrated for fixed line access service in Australia, consideration must be given to whether the design choices promote competition in downstream markets. In particular, the level of depreciation and allocation of costs between services must be examined to ensure that investment decisions in downstream markets are not distorted and there is a level playing field for competition between access seekers and the retail arm of the access provider.

4 The building block approach

The essential elements to consider in implementing a building block approach are discussed in this section. They include:

- > the establishment of the initial RAB for existing assets, including rules on whether that RAB should ever be re-valued in the future;
- > deciding whether there should be multiple RABs for each regulated service or one single RAB for an enduring bottleneck network;
- > valuing assets for the initial RAB;
- > setting rules on how quickly the value of the existing network can be recovered in revenues; and
- > deciding how additional expenditures should be 'rolled into' the RAB and in doing so how this will effect incentives to incur costs efficiently and to maintain quality of service

4.1 Establishing a RAB for existing assets

4.1.1 The role of the RAB

The purpose of setting a RAB is to set an expectation for the regulated business as to what level of revenue they can expect to recover in the future. As telecommunications services are capital-intensive, the value of the initial RAB is likely to be the main determinant for the level of access prices into the foreseeable future. Given the network is largely made up of existing (sunk) assets, the value placed on those assets will determine the base on which prices are set. Over time, additional expenditures on maintaining and refurbishing the network will be added to the RAB in one form or another. However, given the long-life of many assets it will take a considerable amount of time for this additional expenditure to influence pricing.

The purpose of setting a RAB is to provide an expectation of the future revenues that will be received by the owner of the asset. All regulatory approaches either explicitly or implicitly set a RAB. The approach of forward-looking asset revaluations used by the Commission over the last decade implicitly set a RAB at the start of each period and set an expectation for future revenues. However, under the 'revaluation' approach that expectation was only for the life of the regulatory period.

Explicitly setting a RAB is likely to provide greater certainty for access providers (and indirectly access seekers) if it committed to by the regulator. That is, certainty is increased if the RAB signals that the regulator will commit to a level of future revenues that seeks to recover that RAB over time. In this sense, the RAB provides an explicit reference point for determining future compensation consistent with no expected cost under- or over-recovery.

However, it is important to recognise that the adoption of an explicit RAB does not provide an appropriate means for ensuring cost recovery if the initial RAB is set inappropriately high (or low). That is, the RAB only provides a means of checking to ensure that the 'cost' set in the initial RAB is recovered. Whether this accords with cost recovery depends critically on setting the initial RAB to reflect cost.

In addition, whilst setting an explicit RAB will provide some certainty to access seekers that the present value of future prices in total will recover the initial investment, it says little about the path of prices. The 'RAB' combined with a principle of cost recovery provides a framework for setting prices to create an expectation of cost recovery and to guard against cost over-recovery. It is however, the Commission's decisions regarding depreciation profiles and cost allocations which determine the level and path of prices which are critically important to access seekers operating and investing in downstream markets.

4.1.2 Attributing a value to sunk assets

When existing assets are brought into a form of regulation for the first time, they must be attributed a value. This is problematic when much of the value of the existing assets has been 'sunk'. That is, when the difference between the original cost of the investment and the salvageable value of the investment is significant. Much of the value of assets used to provide regulated services is 'sunk'.

While economic efficiency may be served by placing a low (nil) value on sunk assets, regulators are mindful of the chilling effect on future investments in other circumstances they may create if they 'signal' that they will place a low value on assets once they are sunk. Regulators (including the Commission) have used a variety of different approaches to valuing sunk assets for regulatory purposes. However, there is no single regulatory precedent for one particular approach to valuing sunk assets that are brought into a new regulatory regime.

The Commission's discussion paper provides a list of what it considers to be the 'most common' approaches. They include historic costs, depreciated historic cost (DHC), current cost, optimised replacement cost (ORC), and depreciated optimised replacement cost (DORC). Of these approaches, DHC and DORC have most frequently been used by regulators to place a value on existing assets. Indeed, the Gas Code prescribes these methods as the lower and upper bounds for the value of the initial RABs for gas pipelines.

