



# DOMESTIC TRANSMISSION CAPACITY SERVICE: PRICING REVIEW

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Australian Competition and  
Consumer Commission

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## About VHA

Vodafone Hutchison Australia Pty Limited (**VHA**) is the third largest telecommunications company in Australia. Our products and services are marketed under both the Vodafone and '3' brands. We have two shareholders – Vodafone Group plc (**Vodafone**) and Hutchison Telecommunications (Australia) Pty Limited, whose ultimate majority shareholder is Hutchison Whampoa Limited (**Hutchison**) – each with a 50 per cent stake in VHA. Vodafone and Hutchison are at the forefront of the global communications industry and each continues to bring the benefits of their international experience to the Australian market.

# 1 Executive summary

- > Access to DTCS on reasonable terms is essential for ensuring that affordable, innovative services can be delivered to retail and business consumers across Australia. Strong growth in demand for mobile data services is putting pressure on Mobile Network Operators (**MNO**) to rapidly improve network capacity. VHA increasingly requires higher capacity transmission services, in addition to the transmission services we currently use.
- > We consider that the Fully Allocated Cost (**FAC**) approach put forward by the Commission as most likely to encourage economically efficient use of, and investment in, infrastructure used to supply the DTCS. However, the Commission should transition from the FAC approach toward implementation of the 'Building Block' approach over the longer term. An approach that locks-in and rolls-forward the Regulatory Asset Base (**RAB**) is likely to provide greater certainty for both access providers and access seekers, and provide a strong expectation of cost recovery, which is essential for encouraging efficient future investment in infrastructure.
- > The Commission must release indicative prices for the DTCS when it issues its Pricing Principles. The use of indicative prices for other declared services has been critical in promoting the long-term interest of end users. Indicative prices provide access seekers and access providers with business certainty, encourage efficient investment and promote competition in downstream markets.
- > The Commission should minimise differences in regulated prices for supply of the DTCS that are unrelated to costs. Where possible the Commission should endeavour to implement cost-based prices for similar types of services in different regions. Given differences in the underlying cost drivers, regulated prices should vary between different transmission service types (for example, between tail-end and inter-exchange transmission).
- > In the longer term, the Commission should grant wholesale-only access providers flexibility to structure and set prices provided on the condition that they not recover more than their anticipated cost-based, revenue requirement. Price flexibility would allow wholesale-only access provider to set its regulated prices in a manner that is consistent with promoting the efficient use of its infrastructure. Price flexibility should not be permitted on routes where the supplier(s) of the DTCS is vertically integrated and has significant market power in downstream markets.

## 2 Introduction

VHA welcomes the opportunity to comment on the Australian Competition and Consumer Commission's (**Commission**) discussion paper reviewing the pricing of the Domestic Transmission Capacity Service (**DTCS**). VHA supports the declaration of the DTCS as it provides an essential wholesale input into the provision of fixed and mobile services. Its use is particularly relevant for delivering services to regional and rural locations. However, we do not believe the pricing principles or transmission cost models previously released by the Commission for the DTCS provide access seekers with sufficient confidence to pursue arbitration as a means of resolving access disputes.

Evidence is emerging that the price of DTCS on some links may exceed the incremental cost of provision.<sup>1</sup> Despite this, access seekers have not been prepared to pursue access disputes through the Commission. The Commission should not construe the lack of access disputes as evidence for satisfactory outcomes in the market for the DTCS. In our view, lack of guidance from the Commission on pricing principles and other key aspects of the DTCS declaration may have contributed to lack of business certainty with respect to the arbitration process. For example, the Commission's recently proposed, and as yet unresolved, clarification to the scope of the DTCS definition provides evidence for the level of uncertainty faced by access seekers. Reform to the pricing principles is critical to improving the effectiveness of the DTCS declaration.

The Commission's consideration of different approaches for pricing the DTCS is a welcome step forward. We regard a clear, well-defined approach to pricing as critical to resolving the existing uncertainty over the declared DTCS. In our view, adoption and implementation of a transparent, cost-based pricing approach (including the release of indicative prices) will address some of the service complexity that has encumbered the functionality of the existing declaration. We agree with the Commission that the pricing approach must be flexible enough to operate under the current access regime (that is, Part XIC of the *Trade Practices Act 1974*) and the proposed regulatory regime as set out in the *Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Bill 2009 (Bill)*.

### 2.1 VHA's transmission capacity service requirements

Strong growth in demand for mobile data services is putting pressure on MNOs to rapidly improve network capacity. Over the past year customers using mobile broadband devices in Australia have grown by 128 per cent.<sup>2</sup> The ACMA reports that mobile wireless broadband accounts for 23 per cent of all internet subscribers and that it was the fastest growing broadband technology in 2008-09.<sup>3</sup> We expect the trend to continue, with demand for mobile data services from both mobile broadband devices and access to the Internet through mobile telephony devices expected to grow rapidly over the next five years.

The upgrade by MNOs to Long Term Evolution (**LTE**), a 4G technology, is likely to begin during the term of the existing declaration. LTE will require higher capacity transmission services than those currently used for mobile services. Access to the DTCS will ensure that competitive services can be delivered to consumers in places where it might otherwise be uneconomic to do so.

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<sup>1</sup> See for example: McKinsey & Co and KPMG 2010, Implementation study for the National Broadband Network, prepared for the Department of Broadband, Communications and the Digital Economy, Volume 2, 5 March, pp326-328.

<sup>2</sup> VHA estimate based on internal data and Telstra and Optus annual reports for 2009.

<sup>3</sup> Australian Communications and Media Authority (**ACMA**) and Australian Competition and Consumer Commission 2010, *Communications infrastructure and service availability in Australia 2009*, p36.

[c-i-c]

## 2.2 Legislative and regulatory background

The Commission defines the DTCS as a service that can be used for the carriage of certain communications from one transmission point to another transmission point via network interfaces at a designated rate on a permanent basis by means of guided and/or unguided electromagnetic energy. In March 2009, the Commission issued its *Final Report on reviewing the declaration of the domestic transmission capacity service*. The Commission determined that extending the declaration of the DTCS until 31 March 2014 on routes or in the geographic areas where there was insufficient competition was in the Long-Term Interests of End-users (LTIE) for the following reasons. First, retaining declaration on those routes or in those areas was important to ensure that access seekers continued to access the DTCS on reasonable terms so as to compete effectively in downstream markets. Second, declaration ensured that access seekers and other parties were able to build a customer base should they decide to undertake their own efficient infrastructure investment to supply transmission services to themselves. On this basis, declaration promoted efficient investment in alternative infrastructure and was therefore in the LTIE.

