



# MOBILE TERMINATING ACCESS SERVICE

SUBMISSION TO THE  
AUSTRALIAN COMPETITION AND  
CONSUMER COMMISSION

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## 1. Summary

Vodafone Hutchison Australia Pty Limited (VHA) welcomes the opportunity to participate in the Australian Competition and Consumer Commission's (ACCC) public inquiry into making an Access Determination for the domestic Mobile Terminating Access Service (MTAS). Mobile termination is one of the original 'deemed' declared services (with an extension to the scope of the declaration in 2004) and there have been a range of approaches to its pricing. As we move towards the next generation of fixed and wireless networks it is timely to assess the best approach to MTAS pricing over the next few years.

The fundamental issue that the ACCC must address is the lack of retail Fixed to Mobile (FTM) pass through to end-users of the significant reductions in the 'wholesale' MTAS rate over the last decade. The lack of pass through continues to call into question the benefits to the long-term interests of end users of further reductions to the MTAS rate.

The ACCC last considered the issue of pricing for the MTAS in detail as part of developing a Pricing Principles Determination and indicative prices for the period 1 January 2009 to 31 December 2011. At the time, the ACCC determined that the promotion of the long-term interests of end-users was best served by maintaining the indicative price for the MTAS at 9 cents per minute.

At the time, the ACCC noted:

- > FTM pass through does not appear to have been as strong as expected given the significant reductions in the MTAS rate since 2004;
- > the TSLRIC+ pricing methodology (as applied in the WIK model) had been used to estimate the efficient cost of supplying the MTAS and that it "generally provides a reasonable lower bound estimate to the cost of the MTAS";<sup>1</sup> and
- > the existence of a waterbed effect in an Australian context remains unclear.<sup>2</sup>

There is no new evidence to suggest that this approach to MTAS price regulation should change. There is little indication that the market is putting adequate competitive pressure on Telstra to deliver reductions in the FTM rate. Indeed there is strong evidence to suggest that Telstra's FTM margin has increased, delivering very high economic rents to the incumbent operator. Further, as far as VHA is aware, the ACCC does not have any new information on the cost of supplying the MTAS in Australia. The ACCC has not developed an up-to-date cost model to determine efficient cost for Mobile Network Operators (MNOs) operating 2G / 3G hybrid networks nor has it reformed the Telecommunications Industry Regulatory Accounting Framework (RAF) to provide it with more accurate information about MNO's actual costs.

Should the ACCC wish to address the cost of supplying the MTAS concurrently with ensuring that FTM prices are reduced to reflect previous reductions in the MTAS rate, then there must be protections in place that ensure that any further reductions in the MTAS will have the effect of promoting the long-term interests of end-users by delivering demonstrable retail price reductions for consumers. VHA believes that this could be achieved with the introduction of a retail FTM pass through safeguard. The safeguard must be linked to full pass through of any further MTAS rate reductions and redress the historic lack of FTM pass through.

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<sup>1</sup> ACCC (2009), *Domestic Mobile Terminating Access Service Pricing Principles Determination and indicative prices for the period 1 January 2009 to 31 December 2011*, March, p28.

<sup>2</sup> Ibid.

If the ACCC believes that the MTAS rate warrants a review then it must develop a credible framework for estimating the *cost* of supplying the MTAS in Australia. VHA recognises that this has been a vexed issue in the context of fixed line pricing and that it is why VHA suggests that the ACCC should not rely on a single approach but instead use the combination of a TSLRIC+ assessment that is confirmed by an assessment of actual cost data. In the context of mobile pricing (where technology changes continue to be a significant factor in the overall cost), TSLRIC+ remains the best approach for determining the efficient economic costs of providing the MTAS. Actual cost data provides an essential complement to TSLRIC+ by ensuring that the hypothetical TSLRIC+ models are grounded by practical considerations of network configuration and do not result in an efficiency benchmark that is unachievable under real-world constraints. Benchmarking international mobile termination pricing is not an appropriate substitute for an accurate and rigorous cost assessment.

If the ACCC has not yet commenced developing estimates for the cost of supplying the MTAS in Australia then it is not clear whether it could complete this task by the end of the year. In these circumstances, the ACCC has two options:

- > maintain the current rate at 9 cents per minute while it gathers information and builds its own purpose-specific model to estimate the costs of supplying the MTAS in Australia; or
- > take a conservative approach to reducing the MTAS rate over the next three years while it gathers information and builds its own purpose-specific model on the long-term cost of supplying the MTAS during that period and implements a FTM pass through safeguard that would only allow MTAS reductions if service providers demonstrate that they have passed through the MTAS price reductions of the past.

The first approach permits the ACCC to more accurately determine an allocatively efficient MTAS price and gives the retail FTM market another chance to more appropriately reduce the overall FTM price. The second approach is more interventionist in that it requires a preliminary cost assessment to be undertaken and introduces a FTM pass through mechanism.

If the ACCC elects to pursue reductions in the regulated MTAS price via the second option then it should be done gradually over several years. A change in the MTAS rate will have a significant impact on revenue and costs for VHA and other MNOs. It will take time for VHA to undertake the structural adjustments necessary to rebalance its pricing. VHA urges the ACCC to adopt a prudent glide path if it determines the forward-looking cost of supplying the MTAS is below its previous indicative price of 9 cents per minute.

Another issue raised in the Discussion Paper was the ACCC's consideration of differential treatment of the use of MTAS for FTM and mobile-to-mobile (MTM) interconnection. VHA recognises that different market dynamics affect FTM and MTM termination and supports the ACCC's view that, from a regulatory perspective, the two downstream market segments are distinct. However, VHA does not believe that such differences warrant different regulatory treatments for the MTAS. Attempts to pursue such approaches in other markets have not been successful.

Pure 'Bill and keep' arrangements for MTM calls would potentially be contrary to the long-term interests of end-users and the legitimate commercial interests of MNOs. Mobile consumers will be worse off as below cost pricing for MTM termination is likely to have the effect of softening network competition and MNOs may be worse off due to significant arbitrage risks for the supply of FTM termination. Bill and keep arrangements that have some form of 'true up' if there is an imbalance in traffic flows would not result in a different outcome to today's approach.

## 2. Evaluation of MTAS pricing and its impacts

In the 2004 reconfirmation of the MTAS declaration, the ACCC identified the problem it was attempting to solve as the 'bottleneck' control that providers of the MTAS have over access to an essential input in the provision of FTM and MTM calls. The ACCC outlined that MNOs have both the ability and the incentive to raise the price above its underlying cost of production,<sup>3</sup> and identified three specific structures where it suggested MNOs were likely to exploit their market power:

- > Each subscriber brings a source of economic profits as it enables the mobile operator to charge above-cost prices for calls made to him/her. This creates an incentive for MNOs to attract more subscribers to their network by subsidising the prices they offer potential mobile subscribers for retail services.
- > Above-cost prices for the MTAS increase the costs of an essential input for providers of FTM calls which, in turn, raises the price of FTM calls.
- > Above-cost prices for the MTAS allow vertically-integrated fixed and mobile network operators to raise the cost of rival FTM services providers operated by fixed line only networks relative to the cost which the vertically-integrated operators face to terminate such calls on their own mobile network.

The ACCC believed "the market within which FTM calls is provided is far from effectively competitive. This is leading to higher-than-cost prices for FTM calls and, consequently, substantial losses in consumer welfare".<sup>4</sup> The Commission stated:

*...the Commission expects that increased competition in the market within which FTM services are provided would create pressures on all providers of this service to pass-through reductions in the price of the MTAS to end-users. If a provider of FTM services chooses not to pass-through reductions in the price of the MTAS, it runs the risk of losing market share to competitors who do.*<sup>5</sup>

At the time, pricing principles for the MTAS reflected the ACCC's desire that indicative prices should be reduced to reflect its view of the underlying cost of supplying the MTAS.

When the ACCC issued its pricing principles determination in 2009, it took a different approach by maintaining the indicative price for the MTAS at 9 cents per minute from 1 January 2009 to 31 December 2011. The ACCC, in making this decision, stated:

*"FTM pass through does not appear to have been as strong as expected given the significant reductions in the MTAS since 2004".*<sup>6</sup>

In its 2011 Discussion Paper, the ACCC remains concerned that there has been a lack of retail FTM pass through:

*The ACCC considers that the lack of FTM pass-through demonstrates inherent structural issues in the fixed line services market where integrated operators remain dominant with their full suite of services. Consumers who acquire a variety of services such as voice, data or pay TV tend to select integrated operators so as to obtain bundle discounts*

<sup>3</sup> ACCC (2004), *Mobile services review: Mobile Terminating Access Service*, Final decision, June, p. v.