It is also important to recognise that there may be some existing assets used to provide regulated services that are not 'sunk'. That is, these assets may have a significant value in alternative use (perhaps greater than the original cost of acquiring them). Such assets might include land and land easements. As land is an appreciating asset which can be sold by the access provider for a capital gain, it may require special treatment in a RAB to ensure that the level of compensation in access prices excludes the future gain that the access provider will receive if and when they sell the land.

4.1.3 Revaluation versus lock-in of the RAB

As discussed above, an approach which re-values the asset base periodically creates uncertainty regarding future asset values and hence the level of cost under- and over-recovery. Whilst it is generally expected that technological development will result in future cost reductions, the input prices for existing technologies may fluctuate with demand and supply conditions. For example, the price of copper and labour are key inputs to the construction of a buried copper access network which have no clear downward trend. Nevertheless, we would expect that if assets were correctly re-valued to reflect truly forward-looking costs the value of assets would be expected to decline over time.

This is not to say that periodic re-valuations would deny the access provider an expectation of cost recovery. The access provider would expect cost recovery as long as the allowed depreciation on past investments reflects expected changes in the asset value in the next period. In other words, cost recovery would be expected as long as any 'expected' revaluation of the asset is reflected in depreciation of the existing asset. For example, if an asset worth \$100 today is expected to be re-valued in 10 years to \$50 (based on future expected technologies) then you will need to give \$50 in depreciation during that 10 year period to ensure the initial cost is recovered.

However, if the RAB is locked in and rolled forward, incentives may be created to increase capital expenditure and expand the RAB with inefficiently incurred capital expenditures. While it may be possible to monitor actual or allowed capital expenditure over time and attempt to 'test' whether that capital expenditure is prudent and efficient, it may be necessary to include in the regime some occasional 'reality checks' (say every 10 years) which seek to determine whether the RAB has been gold plated with inefficient expenditures. In order to retain a reasonable level of certainty for the access provider the terms of the 'reality checks' should be clearly specified and as mechanistic as possible, and should not seek to write off assets with the benefit of hindsight. In other words, the reality checks should examine whether the capital expenditure was prudent having regard to the information which was reasonably available at the time.

4.2 A single RAB

VHA considers that a single RAB is likely to be the most effective means of ensuring that regulated prices are set at efficient levels and in a manner which does not distort competition in downstream markets.

In cases where more than one service is provided by the same asset the way in which costs are allocated between services becomes critical to efficiency outcomes. The recovery of common costs between services should ideally be done in a manner which minimises distortions in consumption (that is, so-called Ramsey pricing). Importantly, this efficient pattern of cost recovery will change over time as demand for existing services change and new services are supplied using the asset. In addition, in cases where the access provider is vertically integrated into downstream markets the allocation of costs between access services may affect competition in the downstream markets.

4.3 Setting the initial RAB

VHA considers that DHC is likely to provide the most appropriate basis for setting the initial RAB for enduring bottleneck infrastructure. DHC appropriately indexed provides an initial RAB which is most consistent with the economic principles of cost recovery and efficiency. For enduring bottleneck infrastructure the DORC approach could only be described as the upper-bound of an appropriate asset value.

As discussed above, cost recovery is a key principle of regulation which ensures that the legitimate business interests of the access provider are addressed. A greater expectation of cost recovery increases regulatory certainty. Cost recovery ensures that the access provider receives compensation for past investments plus a normal return on those investments (though it does not extend to the inclusion of monopoly returns).

However, there is little merit in adopting a principle of cost recovery and providing regulatory certainty over some level of cost if the 'costs' that locked in exceed the prudently incurred cost of the asset and/or ignores the fact that those costs have been partly (or fully) recovered since they were incurred. Therefore, it would be inconsistent with legitimate business interest criteria for the Commission not to have regard to historic costs and to not have regard to the recovery of past costs that Telstra has received.

DHC is also the most objective asset valuation methodology because it is drawn from actual costs. The depreciation component can also be readily observed by examining the revenues the access provider has actually received from services on its asset. It is therefore much easier to construct, and far less contentious, than theoretical valuations such as DORC. Looking forward, DHC will provide the most appropriate and logically consistent methodology for rolling future capital expenditure into the RAB. VHA note the DHC methodology for the initial RAB is likely to prove most effective for preventing over-recovery on cost incurred for existing assets

DORC valuations have been applied for a limited number of regulated assets (eg, gas pipelines). DORC valuations are necessarily complex and theoretical exercises. For example they require a detailed and subjective analysis of the cost incurred in building a replacement network which may provide very different services to the existing asset and a detailed analysis of the depreciated value of the existing asset.