The Commission identifies four types of DTCS, including: inter-capital transmission, 'other' transmission (including capital-regional routes), inter-exchange transmission and tail-end transmission. The competitive dynamics for each type of transmission capacity service are different. For example, in 2004, the Commission decided that inter-capital transmission routes were competitive, and therefore excluded from declaration transmission between Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra. By comparison, the Commission did not regard the market for tail-end transmission as competitive due to the barriers to entry created by the incumbent's sunk costs.

The provision of transmission capacity can be achieved via a number of technologies including:

- > terrestrial optical fibre cables;
- > satellite;
- > digital microwave; and
- > submarine cable.

The various technologies are not necessarily substitutes. The suitability of particular technologies is highly dependent on the capacity required, topology and the length of the transmission link. For example, microwave technology is useful for short distance, low capacity situations where 'line of sight' is available. In general, we regard optical fibre as the preferred transmission medium due to its cost-effectiveness for capacity-intensive service requirements. Given the characteristics of the different technologies, providers of transmission services using satellite, digital microwave or submarine cable do not sufficiently constrain providers of transmission services using optical fibre.

In its Final Decision on Telstra's DTCS exemption applications in November 2008 (the **Exemption Decision**), the Commission indicated that, as a matter of principle, where there is empirical evidence of providers other than Telstra building alternative transmission networks, the existence of actual or potential competitors in the relevant geographic and product market is likely to mean that the particular transmission market is no longer a bottleneck. More specifically, the Commission considered that evidence of two DTCS providers using optical fibre, in addition to Telstra, was sufficient to establish the existence of effective competition or contestability. Using this principle, the Commission went on to determine the routes in respect of which there was sufficient competition and therefore continued regulation was not required.

## Support for declaration of the DTCS

We continue to support declaration of the DTCS supplied by optical fibre in such markets, as it is in the LTIE. The specific regulatory concern with respect to the DTCS supplied by optical fibre is that, in many parts of Australia, the infrastructure required to provide the service is characterised by high barriers to entry and, in most instances, the main supplier of the declared DTCS, Telstra, is a vertically-integrated infrastructure owner who could extend its market power into (competitive) downstream markets. The primary barriers to entry associated with the DTCS are the incumbent's sunk cost of investment and the excess capacity on some routes.<sup>4</sup> We do not believe that sufficient incentives exist for new entry in most of the markets where the DTCS is currently declared.

Other technologies, such as microwave, are generally cheaper to roll-out than optical fibre and do not exhibit the natural monopoly characteristics of optical fibre. However, given the technical characteristics of each technology, providers of transmission services using satellite, digital microwave or submarine cable do not sufficiently constrain providers of the DTCS using optical fibre.

We acknowledge that there is functional competition in some DTCS markets. We consider that regulatory intervention in well-functioning markets should be minimised and we are supportive of the Commission's recent removal of regulation through the class exemption it issued for several DTCS markets and its subsequent decision to incorporate exemptions in the service description.<sup>5</sup>

## Comments on the existing DTCS pricing principles

The Commission's Final Exemption Decision suggests that its (pricing) approach to an access dispute over the DTCS would be considered link-by-link, service-by-service, creating the potential for significant variation between different access dispute outcomes. In our view, there are four aspects affecting the supply of DTCS: capacity; technology; topology; and competition. However, these aspects are not unique to the declared DTCS. The cost of fixed line services is also provided over different geographic areas (for example, 16 geotypes were used in the Analysys Mason fixed line cost model). Technological change is a feature of the mobile industry with, for instance, GSM (2G) networks offering theoretically inferior performance to W-CDMA (3G) networks. Yet, declared fixed and mobile services such as the Unconditioned Local Loop Service (**ULLS**) and the Mobile Terminating Access Services (**MTAS**) are not characterised by the same service description variation permitted for the DTCS. The Commission's approach to declared services such as the ULLS and the MTAS acknowledges geographic and technological differences, but simplifies the service description such that prices are geographically harmonised (albeit within four bands for ULLS) despite significant cost differences between, for instance, mobile network deployment in metropolitan and regional areas.

Declaration means that access providers have an obligation to supply access seekers with the declared service. In the first instance, the access regime favours commercial negotiations on the terms and conditions of supply. However, if the access provider and the access seeker cannot agree to the terms and conditions of supply then either party can seek arbitration of the dispute by the Commission. The Commission typically issues Pricing Principles to indicate the approach it will apply when considering an access dispute or assessing an access undertaking.<sup>6</sup>

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<sup>4</sup> Where routes are reaching capacity the respective DTCS market may become contestable due to the additional infrastructure investment required, but contestability might be affected by a number of factors and should be considered on a route-by-route basis.

<sup>5</sup> ACCC2009, *Final Report on reviewing the declaration of the domestic transmission capacity service*, March.

<sup>6</sup> Pricing Principles are not binding on the Commission.

While the Commission has previously issued Pricing Principles for the DTCS,<sup>7</sup> it has not issued indicative prices. Indicative prices provide ‘useful certainty’ to relevant parties regarding the Commission’s view on appropriate prices under its preferred pricing approach.<sup>8</sup> In this manner, the Commission’s consideration of the DTCS has differed from its consideration of Fixed Line Services or the MTAS, where the Commission has issued indicative prices in addition to issuing pricing principles.<sup>9</sup> The lack of indicative prices, combined with ambiguity over the breadth of the service definition,<sup>10</sup> may have contributed to regulatory uncertainty that deterred access seekers from pursuing access disputes through the Commission. However, the Commission should not interpret a lack of access disputes as evidence for allocative efficiency in access prices for the supply of the DTCS. VHA’s experience with acquiring leased line transmission services suggests that access prices are likely to be above the efficient, cost-based price of service provision in areas of limited competition.

The Commission must release indicative prices for the DTCS when it issues its Pricing Principles. Indicative prices are essential for promoting the long-term interest of end users. They provide access seekers (and access providers) with business certainty and thereby, ensure the economically efficient use of, and investment in, the infrastructure used to supply the DTCS. Moreover, price transparency is an essential element of competitive markets. Lack of price transparency is an indicator of market power. In the absence of indicative prices, information asymmetries regarding the efficient cost of supplying the DTCS are likely to favour the access provider to the potential detriment of the access seeker. For example, the lack of indicative prices may deter access seekers from pursuing disputes through the Commission.