<sup>4</sup> *Ibid.*, p. ix.

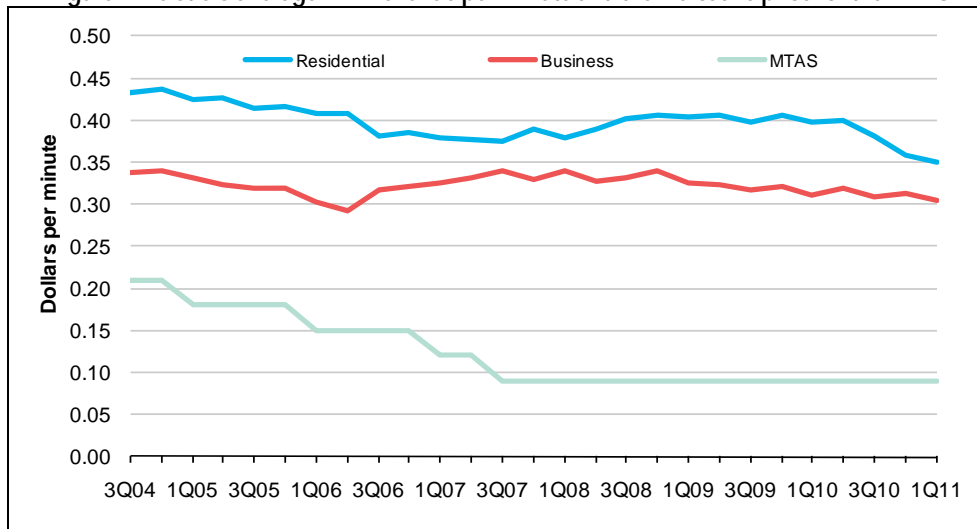
<sup>5</sup> *Ibid.*, p. x.

<sup>6</sup> ACCC (2009), *Domestic mobile terminating access service pricing principles determination and indicative prices for the period 1 January 2009 to 31 December 2011*, March, p28.

and a single bill. The lack of competitive pressure means that integrated operators have little incentive to pass through savings from reductions in the MTAS directly to consumers in the FTM price. Integrated providers also have the ability to use their savings from the regulated reductions in the MTAS rate to subsidise price reductions in services or geographic areas where competition does exist.<sup>7</sup>

The facts support the ACCC's concerns. Since 2004 MTAS rates have fallen from 21cpm to 9cpm but the gap between indicative MTAS price and the average revenue per minute for FTM services has widened (see Figure 1). Telstra's average revenue per minute for residential FTM services during the third quarter of 2004 was 43.4 cents and its average revenue per minute for business FTM services was 33.6 cents. Six years later, during the third quarter of 2010, Telstra's average revenue per minute for residential FTM services had only fallen by 5.2 cents and for business FTM services the fall was only 2.6 cents. In contrast, the ACCC reduced its indicative price for the MTAS from 21 cents per minute to 9 cents per minute, a reduction of 12 cents per minute.

Figure 1: Telstra's average FTM revenue per minute and the indicative price for the MTAS



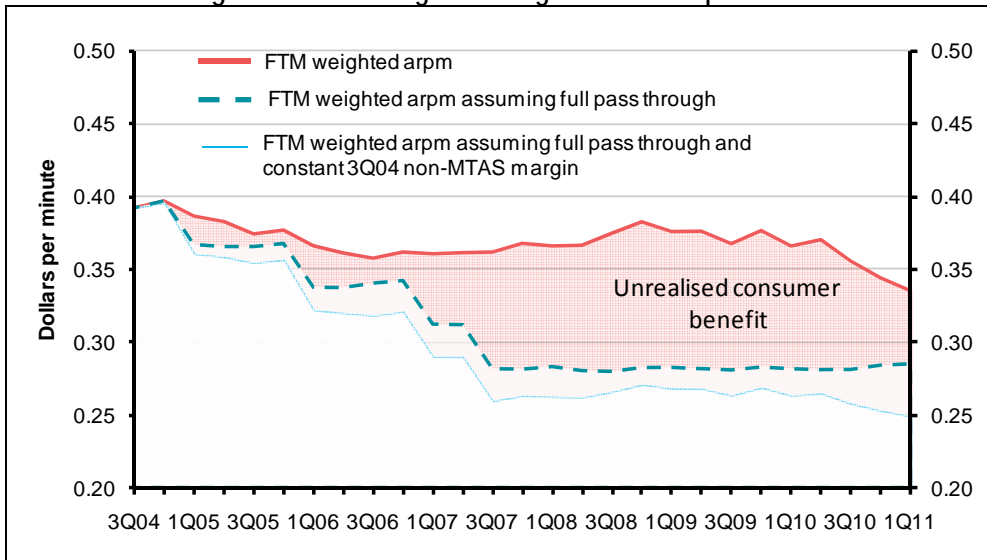
Source: VHA based on the ACCC's *Imputation and non-price terms and conditions report*, various quarters and the ACCC's various pricing principles for the MTAS.

The sustained divergence between imputed retail FTM prices and the indicative price for the MTAS means that fixed-to-mobile consumers have not realised the full benefit of reductions in the indicative price for the MTAS.

The main beneficiaries of the reduction in indicative prices for the MTAS have been fixed and integrated operators who supply retail FTM services. Analysis of Telstra's publicly disclosed FTM data from the ACCC's *Imputation and non-price terms and conditions reports* suggests that the unrealised consumer benefit from lack of FTM pass through amounts to \$1.1 billion in the period from 1 July 2004 to 31 December 2010, and the figure could be as high as \$1.5 billion (see Figure 2 and Appendix A). Further, Telstra may have used its 'windfall' gain to entrench its position in the fixed services market, to increase its return to shareholders and/or to subsidise the cost of other services particularly through its use of bundle offers.

<sup>7</sup> ACCC (2011), *Domestic mobile terminating access service (MTAS)*, Discussion paper, June.

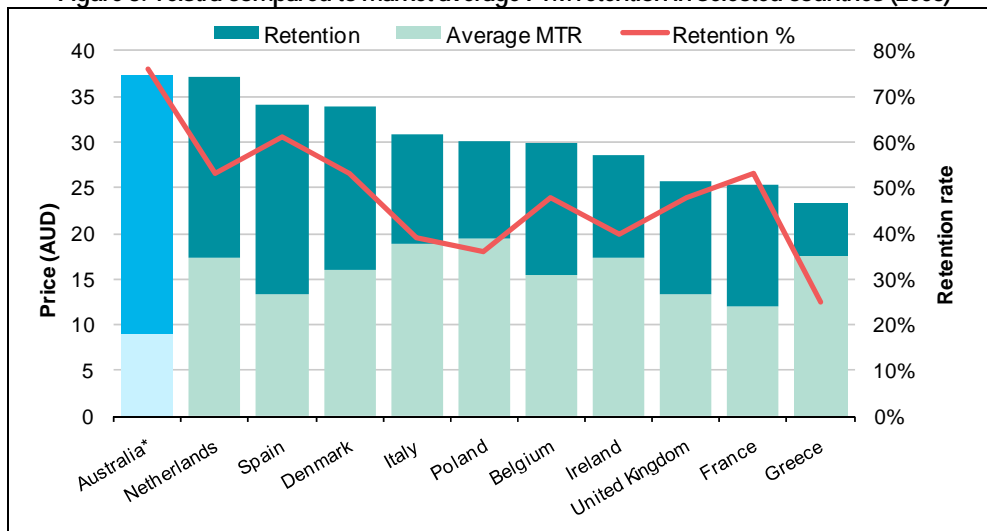
Figure 2: Telstra's weighted average FTM revenue per minute



Note: arpm – average revenue per minute. Data is based on a volume-weighted average between residential and business segments.  
Source: VHA based on the ACCC's *Imputation and non-price terms and conditions report*, various quarters.

In international comparisons, Telstra's retention of the benefits from reductions in the regulated price for the MTAS is unique and unprecedented. Despite having lower MTAS rates than any of the selected countries in a report on the regulatory treatment of FTM pass through undertaken for the ACCC in 2009, Telstra's weighted average FTM revenue per minute and its retention margin were significantly higher than any of the countries selected for the study (see Figure 3).