VHA considers that the DHC methodology is the most appropriate approach for determining the initial RAB for enduring bottleneck infrastructure.

4.4 Depreciation

In a roll-forward approach, cost recovery can be met by a range of different depreciation profiles. Depreciation may be front-loaded, back-loaded or even negative for certain periods, yet cost recovery can be achieved if the unrecovered capital in the asset base is rolled forward at the appropriate

discount rate to a time when the capital can be recovered. However, this is not to say that all depreciation profiles should be considered to be reasonable.

The ideal depreciation profile might depend on a range of factors including changing demand for services, risk of bypass, and the opportunity of new services to be supplied by the existing network. In reality the Commission is unlikely to know these factors in sufficient detail to set an 'ideal' depreciation profile. It may therefore allow the access provider to set the depreciation profile.

However, in the case where there is a vertically-integrated access provider competing against access seekers in downstream markets, other considerations become important. In particular, where access seekers and end-users have invested in infrastructure which is dependent on continued access they may be exposed to opportunistic and abrupt price changes made by the access provider.⁶

It is for this reason that VHA would generally support a path of depreciation which results in a smooth path of prices. This will allow access seekers a predictable cost structure to allow them to invest with a higher degree of certainty, promoting competition and investment in downstream markets.

4.5 The rate of return

VHA considers that the regulated rate of return should be set to provide a normal risk-adjusted return on the investments undertaken by the access provider.

The level of the risk-adjusted return will depend on the variability in the cash flows from the investment. In the case of a fully regulated monopoly asset (where all services supplied using the asset are regulated) the variability in cash flows will depend on nature of the regulation. In contrast, where only one or two services supplied by the network are regulated (eg, for mobile networks) the cash flows will depend on demand and supply conditions in the market for mobile services.

VHA notes that cash flows from its mobile businesses are generally highly correlated with economic conditions and therefore a higher risk-adjusted return is required to make a normal return. In contrast, the cash flows from a fixed line network (particularly one regulated under a regulatory regime offering certainty regarding cost recovery) will be less correlated with economic conditions and require a significantly lower risk-adjusted return.

4.6 Providing incentives for efficient behaviour

Over the past decade there has been significant academic and practical experience with incentives structures within economic regulations. Nevertheless, creating incentives for efficiently timed and sized expenditures which provides an efficient quality of service is extremely difficult in regulatory environments because, by definition, the competitive market signals which encourage 'efficiency' in decision making are absent. In competitive markets, the nature, level and timing of expenditures will depend on demand and supply conditions of the market. However, when markets are regulated these conditions cannot be observed and left unregulated firms may make poor/inefficient decisions regarding expenditures. In addition, the design of the regulatory framework will create its own incentives for behaviour. Poorly designed regulatory arrangements can create perverse

⁶ Biggar, Darryl R. (2008) "Is Protecting Sunk Investment by Consumers a Key Rationale for Natural Monopoly Regulation?", Available at SSRN: <http://ssrn.com/abstract=1086866>

incentives to inefficiently incur costs, to sell fewer services on assets which have spare capacity, and to increase quality of services when there is little demand for it from end-users.

In general, VHA considers that it would be desirable to incorporate incentives to encourage efficient behaviour within any new regulatory framework. In considering the scope of any incentives regard should be had to the outcomes of the incentives inherent in the existing regulatory pricing principles and the fact that Telstra is a vertically integrated access provider and uses the access services to supply its own retail customers.

Under the existing pricing principles, a price cap for each service, the access provider might be expected to have very strong incentives to sell more services. Despite this, Telstra has not sought to expand sales of its access services. An important reason for this is likely to be Telstra's vertically integrated structure. Because Telstra competes with access seekers in downstream markets and earns profits in those markets where it wins sales in preference to access seekers it has much less incentive to sell a high volume of access products to access seekers.