### External factors likely to impact the regulatory context

The review of the DTCS Pricing Principles is occurring amidst a period of unprecedented change in Australia’s telecommunications industry. The non-binding Financial Heads of Agreement between Telstra and NBN Co could lead to greater vertical separation of DTCS from downstream retail services than was previously the case.<sup>11</sup> A number of other reforms and government programs could also mean that the DTCS is more likely to be supplied on a wholesale-only basis in the future. It is imperative that the Commission’s reforms to the DTCS Pricing Principles provide sufficient flexibility to govern access to the DTCS both now and in the future.

### *Proposed reforms to the access regime*

We support the Commission’s approach to determining an appropriate pricing methodology for the DTCS as soon as possible. We agree that the pricing methodology must be flexible under the existing regulatory framework or under the proposed reforms set out in the *Telecommunications Legislative Amendments (Competition and Consumer Safeguards) Bill 2009 (Bill)*. The Bill, which is currently before the Parliament, addresses the fundamental problems associated with the structure of Australia’s telecommunications market and the regulatory framework set out in Part XIC (and Part XIB) of the *Trade Practices Act 1974 (TPA)*. If the proposed legislation is passed by Parliament, the existing ‘negotiate-arbitrate’ model would be

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<sup>7</sup> ACCC 2004, *Pricing Principles for Declared Transmission Capacity Services*, Final Report, September.

<sup>8</sup> ACCC 2006, *Local services review and strategic review of the regulation of fixed network services*, Summary of draft indicative prices, 28 July, p2.

<sup>9</sup> For example: ACCC 2006, *Pricing principles and indicative prices: Local carriage service, wholesale line rental and PSTN originating and terminating access services*, Final determination and explanatory statement, 29 November; and ACCC 2007, *MTAS Pricing Principles Determination 1 July 2007 to 31 December 2008*, Report, November.

<sup>10</sup> ACCC 2009, *Domestic Transmission Capacity Service*, Discussion Paper, November.

<sup>11</sup> Telstra Corporation Limited 2010, *Telstra signs Financial Heads of Agreement on NBN*, Media release, 20 June; and

The Hon. Kevin Rudd, Senator the Hon Lindsay Tanner and Senator the Hon Stephen Conroy, *Agreement between NBN Co and Telstra on the rollout of the National Broadband Network*, Joint media release, 20 June.

replaced with a more streamline access regime that grants the Commission the power to set access prices, or set out a method for ascertaining prices, for declared services.

The proposed reforms to the access regime provide additional reason for the Commission to adopt indicative prices. If the Bill is passed, the Commission's Pricing Principles must be capable of setting access prices (or a method for ascertaining prices) for declared services. The Commission's decision on the degree of price flexibility granted to the access provider must depend on the degree of vertical integration. Where the DTCS applies to a vertically integrated provider that also competes in downstream retail markets (for example, Telstra), then the Commission should provide indicative prices (or set prices if the proposed reforms are implemented). Where the DTCS is provided by a wholesale-only provider then the Commission should, at a minimum, set out a method for ascertaining prices for declared services.

### *Regional Backbone Blackspots Program*

We agree with the Commission that transmission links constructed as part of the Australian Government's *Regional Backbone Blackspots Program* (RBBP) may fall within the scope of the DTCS declaration. The Government's program focuses investment on improving the supply of backbone transmission links in areas that lack competitive backbone infrastructure. The RBBP may not lead to sufficient competition. To that end, the RBBP will have an effect on the appropriate pricing methodology of the DTCS.

### *The National Broadband Network*

The Implementation Study for the National Broadband Network (**Implementation Study**) states that "unavailability of competitively priced backhaul is a bottleneck to providing affordable, high-speed broadband services in many parts of Australia today".<sup>12</sup> The Implementation Study acknowledges that access to affordable backhaul capacity is an essential part of delivering retail broadband services. It does not matter whether the "last mile" delivery of broadband services uses fixed or wireless technology. If recommendations in the Implementation Study are adopted by the Government then NBN Co may construct a transit backhaul network covering a total distance of up to 70 000 kilometres. It further recommends these links should extend to points where there are "at least two independent backhaul fibre connections to the national backbone are available".<sup>13</sup>

Moreover, if the recommendations in the Implementation Study relating to transit backhaul are adopted then NBN Co may supply services that fall within the scope of the DTCS declaration. For instance, NBN Co would be likely to supply optical fibre services on links with fewer than three market participants. In general, VHA considers that a well-functioning, competitive market typically requires at least three suppliers. We note that our view is similar to the framework used by the Commission in its consideration of Telstra's DTCS exemption.<sup>14</sup> If this framework were applied in the context of the NBN, then the supply of the DTCS on certain routes would only be exempt from declaration in circumstances where two infrastructure owners other than, in this instance NBN Co, supply services that provide competition or the likelihood of competition that is likely to exert sufficient constraint on NBN Co. We note that NBN Co's potential supply of the DTCS in the access layer, including the provision of fibre-to-the-base station, is highly unlikely to meet the exemption criteria outlined above.

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<sup>12</sup> McKinsey & Co and KPMG 2010, *Implementation Study for the National Broadband Network*, prepared for the Department of Broadband, Communications and the Digital Economy, Volume 2, 5 March, p323.

<sup>13</sup> McKinsey & Co and KPMG 2010, *Implementation Study for the National Broadband Network*, prepared for the Department of Broadband, Communications and the Digital Economy, Volume 2, 5 March, p330.

<sup>14</sup> ACCC 2008, *Telstra's Domestic Transmission Capacity Service Exemption Applications*, Final decision, Public version, November.