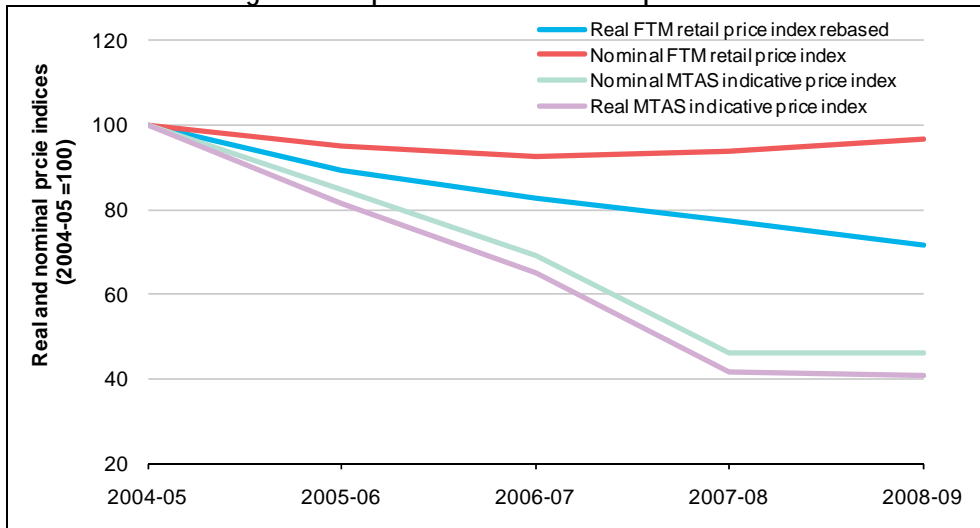
Figure 3: Telstra compared to market average FTM retention in selected countries (2008)



Notes: \*For Australia, only Telstra's average retail FTM revenue per minute has been used. Telstra had 72% of PSTN voice customers in 2008.  
Source: VHA based on the ACCC's *Imputation and non-price terms and conditions report*, various quarters; and Analysys Mason (2009), *Regulatory treatment of fixed-to-mobile pass through*, Report for the ACCC, Public version, October.

Telstra is probably not the only fixed operator to have failed to pass on the benefits from the significant reductions in the MTAS to end-users of FTM services. Aggregate price data published by the ACCC suggests that nominal FTM price trends were broadly similar across the fixed voice market (see Figure 4). Although, VHA notes that Telstra is the dominant supplier of PSTN voices and smaller operators may be constrained in their ability to sustain retail propositions that are significantly different from Telstra's retail PSTN pricing structures.

Figure 4: Comparison of FTM and MTAS price indices



Source: VHA based on data published by the ACCC and the Australian Bureau of Statistics (ABS).

#### *Retail fixed-to-mobile services as part of the PSTN bundle*

The ACCC must be extremely cautious about accepting correlation between reductions in the MTAS and reductions in the price of the basket of Telstra's fixed voice services as evidence of a causal relationship.

FTM services comprise a significant portion of consumer's total expenditure on PSTN services. Therefore, it might be expected that the sizable reductions in one of the major FTM cost inputs (that is, the MTAS) would translate into a significant reduction in the price of other PSTN services if the input cost reduction was not directly passed through in the form retail FTM price reductions. To estimate the size of the reduction in the PSTN basket of services that might have been expected from reductions in the MTAS rate in the absence of FTM pass through, VHA has multiplied the reduction in FTM input costs by the FTM share of total consumer expenditure and compared it with ACCC's PSTN price index (adjusted into nominal terms) (see Table 2).



Table 2: Assessing whether MTAS-rate reductions have been passed on in the basket of PSTN services

	2004-05	2005-06	2006-07	2007-08	2008-09
Weighted average indicative MTAS price	0.195	0.165	0.135	0.090	0.090
Non-MTAS FTM costs <sup>^</sup>	0.050	0.050	0.050	0.050	0.050
Total FTM costs	0.245	0.215	0.185	0.140	0.140
A: Change in FTM input costs		-12.2%	-14.0%	-24.3%	0.0%
B: FTM share of total consumer PSTN expenditure	24%	25%	26%	27%	23%
A x B: Implied percentage change required for PSTN services from MTAS reductions assuming no retail FTM pass through		-3.1%	-3.6%	-6.6%	0.0%
Actual change in PSTN price index (adjusted into nominal terms)		-2.8%	-3.6%	-1.2%	-1.2%

Notes: <sup>^</sup> As per Analysys Mason (2009), *Regulatory treatment of fixed-to-mobile pass through*, Public version, Report to the ACCC, October, 38.  
Source: Analysys Mason, VHA based on data published by the ACCC and the ABS.

Even under a generous assumption that the non-MTAS related costs of providing PSTN services have remained constant, the evidence is mixed at best. In some years it might be possible to argue that, with some level of FTM pass through, MTAS-related price declines are greater than the overall decline in the PSTN price index (adjusted into nominal terms), but this requires an assumption that fixed network operators have made little, if any, improvement in their network and operating cost performance over the past six years. VHA does not believe that is credible. Further, economies of scope and the growth of data traffic means a growing portion of Telstra and other fixed operators' costs are likely to have been recovered from data services during this time.

There are reports that Telstra's retail prices are continuing to rise. Earlier this year Telstra changed its billing increment from 30 second blocks to charging customers by the minute.<sup>8</sup> The change included FTM calls. More recently, Telstra increased the price of basic access services across five of its fixed-line plans by \$1-\$2 a month.<sup>9</sup>

### The mobile services market

There is no clear correlation between reductions in the indicative price for the MTAS and the price of retail mobile services or the state of competition in the Australian market. The presence of integrated, fixed and mobile operators, the lack of FTM pass through, the waterbed effect and the restructuring of the market following the merger of Vodafone Australia Limited and Hutchison 3G Australia Pty Limited mean that the impact of MTAS prices on competitive dynamics are difficult to assess.

Many regulators (including those in Europe and in New Zealand) seek to lower MTAS prices in order to counter the alleged constraints upon competition imposed by on-net/off-net retail price differentials accompanied by significant asymmetries in subscriber market shares. Neither of these conditions is present in the Australian market today. For example, VHA's launch of retail propositions such as the Vodafone Infinite and All-time plans include standard national voice calls to any network within the price of the monthly fee or recharge period thus eliminating the distinction between on-net and off-net calls.<sup>10</sup> As a result, the consequences for consumer welfare from reductions in MTM MTAS are uncertain at best. Given the presence of integrated operators (and mobile only competitors) and the lack of

<sup>8</sup> Magee, A (2011), 'Telstra to reap massive profits after increasing phone charges', *Herald Sun* on news.com.au, 11 February.

<sup>9</sup> Whalley, J and Thom, G (2011), 'Home phone fee hike', *Herald Sun* on [www.heraldsun.com.au](http://www.heraldsun.com.au), 23 July.

<sup>10</sup> For more details see: <http://shop.vodafone.com.au/all-plans?id=900013>; and <http://shop.vodafone.com.au/all-plans?id=1700027>.



FTM pass through in the Australian market, it is highly likely that further reductions of MTAS would actually inhibit competition in the mobile market because the larger integrated operators will retain a windfall gain.

In short, there is no reason to believe that under current conditions in the Australian market a reduction in the price of the MTAS will promote competition in the mobile services market.

**Conclusion: reducing MTAS rates in the past has not delivered the expected benefits**

For the reasons set out above, previous MTAS rate reductions have not promoted the long-term interests of end-users and there is no reason to believe that further reductions in the MTAS rate would do so today.

### 3. Implementing an incentive mechanism for retail FTM pass through

VHA welcomes the ACCC's suggested options for a pass through safeguard for retail FTM prices. Further details will be required to have confidence that such a mechanism will deliver the reductions in retail FTM pricing necessary to promote the long-term interests of end-users.

The ACCC outlined two options:

- > **Linked approach** – a requirement that any further reduction in the MTAS rate be linked to a full or partial pass-through obligation;
- > **Retail-minus approach** – the regulated MTAS rate could be expressed as a function of a firm's retail FTM call price, for example, by deducting the costs of providing a FTM call other than the MTAS.