4.6.1 Incentives to improve productivity

VHA supports measure to create incentives for the access provider to sell more services and improve cost efficiency. However, VHA is mindful that such incentives require strong regulatory oversight to ensure that the regulatory mechanisms themselves are not 'gamed'. The reality of incentives mechanisms is that they rely on the regulator to forecast service volumes and expenditures. Incentives are implemented by creating the potential for cost over-recovery, whether that means selling more services or reducing costs. However, if the regulator does not have access to full information then the incentive mechanisms risks being beset by regulatory gaming opportunities.

Unavoidably, there is likely to be a significant information asymmetry between the Commission and the access provider as to what are reasonable forecasts of service volumes and expenditures. Any efficiency mechanism should therefore be mindful of creating incentives for the access provider to exaggerate forecasts in one direction or another to increase the chance of cost over-recovery. Regulators in other industries and jurisdictions have proposed mechanisms which seek to reduce the gaming opportunities;⁷ however, it is unlikely that such opportunities can be completely removed from any efficiency mechanism that relies on forecasts.

As noted above, where the access provider is vertically integrated the value of the incentive mechanism may be dominated by the access provider's interests in the downstream markets.

4.6.2 Frequency of regulatory resets

VHA considers that in general a longer regulatory period is preferable to a shorter one. A longer regulatory period allows more time for the incentive arrangements adopted within the regulatory mechanism to deliver the desired outcomes. While we have noted some caution in adopting strong incentives in the regulatory design (above), if they are incorporated, it is appropriate that they be allowed to operate free of regulatory discretion which would inevitably reduce regulatory certainty.

⁷ See for example the "sliding scale matrix" implemented by Ofgem (available at <http://www.ofgem.gov.uk/Markets/RetMkts/Meirng/Metering/Documents1/8944-26504.pdf>) or the "menu regulation proposal" from Ofwat (available at http://www.ofwat.gov.uk/pricereview/pr09phase1/pap_con_menuregulation.pdf?download=Download#)

In addition, to provide increased regulatory certainty the period for regulatory resets may well extend beyond a single declaration period. Regulatory reset reviews should be conducted outside the declaration review process, say midway through a declaration period, to avoid conflating the questions of whether to regulate with the question of how to regulate.

4.6.3 Incentives to increase quality

VHA generally supports measures to create incentives for the access provider to increase service quality where strong incentives are created to reduce expenditure, but each measure would need to be assessed on its merits.

Like mechanisms to create incentives for more productive behaviour, incentives to increase quality of services are potentially subject to significant gaming opportunities. It is likely for this reason that regulators in other industries have been reluctant to put significant revenues 'at stake' to support improved quality of service.

There is significant complexity in designing a quality of service incentive which would need to be considered prior to the introduction of any mechanism.

4.7 Ensuring that the regulatory price is set efficiently

In addition to regulating the overall revenue requirement and the path of revenues to ensure adequate compensation over time, the regulatory framework will need to consider the structure of prices and the allocation of fixed and common costs between services. These issues cannot be left to the access provider, Telstra, because it is vertically integrated into downstream markets and will have incentives to distort pricing structures and cost allocation to favour its downstream retail arm.

4.7.1 Allocating costs to different services

Economic efficiency is served when the price of a service signals the opportunity cost to society from its use. In cases where a service is supplied using an asset which has no opportunity cost (say because it is sunk) then the efficient price for the service would not reflect the past cost of the asset at all. The efficient price for the service would reflect the 'forward-looking' costs of using the service.

While such pricing may be efficient it may not be sufficient to give the access provider a normal return on past investments. In other words, prices may need to exceed efficient levels in order to recover the fixed costs of past investments. A further complication for efficient pricing arises because a number of services are supplied using the same asset and many of the on-going costs are common to a number of services.

Economic theory tells us that the most efficient way to recover these fixed and common costs is through so-called Ramsey prices. Ramsey prices are calculated as a mark-up on the incremental costs of a service to recover the fixed costs. The mark-ups to be applied to each service are calculated to be those that minimise the distortion in consumption of all services whilst recovering the fixed costs. The calculation of Ramsey prices requires information regarding the sensitivity of demand to prices (price and cross-price elasticities).