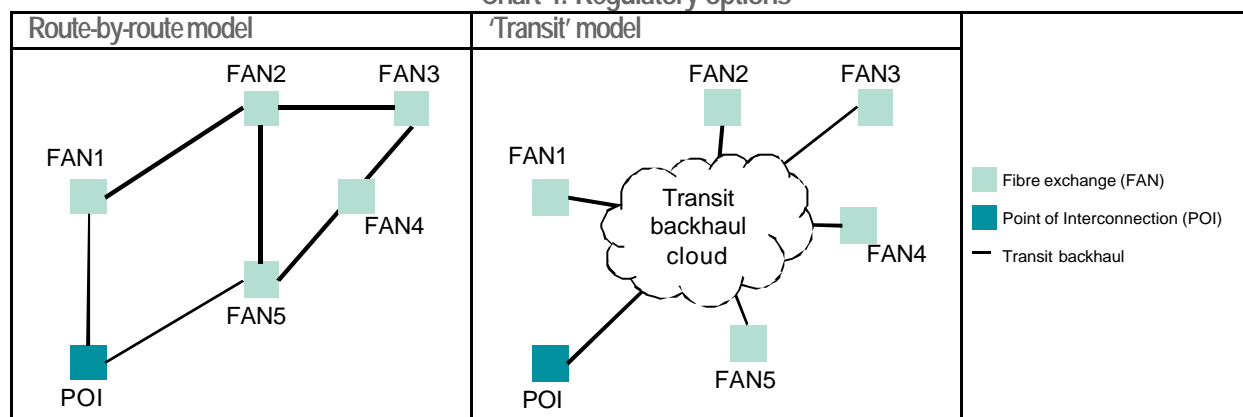


## 2.3 Transmission products and network structure

Moving forward, we anticipate the growing demand for mobile data will mean that we increasingly require high capacity, carrier grade transmission services on some routes. However, we expect to still have substantial demand for 2Mbps terrestrial transmission links in the mobile access network and parts of the aggregation network until such time as VHA is required to deploy or acquire higher capacity fibre solutions or NBN Co deploys fibre-to-the-base station.<sup>15</sup> Despite the lower capacity requirements, barriers to entry on such links nevertheless remain high and are primarily associated with non-technology-related costs such as ducts and trenches. Therefore, VHA urges the Commission to maintain its flexible, technology neutral approach to regulation of the DTCS.

There are several options the Commission could use to cost and set regulatory prices for the supply of the declared DTCS. For instance, it could use a ring structure, point-to-point or, for instance, the 'transit' model proposed in the *Implementation Study for the National Broadband Network* (see Chart 1). In our view, the Commission should seek to maximise flexibility for access seekers and minimise the regulatory footprint for access providers. For example, access seekers should have the option to 'patchwork' their own protected service (that is, redundancy) requirement or, in certain circumstances, determine that a protected service is not required. Therefore, where the Commission has identified that links have sufficient competition then such links should not be granted an exemption from the declaration and should not be subject to price regulation. Therefore, we regard point-to-point services as the most appropriate for costing and setting regulatory prices.

Chart 1: Regulatory options



Source: Based on McKinsey & Co. and KPMG (2010).

## 3 Issues with the DTCS market

### 3.1 Large sunk costs

The market for the provision of the DTCS is characterised by large sunk costs. Infrastructure is regarded as 'sunk' if it cannot easily be redeployed for another use; that is, the difference between the original cost of the investment and the salvageable value of the investment is significant. We agree with

<sup>15</sup> We note the Government has not yet endorsed the *Implementation Study for the National Broadband Network's* recommendation that NBN Co be required to "deploy fibre topologies that support the ongoing needs of multiple stakeholders including... mobile stations" For further details see McKinsey & Co and KPMG 2010, *Implementation Study for the National Broadband Network*, prepared for the Department of Broadband, Communications and the Digital Economy, March, pp. 191, 492.

Frontier Economics' observation that while sunk costs: "can effectively be ignored in pricing decisions relating to use of existing assets, no firm will ever 'sink' costs unless they have the expectation that they will be able to earn a return on these sunk investments".<sup>16</sup> The Commission must be mindful of the chilling effect on future investments that the future pricing principles would create from any 'signal' that places too low a value on assets once they are sunk.

The issue of sunk costs is particular relevant determining suitable pricing principles for the declared DTCS. The infrastructure used to supply the DTCS is expected to have a long life and should be characterised as generating economies of scale (that is, the average total cost falls as the quantity of transmission capacity supplied increase). That said, transmission services are characterised by capacity limits, which leads to lumpy investments in incremental capacity (and which may provide an opportunity for entry). Nevertheless, where existing providers have sufficient spare capacity on their respective transmission routes, large sunk costs will typically indicate that barriers to entry are high.

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 any regulatory pricing framework 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.<sup>17</sup>

### 3.2 Insufficient competition

While competition has improved on many of the major transmission routes, for instance inter-capital links, there remains a lack of competition on many capital-regional, inter-regional and tail-end transmission links. The lack of competition on mid-length intracity routes was illustrated in the Implementation Study for the National Broadband Network prepared by McKinsey & Co and KPMG (see Chart 2). The Implementation Study observed that "there is reason to believe today's backhaul bottlenecks will persist without direct intervention by NBN Co".<sup>18</sup> Regardless of whether NBN Co eventually ends up supplying the DTCS, the Commission must acknowledge that many DTCS routes constitute an enduring bottleneck.

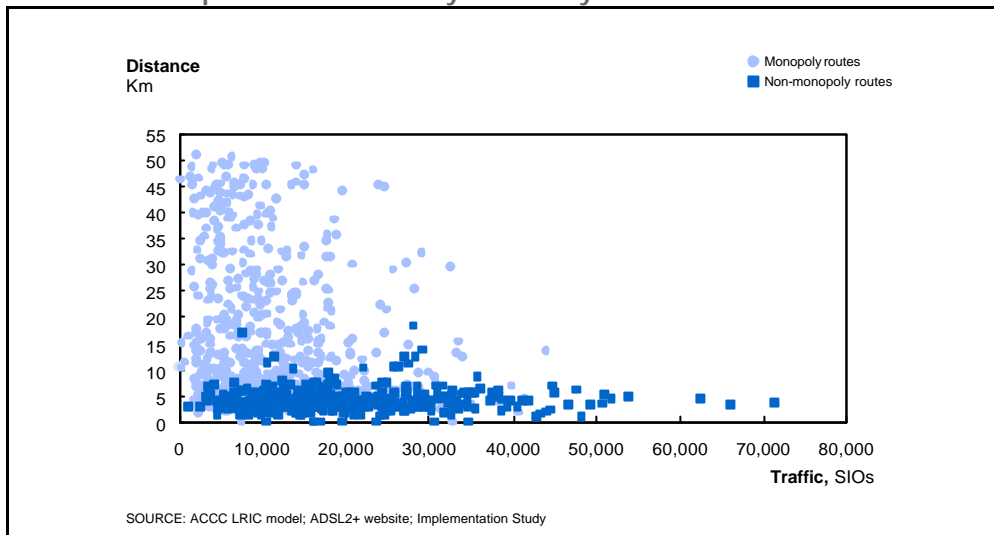
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<sup>16</sup> Frontier Economics 2009, *Economics of transmission capacity services*, Report prepared for the Australian Competition and Consumer Commission, June 2009.

<sup>17</sup> We note that it may not be possible to develop a meaningful estimate of depreciation for assets such as ducts and trenches. To deal with this issue, some regulators (for example, Ofwat in the UK) have introduced a system of 'renewals accounting'. Under the approach, depreciation charges are replaced by projected capital renewal expenditure. The use of 'renewals accounting' is based on a premise that it is inappropriate for regulators to estimate asset costs for physical infrastructure that may never be replaced or, more precisely, where the useful life of assets is uncertain. Instead, it may be more appropriate to determine regulatory prices based on the cost of maintaining assets in good working order through renewing or repairing assets.