VHA is concerned that the first approach will preserve the excessive retail FTM margins previously secured by integrated and fixed operators to the detriment of end-users and there is little reason why this should be preserved. VHA considers that any pass through mechanism must address the previous lack of retail FTM pass through before considering further reductions in the MTAS. As outlined previously, more than \$1 billion in unrealised consumer benefits have accrued to Telstra since the ACCC started reducing MTAS rates in 2004. Based on data for Telstra, VHA conservatively estimates that the weighted average FTM revenue per minute should fall by at least 7 cents per minute, or around 24 per cent, just to claw back the lack of FTM pass through from the ACCC's previous reductions to the indicative price for the MTAS.

The fundamental concern that VHA has with the second 'retail-minus' approach is that it relies upon FTM retail price being set in an efficient, competitive manner in order for there to be any prospect of MTAS being set appropriately. Since we have already presented ample evidence that the FTM retail market does not operate efficiently, there is no reason to suppose that this approach would work without a requirement to drop the initial FTM starting price (as outlined in the paragraph above).

#### VHA's revised approach

To the extent the ACCC regards a reduction in the regulated MTAS rate as necessary then a FTM pass through safeguard mechanism is essential for the promotion of the long-term interest of end-users. VHA recommends a modified linked approach to implement a pass through safeguard. The elements of the mechanism include:

- > the initial threshold level for retail FTM prices (based on the average FTM revenue per minute) that acknowledges the lack of historic FTM pass through;
- > a glide path for reductions in the threshold level for retail FTM prices linked to reductions in the MTAS rate;
- > access seekers whose average FTM revenue per minute is lower than the threshold would be entitled to the cost-based MTAS rate based on an appropriate glide path; and
- > access seekers whose average FTM revenue per minute is greater than or equal to the threshold would have the MTAS rate maintained at 9 cents per minute.

Given the lack of retail FTM pass through in the past, a sufficiently low threshold must be set for the ACCC to have confidence that pass through has occurred. VHA recommends that the initial threshold should be set at 25 cents per minute. This is a conservative recommendation and reflects the mid-point between:

- > the additional reduction of 7 cent per minute FTM price that VHA has estimated should have occurred to Telstra's weighted average FTM revenue per minute based on the ACCC's previous reductions in the MTAS rate, which yields an upper bound of 28 cents per minute;<sup>11</sup> and
- > the 15 cent per minute FTM reduction put forward by Analysys Mason based on the 2007-08 weighted average FTM revenue per minute (37 cents per minute),<sup>12</sup> which suggests a lower bound of 22 cents per minute.

The floor for the MTAS rate should be based on the forward-looking costs of supplying the service. The proposed FTM pass through safeguard mechanism is illustrated in Table 3. This assumes a straight-line glide path toward the forward-looking cost of supplying the MTAS, with the annual rate of reduction in the MTAS set at  $x$  dollars per minute.

Table 3: Proposed incentive mechanism for FTM pass through (dollars per minute)

	1 Jan – 31 Dec 2012	1 Jan – 31 Dec 2013	1 Jan – 30 Jun 2014
Threshold – weighted average FTM revenue per minute	0.25	$0.25 - x$	$0.25 - 2x$
MTAS rate if threshold not met	0.09	0.09	0.09
MTAS rate if threshold met	$0.09 - x$	$0.09 - 2x$	$0.09 - 3x$
Floor price for MTAS set based on forward-looking efficient costs <sup>A</sup>	$0.09 - 3x \geq \text{MTAS}_{2014 \text{ cost}}$		

Notes: <sup>A</sup>Based on midpoint of 7 cpm and 15 cpm reduction average FTM revenue per minute estimates as set out above.

This approach remains conservative in its treatment of the imputed margin for FTM calls. VHA has developed an alternative safeguard option which is based on the analysis previously undertaken by Analysys Mason for the ACCC. The alternative approach seeks to link the retail FTM price directly to the underlying cost of providing FTM calls, by providing an incentive to stop an increase in the profit margin for a FTM call.

In the alternative approach, the initial threshold is set to reflect full pass through of the 15 cents per minute estimated by Analysys Mason. The endpoint for the retail FTM threshold is set to reflect the underlying cost of providing FTM calls. The threshold end point is calculated as follows: Analysys Mason's assumption that the downstream cost of supplying FTM calls (0.05 dollars per minute)<sup>13</sup> is added to the endpoint for the unit cost of termination to give the total cost of supplying FTM calls ( $0.14 - 3x$  dollars per minute). The underlying cost of supplying FTM calls is then multiplied by a profit margin, which Analysys Mason assumed was 15 per cent.<sup>14</sup> Finally,  $x$  dollars per minute is added to this figure so that the threshold is set above the expected reduction in the MTAS rate assuming previous threshold targets had been met. This yields a threshold end point for the weighted average FTM revenue per minute of:

$$\begin{aligned} \text{Threshold}_{\text{End-point}} &= (\text{Cost}_{\text{FNO}} + \text{MTAS}_{2014}) * (1 + \text{FNO}_{\text{margin}}) + x \\ &= (0.14 - 3x) * (1 + 0.15) + x \end{aligned}$$

<sup>11</sup> Estimate based on ACCC, *Imputation and non-price terms and conditions report* for 2Q10, 3Q10, 4Q10 and 1Q11.

<sup>12</sup> Based on ACCC, *Imputation and non-price terms and conditions report* for 3Q07, 4Q07, 1Q08 and 2Q08.

<sup>13</sup> Analysys Mason (2009), *Regulatory treatment of fixed-to-mobile pass through*, Public version, Report to the ACCC, October, p38.

<sup>14</sup> Ibid.

The alternative safeguard option is illustrated in Table 4.

Table 4: Alternative safeguard option for FTM pass through (dollars per minute)

	1 Jan – 31 Dec 2012	1 Jan – 31 Dec 2013	1 Jan – 30 Jun 2014
Threshold – weighted average FTM revenue per minute	0.22	$(0.22 + \text{Threshold}_{\text{End-point}})/2$	$\text{Threshold}_{\text{End-point}}$
MTAS rate if threshold not met	0.09	0.09	0.09
MTAS rate if threshold met	$0.09 - x$	$0.09 - 2x$	$0.09 - 3x$
Floor price for MTAS set based on forward-looking efficient costs <sup>A</sup>	$0.09 - 3x \geq \text{MTAS}_{2014 \text{ cost}}$		

Notes: <sup>A</sup>Based on the 15 cpm reduction average FTM revenue per minute estimated by Analysys Mason.

### Additional considerations

VHA believes that there is no reason to distinguish between FTM and MTM termination in setting the MTAS rate under the modified linked approach. Other than VHA (and Pivotel), other suppliers of the MTAS are integrated players and VHA does not believe it appropriate (or practical) to differentiate the MTAS for calls originating from the same supplier.

The ACCC should also consider an exclusion from the pass through safeguard for fixed-only operators. An exemption for fixed-only operators would remove the implications from integrated operators “raising their rivals costs” for the provision of FTM services. It would strengthen the incentive for integrated operators to achieve the threshold by stimulating competition in the market in which FTM calls are supplied. An exemption for fixed-only operators would also limit the regulatory burden created by the pass through safeguard as a result of new regulatory reporting requirements.

Integrated (and potentially fixed) operators should only be deemed as meeting the threshold for the minimum level of pass-through if their average FTM revenue per minute has been below the threshold level for two successive quarters. In such circumstances, the integrated (or fixed) operator could be put on a list of eligible carriers for the lower regulated MTAS rate.

The modified linked approach will give rise to measurement and implementation challenges. VHA supports the ACCC collecting information on fixed-to-mobile revenue and fixed-to-mobile minutes from integrated (and fixed) operators. The ACCC should require such data to be audited and disaggregated between residential and business services. The data should be lodged on a quarterly basis. The ACCC should publish headline results from such data to improve public awareness about the lack of FTM pass through, thereby strengthening incentives for integrated (and fixed) operators to pass on the benefits of MTAS rate reductions. VHA notes that it may be possible to amend existing record-keeping rules to deliver this information but, if this is not possible, a new record-keeping rule will be required for integrated (and fixed) operators.

## 4. Estimating the costs of supplying the MTAS

The primary regulatory problem for the ACCC to address is the lack of FTM pass through rather than the access problem created by the MTAS. The Analysys Mason report commissioned by the ACCC in 2009 demonstrates the consumer benefit from addressing the lack of FTM pass through is far greater than the consumer benefit from cost-based regulation of the MTAS. Deriving an estimate for the cost of supplying the MTAS should be regarded by the ACCC as a secondary problem, albeit one that could be addressed concurrently with ensuring that there is FTM pass through.