Despite the economic theory, when regulators have allocated costs to individual services they have generally used accounting allocations of costs. These have generally taken the form of activity based cost allocations (eg, routing factors) and full-distributed allocations of common costs (eg, equi-proportionate mark-ups). The Commission has followed such an approach in pricing telecommunications services (that is, TSLRIC+).

In other industries, regulators including the Commission have allowed access providers flexibility in deciding their own allocations of costs between services. For example, rather than regulated the price of individual services, regulators have set a cap on the weighted average price of all services. A

weighted average price cap seeks to encourage the access provider to set prices which accord with the economic theory. If the weights are set correctly, a weighted average price cap will encourage the access provider⁸ to set prices consistent with Ramsey principles.

However, even when broader price caps are used it may be appropriate to impose constraints on individual prices. For example, to ensure individual prices are efficient it may be appropriate to impose a constraint that prices are within the bounds of incremental and stand-alone costs. A price which is less than incremental costs may encourage over-utilisation of the asset, whilst a price in excess of stand-alone costs may encourage inefficient bypass.

Individual price constraints may also be applied to smooth prices, that is, to avoid price shocks for access seekers and for end-users. Prices which are 'Ramsey efficient' may be very different to prevailing prices and may require significant transitional arrangements to smooth redistributions in cost recovery between users.

4.7.2 The problem of vertical integration in price setting

Ideally, the access provider would be given a significant amount of flexibility with cost allocations so that prices can be restructured over time to promote efficient use of the regulated network. However, because Telstra is vertically integrated into downstream markets, such price flexibility cannot be allowed without risking damage to competition in the downstream market.

Specifically, a vertically integrated operator such as Telstra would have the incentive to favour its downstream retail arm where it faces competition from access seekers. Even if Telstra was constrained in its overall prices for access services it will have an incentive to allocate costs to access services and in geographic areas in areas where it face more intense competition. If Telstra can raise the access price for services where it faces more competition it could discourage its competitors from competing vigorously, or worse foreclose its competitors from serving important customers damaging their ability to compete in the market as a whole.

The incentive to damage competition in the downstream market is likely to dominate the positive incentives created by the weighted average price cap. This is because the margin Telstra would earn by taking downstream sales from its rivals is likely to exceed the value of fewer sales to access seekers at the wholesale level.

4.7.3 Approaches to price setting

VHA 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.

Absent this vertically integrated structure there may be strong economic argument to support the use of some form of broader price cap mechanisms. In these circumstances, VHA would have given it's in principle support the use of a weighted average price cap mechanism in preference to a revenue cap. A weighted average price cap provides strong incentives to move prices to an efficient structure. It does this by allowing the access provider to earn higher than expected revenues if it can restructure its prices and sell more services.

⁸ The complications associated with a vertically integrated access provider are discussed in the following section.

However, whilst Telstra remains vertically integrated, it would be inappropriate to implement a weighted average price cap. The facts are that Telstra provides a range of regulated services on its network. Allowing a weighted average price cap which includes multiple regulated services would give Telstra an incentive to load costs onto the access services where it faces most competition in downstream markets.

Therefore, the Commission will need to continue to determine specific allocations of costs between regulated services. There are a range of approaches the Commission could use to allocate costs between regulated services. Historically, the Commission has applied an incremental cost concept to the allocation of costs. VHA generally supports the continued application of this principle.

5 Transition arrangements

In the absence of information regard the pricing approach, let alone the prices, the Commission might determine it is difficult to provide input regarding the structure or content of any transitional arrangements. Clearly, the larger the scale of the adjustment that is required the more powerful would be the argument for a transitional arrangement.

VHA would generally support an extensive transitional arrangement, of say 5 years, where the transitional exercise was primarily related to a restructuring of prices between services whilst maintaining the overall revenue requirement. Access seekers (and in turn end users) should generally be protected from any price shocks where they have made significant investments which rely on the services being supplied by the access provider.

If there is to be any transitional arrangement then it should not provide any windfall gain (or loss) to the access provider. That is, if prices are gradually reduced (increased) then the higher (lower) revenue resulting from that more gradual change in prices should be factored into future prices via an adjustment to the depreciation of the RAB.