<sup>18</sup> McKinsey & Co and KPMG 2010, *Implementation Study for the National Broadband Network*, prepared for the Department of Broadband, Communications and the Digital Economy, March, p327.

Chart 2: Competitiveness of intracity community backhaul routes less than 50km



Source: McKinsey & Co and KPMG 2010, *Implementation Study for the National Broadband Network*, prepared for the Department of Broadband, Communications and the Digital Economy, March, p328.

The lack of competition for DTCS in many geographic markets has a significant impact on the cost of the DTCS as a wholesale input for access seekers. [c-i-c]

The primary reasons for the lack of competition are the barriers to entry created by the incumbent's sunk investment in transmission infrastructure. Most of the infrastructure-related costs associated with the deployment of optical fibre transmission relate to the ducts and trenches required to lay the service. Once a decision has been made to deploy optical fibre infrastructure the incremental cost associated with deploying additional capacity is, by comparison, relatively minor. The existence of excess capacity may provide a (potential) deterrent for any other party seeking to deploy fibre on the same route.

Access seekers (or third parties) could, in theory, build their own optical fibre transmission infrastructure. The build decision for potential investors is predicated on whether it can sell or, in the case of vertically integrated investors, use sufficient capacity to offset the cost of deploying the infrastructure. Clearly, such investment has been justified on inter-capital links. However, given that many carriers have chosen not to deploy extensive inter-regional or tail-end transmission networks indicates the cost of doing so is potentially above the cost of accessing the incumbent's infrastructure.

### 3.3 Capacity constraints

The potential for capacity constraints on transmission links affects the structure of competition the supply of the DTCS. Previously, we observed the cost of incremental fibre capacity is moderate compared to the total cost of building a fibre network. While this remains true, the exponential data growth in recent years could mean that some transmission links may be characterised by congestion. The Commission must consider the potential impact of congestion on its regulatory framework. The most likely cause of sustained congestion is capacity constraints on the infrastructure used to supply the DTCS. Capacity constraints can have adverse impact on economic efficiency. For example, Kreps and Scheinkman (1983) indicate that capacity

constraints may mean that the competitive outcome will tend toward a Cournot equilibrium, whereby the suppliers of the DTCS would be able to exert a degree of market power to the detriment of access seekers.<sup>19</sup>

We regard that at least three suppliers of the DTCS using optical fibre are necessary to generate a well-functioning, competitive market. That said, where a market only has a few competitors the Commission ought to have regard the market share of each competitor, using measures such as the Herfindahl-Hirschman Index, and to structural features, such as barriers to entry or capacity constraints, to assess the depth and sustainability of competition. Given the nature of the DTCS, we anticipate that the Commission may need to consider these issues on a link-by-link basis.

### 3.4 Opportunities for strategic pricing

The strategic incentives for gaming (on price and/or access) to essential facilities are widely known. Laffont and Tirole (2000) note: “the owner of an essential facility may have an incentive to monopolize complementary of downstream segments as well”.<sup>20</sup> In the case of the DTCS, the opportunities for strategic pricing are prevalent due to the existing vertical integration of several transmission infrastructure owners. Even if a vertically integrated operator, such as Telstra, was constrained by price regulation for the DTCS, it would still have an incentive to allocate costs to access services and in the geographic 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.

Access prices should be equivalent for all access seekers including the downstream operations of a vertically-integrated access provider. Competition in downstream markets should be based on equivalent costs and quality of service to essential facilities, particularly those that constitute an enduring bottleneck. In the absence of appropriate competition safeguards, non-equivalence of access terms and conditions is likely to adversely impact efficient downstream competition (particularly, in circumstances where an access provider provides preferential pricing to its own vertically integrated operations).

## 4 Appropriate pricing methodologies

Welfare maximisation is achieved when the price of a service signals the opportunity cost to society from its use (in economics, this is typically referred to as allocative efficiency). However, in circumstances where there are large sunk costs it may not be desirable to pursue allocative efficiency because the price would not be sufficient for the access provider to receive a normal return on past investments. For regulated industries, pricing methodologies that fail to allow for an adequate return on past investment are likely to create a disincentive for future investment. Therefore, the Commission should pursue dynamic efficiency, balancing the desire for allocative efficiency with appropriate investment incentives by ensuring that access providers can recover the long-run average total cost of their declared services.

Previously, in the context of fixed line services, the Commission believed that there was a potential for infrastructure-based competition and, as such, telecommunications infrastructure did not constitute an enduring bottleneck. The Commission thought that “the least cost technology would be rapidly and continually changing, such that access seekers would, over time, be able to efficiently deploy their own infrastructure to compete with the

<sup>19</sup> Kreps, D and Scheinkman, J (1983), ‘Quantity pre-commitment and Bertrand competition yield Cournot outcomes’, *Bell Journal of Economics*, vol 14, pp. 326-337. (Also see Tirole, J (1988), *The theory of industrial organization*, The MIT Press, Hong Kong).

<sup>20</sup> Laffont, J and Tirole, J (2000), *Competition in Telecommunications*, The MIT Press, USA, p98.

incumbent's and provide services in downstream retail markets".<sup>21</sup> The Commission's preferred approach was to "prevent inefficient duplication of infrastructure, and promoting infrastructure-based competition where efficient (which has generally been referred to as promoting efficient build or buy signals)".<sup>22</sup>

In general, we agree with the promotion of efficient build/buy signals. However, we do not believe the Commission's previous approach to pricing principles provided appropriate build/buy signals. Its approach was based on a misplaced assumption about that the costs of replacing components of the telecommunications network – for example, ducts and pipes, and trenching – would decrease. In fact, these costs have increased. As a consequence, there is a significant risk that the access provider, in this case Telstra, may have been permitted to over-recover the costs associated with building its fixed line network. However, even if the converse were true and the Commission's assumption that costs for fixed line services would decrease proved correct, it is unclear that the previous approach would have created the appropriate build/buy signals envisaged by the Commission.

The Commission's previous approach, which involved continually re-valuing existing sunk assets based on their optimised replacement cost, would effectively lower the access price in a manner that might replicate a competitive market outcome. The outcome is achieved without the corresponding investment in the more efficient technology occurring. As a consequence, a prospective investors "build" decision would become less attractive, which was the Commission's intention, and the access seeker would subsequently "buy" from the incumbent. The Commission thought "that valuing the sunk assets at their actual/historic cost would encourage access seekers to build their own infrastructure, when it would actually be more efficient for them to buy access to the existing infrastructure".<sup>23</sup> Such arguments rest on an assumption that it is socially optimal for the Commission not to promote "inefficient bypass". However, arguably the access provider already has an incentive to avoid inefficient bypass and this should not, therefore, be the primary focus of the Commission's pricing principles.