As far as VHA is aware the ACCC does not currently have a robust, credible and up-to-date estimate for the cost of supplying the MTAS in Australia. The ACCC therefore has two options:

- > maintain the current rate at 9 cents per minute while it gathers information and builds its own purpose-specific model to estimate the costs of supplying the MTAS in Australia;
- > take a conservative approach to reducing the MTAS rate over the next three years while it gathers information and builds its own purpose-specific model on the long-term cost of supplying the MTAS during that period and implements a FTM pass through safeguard that would only allow MTAS reductions if service providers demonstrate that they have passed through the MTAS price reductions of the past.

The first approach permits the ACCC to more accurately determine an allocatively efficient MTAS price and gives the retail FTM market another chance to appropriately reduce the overall FTM price. The second approach is more interventionist in that it requires a preliminary cost assessment to be undertaken and introduces a FTM pass through mechanism.

### 4.1 The ACCC should use the TSLRIC+ and actual cost methodologies

It is, of course, important to estimate the unit cost of providing the MTAS. However, this is not straight-forward and invariably requires a level of subjective assessment with respect to the allocation of costs across both time and the range of services offered by MNOs. Each operator is likely to have different cost structures and each of the cost-based pricing approaches (that is, TSLRIC+, pure LRIC and actual costs) is subject to inherent uncertainty in relation to numerous technical and economic assumptions required as inputs.

Two of the ACCC's most recent frameworks for assessing the cost of supplying the MTAS in Australia were the WIK model and the RAF. These frameworks are now out of date. The WIK model was a TSLRIC+ model that estimated the cost of supplying the MTAS for a hypothetical efficient operator unconstrained by existing network structures with a market share of either 25% or 31%. It was based on a 2G only network and does not capture the impact of 3G services or hybrid networks, or future changes such as the launch of commercial LTE services in 2012. The RAF was devised in 2003 and, despite a review initiated by the ACCC in 2008, it has not undergone significant revision since its inception. While the RAF contains an appropriate conceptual framework for estimating the unit cost of mobile termination, a review of its cost allocation methodologies, and to a lesser extent, the range of services provided by MNOs is required so that the ACCC can use the RAF data to understand the actual costs of supplying of the MTAS for each MNO in Australia.

VHA has compared the suitability of each price methodology put forward by the ACCC in its Discussion Paper against the legislative criteria relevant to making an access determination (see Table 5). Of the methodologies considered by the ACCC, TSLRIC+ or a methodology based on actual costs are likely to be most appropriate. However, none of the price methodologies adequately meet all the legislative criteria that the ACCC must take into account in making an access determination. Therefore, the ACCC should use a combination of TSLRIC+ and actual cost data to estimate the cost of supplying the MTAS.

Table 5: Assessing pricing methodologies against the matters the ACCC must take into consideration in making a FAD

Section 152BCA(1) criteria*	TSLRIC/ TSLRIC+	Pure LRIC	International benchmarking	Actual costs supplied by MNOs	Bill and keep
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.	na	na	na	na	na
The economically efficient operation of a carriage service, a telecommunications network or a facility.	✓	✓	✗	✓	✗

Notes: Section 152BCA(1) of the *Competition and Consumer Act 2010*, na – Not applicable.

Analysis of each of the pricing approaches is set out below and further considerations of the TSLRIC+, actual cost and pure LRIC approaches are set out in Appendix B.

### TSLRIC+ approach

VHA supports the use of TSLRIC+ as a cost concept and recommends the ACCC construct a new TSLRIC+ model to estimate the efficient cost of supplying the MTAS in Australia. Despite significant implementation challenges, TSLRIC+ is likely to remain the best approach for determining the efficient economic costs of providing the MTAS.

The advantages of a TSLRIC+ approach is that it is good at investigating the relationship between cost and demand, and can therefore predict the forward-looking costs of providing traffic services for a number of years. This enables the use of TSLRIC+ models when setting a multi-year price cap. The output from a TSLRIC+ approach corresponds to the price that would prevail in an effectively competitive market.

Most of the challenges with a TSLRIC+ approach arise from its implementation rather than the soundness of its economic foundations. TSLRIC+ models can be difficult to evaluate, and may not reflect the cost structure and level obtained or accessible to any operator within the market. This can be mitigated through the concurrent collection of actual cost data to validate and reconcile outcomes produced by

TSLRIC+ cost models. A TSLRIC+ approach can and should be improved by calibrating a “scorched earth” approach with the design and deployment actually employed by MNOs.

A practical consideration for the ACCC in adopting a TSLRIC+ approach is that these models are complex to build. If done properly, the ACCC will need to undertake extensive consultation with industry with a focus on the calibration of network design components of the model. Accuracy, transparency and credibility must be cornerstones of any modelling approach adopted by the ACCC.<sup>15</sup> The largest problem with the WIK model is that it did not give some access providers sufficient confidence that these principles were met. Any future TSLRIC+ model developed by the ACCC must be done in an open and consultative manner, with detailed information about the model (including its network algorithms) made available to the public via the ACCC’s website.

In practice, a TSLRIC+ model will take 6-12 months to complete, from initial project scoping through to final sign-off and acceptance by the regulator and industry. This does not represent a reason for the ACCC not to pursue a TSLRIC+ approach, rather it indicates that the ACCC must be prepared for the time involved in undertaking a rigorous cost modelling exercise should it pursue a TSLRIC+ (or pure LRIC) approach.

#### Actual cost data should inform the ACCC’s view of costs

Actual cost data should play a role in the determination of regulated prices for the MTAS. Actual cost data has two important functions, which make it an essential complement to TSLRIC+:

- > It ensures that the hypothetical construct of a TSLRIC+ model is subject to empirical validation. It is conceivable that options to achieve hypothetical efficiency are not uniform for all carriers and it is therefore important to determine whether there are specific barriers to achieving the optimised efficiency envisaged by a TSLRIC+ cost model. For instance, integrated operators (and Telstra in particular) may have built more fibre transmission links than mobile-only operators such as VHA due to economies of scope with their fixed operations. In such circumstances, the cost of acquiring transmission capacity may differ from the long-run incremental cost of building transmission capacity (in areas where it is uneconomic to duplicate the infrastructure).
- > If the ACCC finds that the efficient cost of supplying the MTAS based on TSLRIC+ differs from the actual cost of supplying the MTAS for any MNO in the market then it is critical for the ACCC to use actual cost data to assess the path by which such MNOs might move toward cost efficiency.

The main implementation challenge with actual cost-based approaches is how to allocate costs between different services. The regulator must expend significant effort in its initial collection of data and its assessment of the allocation methodology for actual cost data. Periodic reviews of cost allocation approaches are also necessary to account for changes in the MNO service offering such as the emergence of mobile data services over the past five years or the potential transition to IP-based voice services over the next five years.

VHA has engaged Frontier Economics to assess the utility of using Depreciated Actual Cost (DAC) data in setting MTAS rates. Frontier’s report is attached in Appendix D.

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<sup>15</sup> These issues were explored in detail in information previously supplied to the ACCC in *Analysys (2007), Review of WIK’s mobile network cost model*, prepared for Vodafone Australia, 6 August.



*The RAF would be a suitable source of data to undertake an actual cost assessment*

VHA supports the continued use of the RAF for determining actual costs. A purpose specific instrument, such as the RAF, will provide the ACCC with the most appropriate means for determining the actual costs associated with the supply of the MTAS. Given the RAF is already established and can be used to estimate a unit cost of termination, there is no reason for the ACCC to pursue additional measures for reporting actual cost data.<sup>16</sup>

VHA acknowledges that the cost allocation methodologies associated with RAF requires an update given the rising prominence of new mobile services, such as mobile broadband, that have occurred since the RAF instrument was originally devised. VHA supports an ACCC review that standardises the relevant cost allocation rules provided through the RAF and takes account of mobile services that were not available at the time the RAF instrument was created.

### Pure LRIC

VHA does not support the adoption of pure LRIC as a basis for setting regulated prices for the MTAS. The adoption of a pure LRIC is likely to have an adverse impact on the long-term of interest of end-users and is contrary to the legitimate interests of carriers.