In our view, the Commission should not prematurely provide a disincentive to potential investors in infrastructure associated with declared services from making investments infrastructure for declared services. Through time, such incentives mean the under-investment in next generation technologies would become pronounced as the access seeker would not have an incentive to "build" and the access provider would not have an incentive to upgrade. We note that such a decision is explicitly at odds with the Commission's regard for promoting economically efficient investment in infrastructure.

#### 4.1 Addressing cost allocation challenges

Transmission services are provided across competitive, contestable and uncompetitive routes. The latter are clearly declared services and should fall within the scope of the DTCS declaration. While contestable routes offer the potential for competition, the Commission should focus on whether routes are contested rather than whether they are contestable. Therefore, contestable routes should also fall within the scope of the DTCS declaration. Routes should only be regarded as competitive if the Commission deems there is sufficient and sustainable competition. We agree with the Commission's observation that efficient costs must be allocated among these routes. The Commission must be mindful that the pricing principles it implements do not lead to cross-subsidisation of undeclared services by declared services or vice versa.

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<sup>21</sup> ACCC (2009), *National Broadband Network: Regulatory reform for the 21<sup>st</sup> century*, Submission to the Department of Broadband, Communications and the Digital Economy, p115.

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

The Commission should group transmission services with similar cost characteristics (for example, the supply of tail-end DTCS using optical fibre). Subsequently, cost and pricing structures should be assessed across the basket of services within the specified group. If, as the Commission states, the “competitive conditions of tail-end and non-metropolitan inter-exchange transmission are fundamentally different from those of inter-capital and capital-regional transmission services” then the Commission should treat these as different baskets of services, with separate cost and pricing structures.<sup>24</sup> Where possible, the Commission should avoid over-complication of the declared DTCS by ascribing too much weight to geographic or technological differences.

The Commission must determine an appropriate means for allocating assets and infrastructure costs across shared across routes. In our view, the only feasible approach is a register of assets required to deliver declared transmission services. The Commission must further determine an allocation methodology for joint and common costs, including in instances where infrastructure is common to both declared and undeclared services. Ideally, the allocation methodology should be demand-weighted but in practice accounting cost allocation methodologies (for example, activity-based or an equi-proportional mark-up) may prove more practical. Accounting cost allocation may create moderate distortions from cross-subsidisation, but it is less susceptible to regulatory gaming. The ultimate choice of methodology will depend on the information available to the Commission.

The Commission should determine pricing structures based on acquisition of individual routes. In our view, regulatory cost structures that seek to price ring structures, or some other network design, rather than point-to-point are likely to create regulatory challenges for the Commission. Specifically, such approaches may contain a mix of competitive and uncompetitive routes. While such problems may arise on some point-to-point transmission links, we believe this is less likely to be a problem. Pricing structures for individual routes are more likely to provide flexibility for access seekers to patchwork its redundancy requirements or to develop innovative transit backhaul options. Innovation and investment in transmission services requires the Commission to minimise its regulatory footprint to areas of insufficient competition. That said, the pricing structure should explicitly include an option for access seekers to, where possible, request a protected service.

## 4.2 A structure for setting transmission prices

A detailed structure for setting prices is only likely to be required in circumstances where the supplier of the DTCS is vertically integrated (or where an initial pricing structure is required following the implementation of indicative prices). The Commission's structure for setting transmission prices should reflect the primary cost drivers for supply of the DTCS. We anticipate the structure for setting prices will comprise both fixed and variable costs. VHA regards technology, capacity and distance as the primary variable cost drivers for transmission services. In terms of distance-based charges these should reflect the actual distance as such prices reflect the underlying costs of cables, ducts and trenches. We regard a fixed cost-based connection charge as appropriate for the supply of DTCS. Currently, the degree of competition on transmission links acts as a significant driver for wholesale costs to the access seeker.

The Commission should minimise differences in regulated prices for supply of the DTCS that are unrelated to costs. Where possible the Commission should endeavour to implement geographically averaging, setting the same cost-based prices for similar types of services supplied in different regions. For example, tail-end transmission services should be similarly priced in metropolitan and regional areas. However, given differences in underlying cost drivers, regulated prices should vary between different transmission service types (for example, between tail-end and inter-exchange transmission). We would further anticipate cost-based differences in pricing for inter-exchange links and on different capital-regional links.

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<sup>24</sup> ACCC (2010), *Domestic Transmission Capacity Services: Pricing Review*, Discussion Paper, April, p11.

### 4.3 Cost-based pricing methodologies

The Commission has outlined four cost-based approaches to determine the revenue requirement, and subsequently indicative prices, for the DTCS:

- > bottom-up forward-looking long-run incremental cost
- > top-down forward-looking long-run incremental cost
- > fully allocated costs (FAC); and
- > benchmarking of prices – international and domestic.

The Commission is considering a different cost-based approach to determine pricing principles for fixed line services.<sup>25</sup> The so-called ‘Building Block’ approach contains elements of a FAC approach to determine the appropriate asset base and the allocation of joint and common costs. In our view, the ‘Building Block’ approach should be considered with respect to supply of the DTCS.

The bottom-up forward-looking long-run incremental cost approach has a certain theoretical appeal, which has led to its widespread use in telecommunications by both the Commission and other international regulators. Properly applied, it remains a valid approach for declared services that require two-way access pricing such as MTAS. However, the bottom-up cost modelling approach in its manifestation as Total Service Long-Run Incremental plus joint and common costs (**TSLRIC+**) has not delivered satisfactory outcomes in the regulation of fixed line services.<sup>26</sup> Arguably, the TSLRIC+ approach has also failed to deliver satisfactory regulatory outcomes for the DTCS. The Gibson Quai AAS cost model for the DTCS, which is built on TSLRIC+ principles, has not provided access seekers with sufficient certainty on how it might be applied to an arbitration process. [c-i-c]. We further note the bottom-up cost modelling is likely to require a degree of network optimisation that could lead to significant over- or under-recovery of costs.<sup>27</sup> A bottom-up cost model is better used to validate whether transmission investments by access providers are prudent, to ensure that only prudently incurred capital expenditure is rolled into the RAB.

The Commission should not use benchmarks to set indicative prices. We do not consider that a benchmarking approach is likely to withstand proper regulatory scrutiny. Benchmark prices provide useful context, but significant variations between inter- and intra-national characteristics with respect to technology, capacity, topology, geography and the degree of competition, ultimately reduces the effectiveness of this approach.