Pure LRIC approaches differ from TSLRIC+ in that they do not include the common costs of a network providing a full range of services. The immediate and obvious implication is that, all other things being equal, pure LRIC approaches will result in a lower long-run incremental cost for voice termination than a TSLRIC+. The difference between TSLRIC+ and pure LRIC does not relate to cost efficiency as both approaches will deliver cost efficient estimates for the MTAS. Rather the approaches differ in their assumptions about the structure of how costs ought to be recovered between different services. There is no economic merit in common costs being wholly recovered from the provision of retail mobile services instead of being shared between retail services, other wholesale services and the MTAS. Callers to mobile devices should make a contribution to the common costs that are efficiently incurred in supplying services to them.

The main argument employed by European regulators for moving to pure LRIC is that it will facilitate greater competition in the mobile services market (and overcome on-net/off-net retail pricing differentials). VHA has previously provided information which demonstrates that this argument cannot be sustained in the Australian market due to the presence of integrated and non-integrated operators, the relative lack of asymmetric market shares, and the absence of extensive on-net/off-net retail price differentials.

### Is there a role for international cost benchmarking for the MTAS?

There is no proper basis for the ACCC to use international benchmarking alone in deriving a regulated price for the MTAS. The Australian Competition Tribunal, and indeed the ACCC itself, has previously expressed caution over the use of international benchmarking.<sup>17</sup> For instance, the Australian Competition Tribunal stated “a benchmarking analysis of other countries tells us little about the reasonableness of prices charged in the Australian regulatory environment”.<sup>18</sup>

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<sup>16</sup> VHA has asked Frontier Economics to assess the utility of the RAF framework as part of its assessment of the DAC approach. See Appendix D for details.

<sup>17</sup> See, for example, *Application by Telstra Corporation Limited* [2010] ACompT 1 at [482].

<sup>18</sup> *Application by Optus Mobile Pty Limited & Optus Networks Pty Limited* [2006] ACompT 8 at [295].

Even with the most sophisticated statistical techniques to adjust for differences between Australia and the set of benchmark countries, the scope for variation in benchmarking outcomes makes it extremely unlikely that a reliable estimate could be established for the cost of supplying the MTAS in Australia.<sup>19</sup>

The only appropriate role for international benchmarking is as a starting point which may help the ACCC to identify areas where the efficient cost of supplying the MTAS in Australia might be different from other international countries or to alert the ACCC to potential trends in the cost of supplying the MTAS in other jurisdictions that may have relevance for cost trends in Australia.

Further, the ACCC's consideration of benchmark MTAS rates from European countries must take account of the implementation of the European Commission's recommendation on the regulatory treatment of fixed and mobile termination rates in the European Union (EU) and the consequent adoption of pure LIRC models.<sup>20</sup> VHA has previously explained why the Australian context makes this an inappropriate approach.

Once differences in regulatory policy are taken in account, certain adjustments to the benchmark data set are required to account for differences such as spectrum allocations, network purchasing power, vertical/horizontal integration, network usage and scale, population density, land and labour costs, the use of different technology, retail prices, scope of services offered and the quality of services offered.<sup>21</sup> It is only after these adjustments are made to the benchmark data set that the ACCC can consider differences in the underlying benchmark costs and cost trends between countries.

Benchmarking is of limited use in determining a cost-based pricing approach for the supply of the MTAS. If ACCC wishes to pursue estimates for the cost of supplying the MTAS it should derive an estimates based on actual costs and its own, purpose built TSLRIC+ cost model.

### 'Bill and keep' approach

VHA does not consider there is a coherent underlying economic rationale for a 'bill and keep' pricing approach for a regulated MTAS. 'Bill and keep' arrangements imply that it is not economically efficient to recover the cost of termination from the party that initiates the terminating service (that is, the calling party's network).<sup>22</sup> The only justification for such an approach is if it is economically efficient for the cost of termination to be recovered from the receiving party. Advocates of 'bill and keep' argue that call externalities, that is the benefit of receiving a call, mitigate the need for cost-based termination. This is flawed: if customers highly valued receiving calls then they would be sensitive to the costs imposed on others for calling them and there would be no need to regulate MTAS. There is no evidence of this type of consumer behaviour occurring in the Australian market.

Even if call externalities did exist, then the efficient pricing mechanism at the retail level is to share the total cost of the call between the called and the calling party (that is, receiving party pays). 'Bill and keep' would only be optimal under very specific assumptions such as

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<sup>19</sup> See, for example, *Application by Optus Mobile Pty Limited & Optus Networks Pty Limited* [2006] ACompT at [297].

<sup>20</sup> European Commission 2009, 'Commission recommendation of 7 May 2009 on the treatment of fixed and mobile termination in the EU', *Official Journal of the European Union*,

<sup>21</sup> *Application by Optus Mobile Pty Limited & Optus Networks Pty Limited* [2006] ACompT 8 at [293].

<sup>22</sup> An unintended consequence from such approaches is that it distorts traffic patterns. Call generators no longer bear the cost of call termination, which reduces the cost of calling (all other things being equal), with the likely consequence of an increase in the volume of unsolicited traffic.

when the ratio of the cost of termination to the cost of origination is equal to the ratio between the recipient and the caller's valuation of a call.<sup>23</sup>

The ACCC's reference to the adoption of variations of 'bill and keep' in the US, Canada, Hong Kong and Singapore ignores the negative consumer outcomes in some of these markets. For instance, while revenue per minute is lower and mobile utilisation (measured in minutes) is higher, mobile penetration and the proportion of prepaid users remain lower than comparable developed countries.<sup>24</sup> The overall consequence for consumer welfare is ambiguous.

## 4.2 Determining the relevant market share for the reference operator

When undertaking a cost based assessment of MTAS, it is important to distinguish between scale benefits and cost efficiency in any cost-based pricing approach for the supply of the MTAS. VHA believes that the reference operator should not be based on:

- > the (incumbent operator) with the largest market share; or
- > an operator that is below the minimum efficient scale.

Within these bounds the ACCC has significant discretion over its choice of reference operator. VHA recommends the market share for the reference operator should be set at VHA's current market share.<sup>25</sup> This is so close to the approach implied by a 1/n market share suggested by the ACCC's previous use of a 25% (now 33%) market share scenario as to make no practical difference.<sup>26</sup> However, it has the advantage of ensuring hypothetical TSLRIC+ model outputs can be compared and validated with actual cost data.

## 4.3 Determining the appropriate cost-based price for supply of the MTAS

The determination of an appropriate cost-based range for the MTAS should be informed by the use of both TSLRIC+ and actual cost data. The adoption of two pricing methodologies permits the ACCC to compare and validate cost estimates, helping mitigate the risk of error and providing assurance to access providers that the direct costs of supplying the MTAS can be achieved. For instance, if actual cost data reveals that there are MNOs above the efficient unit cost of termination the ACCC must take into consideration that path by which the "inefficient" MNO(s) can move to the level of cost efficiency determined by the ACCC. If an appropriate path toward efficiency does not exist for the MNO(s) then the regulated price for the MTAS risks causing unintended consequences in the mobile services market.

The ACCC's determination of an appropriate price for the MTAS, which is based TSLRIC+ and actual cost data, should also be informed with regard to the matters set out in section 152BCA of the *Competition and Consumer Act 2010*. For instance, will a cost estimate to the low or high end of a cost range promote the long-term interest of end-users and protect the legitimate commercial interests of carriers? This is a matter of discretion for the ACCC, but its decision should be informed by past experience of the welfare impacts in both the mobile services market (and the current competitive conditions in that market) and the market in which FTM calls are supplied.

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<sup>23</sup> Frontier Economics (2009), *A literature review of papers on MTRs with relevance to B&K*, A report prepared for Vodafone UK, August, p21.

<sup>24</sup> Based on analysis of Bank of America Merrill Lynch, *Global wireless matrix 1Q11*, released on 28 April 2011.

<sup>25</sup> For further discussion see Frontier Economics' report in Appendix D.

<sup>26</sup> The ACCC also tested another scenario with 31% market share based on the achievable share of the three 2G carriers (Telstra, Optus and Vodafone) after removing Hutchison's overall market share of approximately 7 per cent, as it is an operator that only provides standalone 3G services.

## 5. Regulated prices for MTM and FTM termination

VHA recognises that different market dynamics affect FTM and MTM termination and supports the ACCC's view that, from a regulatory perspective, the two downstream market segments are distinct. However, VHA does not immediately believe that such differences warrant different regulatory treatment for the MTAS.

In the following sections, VHA explores the potential for regulated termination rates to be differentiated based on call origination (including the impact of arbitrage risks) with reference to the ACCC's discussion of 'bill and keep' arrangements for MTM termination.

### 5.1 Overview of mobile network interconnection

In most markets (including Australia) a uniform termination charge is set for FTM and MTM services. In circumstances where there has been scope for differentiated FTM and MTM termination rates, the FTM termination rates have generally provided the anchor for MTM termination rates. This appears to be because the potential for arbitrage discourages MNOs (including VHA) from pursuing differentiated access charging for FTM and MTM services. It may also arise because of the traffic asymmetries between operators.

It is not obvious that there is significant consumer benefit to be gained from allowing FTM and MTM termination charges to diverge, even if it were possible to create appropriate incentives for them to do so. Again, this is particularly doubtful in the Australian context (where lower MTM MTAS rates are unlikely to promote competition in the mobile services market in the manner assumed by regulators in other markets) for the reasons explained above.

The previous regulatory regime in New Zealand only required MNOs to provide access undertakings for the supply of the MTAS for fixed line origination. When New Zealand's Commerce Commission commenced its review of mobile termination rates it observed: "The Commission understands from Telecom and Vodafone that mobile-to-mobile termination rates are set at the same level as fixed-to-mobile termination rates".<sup>27</sup> In the UK, the Competition Commission previously recommended different regulatory controls for fixed-to-mobile and off-net termination charges.<sup>28</sup> Vodafone Group plc has informed VHA that while the Competition Commission allowed for different termination rates, in practice the FTM and MTM termination rates were always the same.

Once an anchor has been set for MTM termination rates, it is unlikely that subsequent commercial negotiations will cause rates to depart from that anchor. For example, under the previous regulatory regime, MNOs had the ability to negotiate commercial agreements that differentiated access prices for origination of mobile calls from access prices for origination of fixed calls. Access prices have not been differentiated based on the technical point of origination in VHA's experience.

### 5.2 Arbitrage risks are significant

VHA does not have confidence that regulatory measures can deter incentives for call arbitrage if MTAS prices are differentiated based on origination. In addition to the experiences in other countries, the risk of arbitrage has been noted in the academic literature with Armstrong

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<sup>27</sup> Commerce Commission (2009), *Draft report on whether the mobile termination access services (incorporating mobile-to-mobile voice termination, fixed-to-mobile voice termination and short-message-service termination) should become designated or specified services*, Public version, 30 June, p23.

<sup>28</sup> Competition Commission (2003), *Reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Vodafone, O2, Orange and T-Mobile for terminating calls from fixed and mobile networks*, paragraph 2.540

and Wright stating: “wholesale arbitrage implies that a mobile network cannot sustain a FTM termination charge significantly above its MTM termination charge”.<sup>29</sup>

Arbitrage risks manifest in two ways:

- > converged product arbitrage – for example, through incentives for integrated operators to pursue accelerated deployment of converged products that permit both mobile and geographic numbers to be associated with the same device. Such products might then be ‘optimised’ by fixed or mobile network operators to exploit differences in termination costs that are based on call origination.
- > illegitimate arbitrage – efforts made by a fixed or mobile network operator to disguise call origination (commonly known as ‘call masking’) to take advantage of the lowest termination cost option.

The remedies suggested by the ACCC to prevent illegitimate arbitrage such as specific terms and conditions in the MTAS Final Access Determination may reduce illegitimate arbitrage opportunities. However, it forces MNOs to monitor whether arbitrage is occurring and to accept any associated loss of revenue before any remedial action could be taken by the regulator. Such outcomes impose both significant risks and potential costs on the legitimate business interests of carriers. These costs are incurred needlessly as the direct result of the arbitrage opportunity that would be created by the ACCC if it were to pursue differentiated MTAS rates.

### 5.3 Transaction cost savings are marginal

VHA regards the avoided transaction costs associated with collecting, reconciling and billing the large volume of call detail records (CDRs) as marginal to the cost of supplying the MTAS. Moreover, VHA would be likely to continue to collect information from CDRs for the purposes of business analytics and to monitor for illegitimate arbitrage risks. The avoided transaction costs are therefore likely to be smaller than those envisaged by the ACCC. VHA does not believe avoided transaction costs provide strong grounds for the regulator to depart from a cost-based pricing approach for supply of the MTAS.

In summary, VHA recommends that the ACCC maintain uniform rates for FTM and MTM termination. There is little, if any, economic merit in pursuing ‘bill and keep’ options for MTM termination.

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<sup>29</sup> Ibid.

## 6. Additional considerations

There are two additional considerations in making an Access Determination for the MTAS – the duration of the Access Determination and, in the event that the ACCC regards the forward-looking regulated price for supply of the MTAS is below the current rate, the process by which the ACCC moves from the current MTAS rate to the regulated price.

### 6.1 Duration of the Access Determination

VHA supports the Final Access Determination extending to the end of the declaration period for the MTAS that is, 30 June 2014.

### 6.2 Adoption of a glide path

If the ACCC elects to pursue reductions in the regulated MTAS price then it should be done gradually over several periods. A change in the MTAS rate will have a significant impact on revenue and costs for VHA and other MNOs. It will take time for VHA to undertake the structural changes necessary to adjust its commercial activities.

The impact from changes in the MTAS will not be felt uniformly across all MNOs. Some of VHA's competitors, particularly those with large fixed network operations, may benefit from a reduction in MTAS rates because the reductions are not passed on to fixed consumers. The ACCC's primary focus must be on removing persistent distortions to allocative efficiency in the market in which FTM calls are supplied. Failure to do so will mean that consumers are actually made worse off by further reductions in the MTAS rate.

VHA, the smallest and least profitable of the major MNOs in Australia, will be unambiguously harmed by a reduction in the MTAS rate, while the larger, more profitable integrated operators may benefit through an expansion of their FTM margins. VHA will be required to adjust its commercial practices, including prices, in an attempt to sustain economic returns from customers who will immediately be rendered less profitable as a result of the reduction in MTAS revenues. The implications for the welfare of mobile customers are ambiguous – some customers may find the cost of mobile services increasing (relative to where they would otherwise be) while off-net MTM costs may fall. However, the best way to think about this is that reductions of MTAS within the mobile market simply represent a transfer of costs which are otherwise internalised within the mobile market – there are likely to be winners and losers among both consumers and operators but overall nothing has changed in terms of the underlying costs of the mobile industry.

The key consideration is therefore the impact of changes in MTAS for the FTM market. Without pass through, fixed consumers will derive no benefit from the reductions, while mobile-only operators such as VHA (and its customers) will be unambiguously worse off. A glide path is therefore essential to allow:

- > the ACCC to take steps to mitigate the harm which reductions in MTAS would inflict upon VHA, its customers and upon the prospects for mobile competition; and
- > VHA to adjust its commercial practices once these measures are in place and reductions in MTAS can then be contemplated.

VHA engaged Frontier Economics to assess the linkages between welfare in the fixed-to-mobile market and the mobile services market since 2004.<sup>30</sup> Frontier Economics compares a factual scenario (where MTAS is regulated) to a counter-factual scenario (where the MTAS is not regulated). The waterbed effect was a pivotal component in Frontier Economics' analysis of the economic welfare. Frontier Economics' base case found that under an assumption of a 50% waterbed effect there is an increase in consumer surplus of \$205 million, but a reduction in producer surplus for MNOs of \$1.6 billion. However, a 75% waterbed effect would decrease consumer surplus by \$755 million and decrease producer surplus for MNOs by \$908 million. Fixed Network Operator (FNO) producer surplus has increased by \$2.1 billion. Frontier Economics' analysis suggests that total consumer welfare benefits are small relative to the distortions to allocative efficiency evident in the retail FTM market (as evidenced by the magnitude of the FNO producer surplus), reinforcing the need for the ACCC's primary focus to be on implementing a FTM pass through safeguard while remaining cautious about further reductions in the MTAS rate.

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<sup>30</sup> See Appendix C for Frontier Economics' report.

## A Unrealised consumer benefits from Telstra's lack of FTM pass through

Two scenarios are modelled to estimate the unrealised consumer benefits from Telstra's lack of FTM pass through. Average FTM revenue per minute is used as a proxy for retail prices.