#### **‘Building block’ approach should not be dismissed**

The ‘Building block’ approach locks-in an opening RAB and rolls it forward with adjustments for the disposal of assets and prudently incurred capital expenditure. Under the approach, the access provider is then permitted a return of capital (that is, depreciation), a return on capital and a return on working capital (based on the weighted average cost of capital, or WACC), and recovery of efficiently incurred operating expenditure (see Chart 4). In our view, the Commission should consider a similar approach the supply of the DTCS.

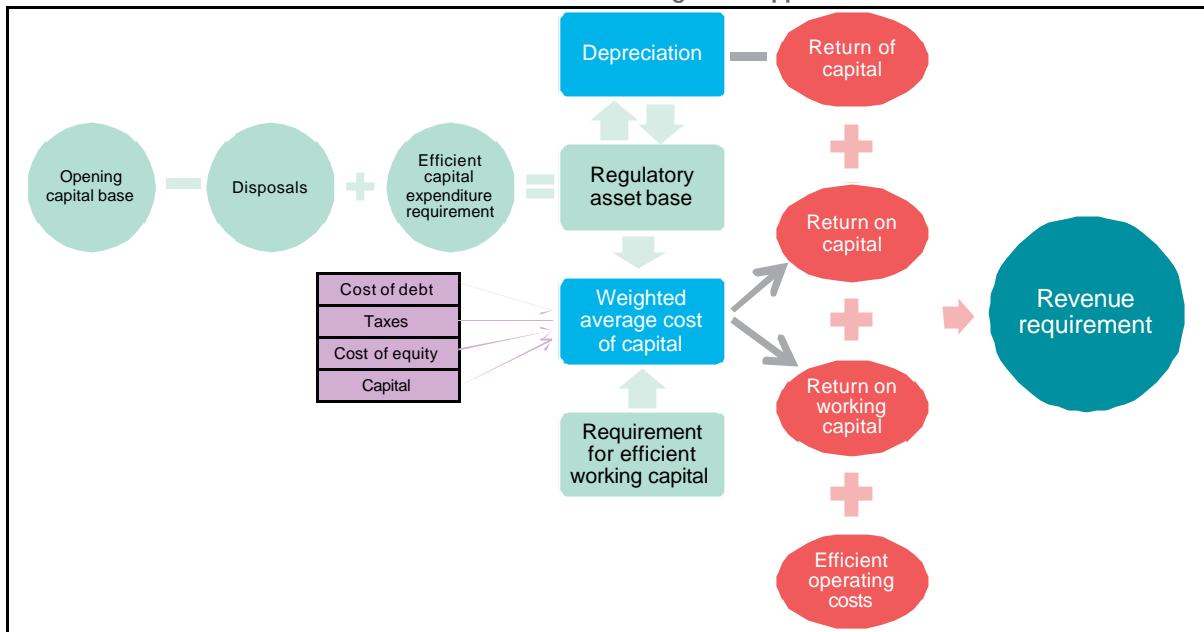
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<sup>25</sup> ACCC 2009, *Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services*, Discussion paper, December.

<sup>26</sup> For further details see ACCC 2009, *Review of 1997 Guide to Telecommunications Access Pricing Principles for Fixed Line Services*, Discussion paper, December.

<sup>27</sup> Given regulatory information asymmetries, the design of a mechanism which allows some risk of under- or over-recovery can provide desirable incentives for the access provider to incur costs efficiently. However, the scope for under- or over-recovery of costs should be moderate to avoid significant distortions to the decision-making process for investment.

Chart 4: Overview of the 'Building Block' approach<sup>28</sup>



Source: VHA

The 'Building Block' approach has some desirable characteristics that are likely to make it more suitable for application to the DTCS. Specifically, it overcomes the problems associated with the complex and frequent revaluations of assets that are typically associated with forward-looking cost models. Using forward-looking cost models for enduring bottlenecks increases regulatory risk without necessarily providing any offsetting benefit from improved economic efficiency. By contrast, an approach that locks-in and rolls-forward the RAB is likely to provide greater certainty for both access providers and access seekers. The approach creates a strong expectation of cost recovery, which is essential for encouraging efficient investment in infrastructure.

We are not opposed to a "Building Block" approach that permits periodic revaluations of the RAB on the condition that the principle of Financial Capital Maintenance (FCM) is also adopted. FCM refers to the fact that the initial 'financial capital' is maintained through time. In technical terms, FCM requires that the Net Present Value (NPV) of any expected compensation for the access provider should be zero (NPV=0) factoring in the initial value of the asset and a discount rate equal to their cost of capital. That is, the present value of compensation over time net of the initial costing of the asset is equal to zero (for an asset with an initial costing of \$100, the required level of future revenues must be equal to \$100 when discounted to the timing of the initial costing).

The Commission's approach to pricing should emphasise appropriate recovery of the prudently incurred infrastructure costs associated with the supply of the DTCS. The prices it sets should be maximum prices and competitive entry should not be actively discouraged by artificial (and somewhat arbitrary) consideration of build/buy signals. In our view, the Commission should adopt utility-style pricing based on the RAB approach for the DTCS

<sup>28</sup> The 'Building Block' approach has well-established regulatory incentives to, for instance, encourage efficient capital expenditure forecasts by access providers. For example, in the UK the "sliding scale matrix" has been implemented by Ofgem (available at <http://www.ofgem.gov.uk/Markets/RetMkts/Metng/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#](http://www.ofwat.gov.uk/pricereview/pr09phase1/pap_con_menuregulation.pdf?download=Download#)).



regardless of the prospects of entry. To the extent the Commission remains concerned about the potential for inefficient bypass, then these factors should be address through adjustments to the depreciation schedule associated with the RAB.

Finally, the 'Building Block' approach allows the Commission a mechanism to adjust the revenue requirement if transmission routes are provided an exemption from declaration (or if exempt routes become less competitive and the exemption is revoked). Specifically, the Commission can treat the removal of newly exempt routes as an asset disposal, or add assets associated with newly declared routes as an addition to the RAB.

### **Top-down long run incremental cost approach may distort investment decisions**

In principle, the top-down approach proposed by the Commission has elements of an ideal solution. The use of historical accounting values for assets avoids the revaluation problems associated with bottom-up cost modelling approaches and provides greater certainty for both access providers and access seekers. Therefore, we agree with the Commission that a top-down approach will reduce the discretionary nature of the costing exercise. We further agree that it is likely to produce a structure and level of prices that broadly reflect costs and that it could be applied to specify prices for individual routes based on service type, capacity and distance. However, we remain cautious about the Commission's references to optimisation or efficiency adjustments.<sup>29</sup> In our view, this option cannot be properly appraised without more detail is required on how the Commission would determine such adjustments. There is a significant danger the optimisation or efficiency adjustments could lead to over- or under-recovery of costs and, consequently, distort the build/buy decisions of potential investors.

While the use of the Regulatory Accounting Framework Record-Keeping Rule (RAF) might be appealing, we are concerned that the timeframe for access providers to implement major changes may significantly delay the introduction of indicative prices for the DTCS. The Commission should consider ways to expedite changes to the RAF if it chooses to implement this option. Finally, we caution against the use of current cost accounts, particularly if there is not sufficient transparency in the price indices used to adjust historical costs, as we have previously stated adjustments are likely to increase the risk of cost over- or under-recovery.

In our view, the 'Building Block' which locks-in and rolls-forward the RAB is preferable to a top-down incremental cost approach. The RAB approach provides greater transparency and certainty regarding the treatment of assets for both access providers and access seekers. Therefore, we regard the RAB approach as better at encouraging economically efficient investment in infrastructure.

### **Fully allocated costs (FAC) necessary for setting prices**

Of the four approaches put forward by the Commission, we consider that the FAC approach as most likely to promote the long-term interests of end-users while maintaining sufficient regard for the promotion of competition and the economically efficient use of, and investment in, infrastructure used to supply the DTCS. Given the DTCS uses many of the same assets that are required for fixed services interconnection, it is important that the Commission adopt the same cost methodology in determining regulatory prices for both services. Therefore, we regard the FAC approach as feasible and appropriate interim step toward the implementation of the 'Building Block' approach.

The FAC approach provides a suitable means of addressing vertical integration by the supplier of the DTCS in the short-term. (In the long-term structural reform, as has been proposed by the Government, is the best means of addressing enduring bottlenecks for vertically integrated firms). The

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<sup>29</sup> We note the Commission could opt for Current Cost Accounting (CCA) approach provided that it incorporates FCM.

FAC approach, as proposed by the Commission, may impose extensive and detailed reporting requirements on access providers. Nevertheless, these are appropriate given the scope for strategic pricing from vertically integrated providers of the DTCS. The Commission should consult with access providers and access seekers on the appropriate areas or regions to cost and on how different transmission services should be disaggregated.

We agree with the Commission that historical costs provide a more objective approach to cost-modelling, enabling the access provider to recover its actual costs as well providing incentives for further investment in the transmission network. Similarly, we share the Commission's concerns about the incentives for cost minimisation. In our view, the 'Building Block' approach, which is widely used in the regulation of electricity and gas, provides the Commission with a well-established framework for using forms of incentive regulation (for example, price caps) to address the perceived deficiencies of 'backward-looking' approaches. We further note that while forward-looking approaches would appear to deliver incentives for cost minimisation, the Commission's experience with fixed line services demonstrates that this is not always the case.

In circumstances where the access provider supplies the DTCS on a wholesale-only, open access basis, then the Commission is unlikely to require the same degree of cost disaggregation it requires for vertically integrated suppliers of the DTCS. In the absence of strategic pricing opportunities, the Commission should provide more discretion to access providers to determine the structure of prices across their declared transmission routes. In such circumstances, the Commission should not collect more information than is necessary to determine an appropriate cost-based revenue requirement.

We reiterate our concern that major changes to the RAF may be used by access providers to delay the implementation of pricing principles and indicative prices for the DTCS. The Commission must consider ways to expedite changes to the RAF to avoid unnecessary delays.

#### 4.4 Price flexibility is appropriate in some circumstances

Ideally, the access provider would be given a degree of flexibility to structure and set prices across its services provided that it did not recover more than its anticipated cost-based, revenue requirement. In theory, price flexibility would allow the access provider to set its regulated prices in a manner that is consistent with promoting the efficient use of its infrastructure. Economic theory suggests that the access provider would be likely to set prices according to the precepts of Ramsey-Boiteaux pricing. That is, prices would be set inversely proportional to the elasticities of demand for services on different routes. Such an outcome is consistent with price setting in unregulated markets. Moreover, it overcomes one of the main challenges in regulation of the DTCS – the shortage of relevant information held by the Commission on the demand for different transmission routes. In the absence of strategic pricing opportunities, price flexibility would allow the Commission to overcome both its information asymmetry and the complex challenge of pricing individual routes with varying technologies.

Price flexibility should not be permitted on routes where the supplier(s) of the DTCS is vertically integrated and has significant market power in downstream markets. Ramsey-Boiteaux pricing requires access providers to behave in a profit-maximising manner in the regulated market. Implicitly, it assumes that the access provider decisions are not distorted by profit-maximising incentives derived from vertical integration. If the vertically integrated access provider can raise the price for services where it faces more downstream competition, it could foreclose its competitors or damage 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 otherwise created by price flexibility.

The Commission should take a prescriptive approach to price setting for the DTCS for vertically integrated firms. Specifically, it will need to determine the specific allocation of costs between regulated DTCS routes (or baskets of routes). While there are a range of approaches the Commission could use to allocate costs between regulated services, the Commission should move toward a FAC approach with a prescriptive and detailed methodology for pricing individual routes.

## 5 Conclusion

The DTCS is an essential wholesale input for the delivery of downstream fixed and mobile data services. Strong growth in customer demand for data services means that access to DTCS on reasonable terms is increasingly important for access seekers such as VHA. While competition has improved on some routes there are many areas where the supply of the DTCS constitutes an enduring bottleneck.

The Commission's previous Pricing Principles for the DTCS have not done enough to promote competition in downstream markets. In our view, the Commission must release indicative prices for the different types of terrestrial transmission services that fall within the scope of the declared DTCS. Indicative prices will provide 'useful certainty' to relevant parties regarding the Commission's view on appropriate prices under its preferred pricing approach.

Of the four options put forward by the Commission, we consider the FAC approach as most useful for setting regulatory prices for supply of the DTCS on declared routes. However, it would be preferable if the Commission had a consistent regulatory approach for the DTCS as it does with fixed line services. In this context we support pricing principles that transition from the FAC approach to the 'Building Block' approach in the longer term.

One of the main challenges facing the Commission in setting regulatory prices is the information asymmetry between it and the access provider. The consideration of price and cost structures on a link-by-link basis or even with a basket of service types is non-trivial. In our view, it would be far more preferable where supply of the DTCS is provided on a wholesale-only basis, to grant the access provider flexibility in determining the structure and level of prices. Price flexibility should not be permitted on routes where the supplier(s) of the DTCS is vertically integrated and has significant market power in downstream markets.