The first scenario assumes full and direct pass through of changes in the indicative price for the MTAS to both residential and business average FTM revenue per minute. This leads to lower weighted average FTM revenues per minute than is observed in the imputation tests. The difference between the observed and estimated full pass through weighted average revenue per minute is then multiplied by the volume of traffic to determine the unrealised consumer benefit from the lack of FTM pass through. Volume effects were ignored (that is, the increase in FTM call volume that would have occurred had the lower FTM prices been realised).<sup>31</sup>

The second scenario assumes that Telstra's imputed non-MTAS related margin for residential and business average FTM revenue per minute is held constant at the level it was in the third quarter of 2004. These margins are 52% and 38% respectively. The non-MTAS margin is applied to Telstra's observed average FTM revenue per minute to establish an estimate of the non-MTAS related margin (including costs). The indicative MTAS price is added to the non-MTAS margin for the residential and business segments. As with the first scenario, the difference between the observed and estimated constant margin weighted average revenue per minute is multiplied by the volume of traffic to determine the unrealised consumer benefit from the lack of FTM pass through. Volume effects were ignored.

**Estimates of unrealised consumer benefits due to the lack of FTM pass through in Telstra's retail FTM services**

Quarter	ACCC data <sup>#</sup>				Weighted ARPMS (\$)	MTAS indicative price (\$)	Change in MTAS indicative price on previous year (\$)	Full pass through				Constant margin plus MTAS rate <sup>^</sup>					
	Residential		Business					Residential Estimated ARPMS (\$)	Business Estimated ARPMS (\$)	Weighted Estimated ARPMS (\$)	Estimated unrealised consumer benefit (\$)	Residential Estimated ARPMS (\$)	Business Estimated ARPMS (\$)	Weighted Estimated ARPMS (\$)	Estimated unrealised consumer benefit (\$)		
	ARPM (\$)	Minutes	ARPM (\$)	Minutes													
3Q 2004	0.43	467,954,870	0.34	350,721,417	0.39	0.21	-	-	-	-	-	-	-	-	-		
4Q 2004	0.44	492,305,963	0.34	337,544,876	0.40	0.21	-	-	-	-	-	-	-	0.44	0.34	0.40	1,232,596
1Q 2005	0.42	471,643,144	0.33	324,142,941	0.39	0.18	-0.03*	0.41	0.31	0.37	15,588,307	0.40	0.30	0.36	20,679,355		
2Q 2005	0.43	460,152,880	0.32	334,506,257	0.38	0.18	-0.03*	0.41	0.31	0.37	13,651,825	0.40	0.30	0.36	19,366,539		
3Q 2005	0.41	460,654,793	0.32	335,888,685	0.37	0.18	-0.03	0.41	0.31	0.37	6,935,677	0.39	0.30	0.35	15,962,127		
4Q 2005	0.42	489,348,012	0.32	326,011,319	0.38	0.18	-0.03	0.41	0.31	0.37	7,517,507	0.39	0.30	0.36	16,545,772		
1Q 2006	0.41	485,197,995	0.30	323,751,900	0.37	0.15	-0.03	0.38	0.28	0.34	23,037,552	0.36	0.26	0.32	35,760,273		
2Q 2006	0.41	467,885,049	0.29	315,139,821	0.36	0.15	-0.03	0.38	0.28	0.34	18,618,459	0.36	0.26	0.32	32,372,320		
3Q 2006	0.38	508,005,980	0.32	299,908,470	0.36	0.15	-0.03	0.38	0.28	0.34	13,860,655	0.35	0.27	0.32	31,941,149		
4Q 2006	0.38	533,337,755	0.32	290,989,423	0.36	0.15	-0.03	0.38	0.28	0.34	16,206,997	0.35	0.27	0.32	33,813,598		
1Q 2007	0.38	532,507,828	0.33	289,543,616	0.36	0.12	-0.03	0.35	0.25	0.31	39,728,510	0.32	0.24	0.29	58,022,274		
2Q 2007	0.38	522,322,249	0.33	289,209,466	0.36	0.12	-0.03	0.35	0.25	0.31	40,179,546	0.31	0.25	0.29	58,012,770		
3Q 2007	0.37	524,700,204	0.34	294,879,984	0.36	0.09	-0.06	0.32	0.22	0.28	65,782,216	0.28	0.22	0.26	83,772,090		
4Q 2007	0.39	532,973,470	0.33	302,320,607	0.37	0.09	-0.06	0.32	0.22	0.28	72,215,627	0.29	0.21	0.26	87,474,470		
1Q 2008	0.38	542,334,061	0.34	284,761,060	0.37	0.09	-0.03	0.32	0.22	0.28	68,589,220	0.29	0.22	0.26	85,633,714		
2Q 2008	0.39	506,166,209	0.33	300,464,750	0.37	0.09	-0.03	0.32	0.22	0.28	69,529,988	0.29	0.21	0.26	84,305,608		
3Q 2008	0.40	492,765,215	0.33	300,035,092	0.37	0.09	0.00	0.32	0.22	0.28	75,332,601	0.30	0.22	0.27	86,395,368		
4Q 2008	0.41	525,486,362	0.34	283,724,957	0.38	0.09	0.00	0.32	0.22	0.28	81,049,652	0.30	0.22	0.27	90,510,967		
1Q 2009	0.40	520,431,634	0.32	279,708,229	0.38	0.09	0.00	0.32	0.22	0.28	74,719,133	0.30	0.21	0.27	86,279,265		
2Q 2009	0.41	492,755,600	0.32	275,657,690	0.38	0.09	0.00	0.32	0.22	0.28	72,610,487	0.30	0.21	0.27	83,217,496		
3Q 2009	0.40	486,731,813	0.32	283,671,726	0.37	0.09	0.00	0.32	0.22	0.28	66,876,333	0.29	0.21	0.26	80,323,569		
4Q 2009	0.41	495,494,438	0.32	262,981,329	0.38	0.09	0.00	0.32	0.22	0.28	71,147,596	0.30	0.21	0.27	81,849,577		
1Q 2010	0.40	469,271,958	0.31	262,996,554	0.37	0.09	0.00	0.32	0.22	0.28	61,785,917	0.30	0.21	0.26	75,232,462		
2Q 2010	0.40	441,953,557	0.32	254,565,658	0.37	0.09	0.00	0.32	0.22	0.28	62,200,231	0.30	0.21	0.26	73,516,076		
3Q 2010	0.38	451,041,351	0.31	258,227,379	0.36	0.09	0.00	0.32	0.22	0.28	52,835,318	0.29	0.21	0.26	69,455,956		
4Q 2010	0.36	481,484,670	0.31	240,994,084	0.34	0.09	0.00	0.32	0.22	0.28	43,309,187	0.28	0.21	0.25	65,877,867		
<b>TOTAL</b>											<b>1,133,308,542</b>					<b>1,457,553,058</b>	

\* Assumption

<sup>^</sup> Non-MTAS residential FTM margin constant @ 3Q04 rate - 52%; Non-MTAS business FTM margin constant @ 3Q04 rate - 38%.

<sup>#</sup> Data sourced from the ACCC's quarterly *Imputation testing and non-price terms and conditions* reports

<sup>31</sup> Volume effects, which relate to estimates or assumptions regarding the own price elasticity of FTM calls, have been included in the welfare analysis undertaken by Frontier Economics (see Appendix C).



## B Analysis of the TSLRIC+, pure LRIC and actual cost pricing approaches

VHA provides further analysis of the TSLRIC+, pure LRIC and actual cost pricing approaches below.

### B.1 TSLRIC+ approach

The ACCC has used the total service long-run incremental cost of providing a service, including a mark up for common costs, (TSLRIC+) in pricing principles for the MTAS, fixed line services and transmission capacity services. TSLRIC+ consists of the operating and maintenance costs the firm incurs in providing the service, as well as providing a normal rate of return on capital and an allocation for common costs related to the provision of the service. TSLRIC+ is intended to measure the cost that the firm incurs over the long-run in providing all traffic services. A TSLRIC approach requires these costs to be allocated to the different traffic services that contribute to the total traffic increment.

A TSLRIC+ approach, which is based on forward-looking costs, replicate the prices that would prevail assuming that access providers were able to face effective competition (in circumstances where there are no barriers to entry or exit). An explicit consequence of TSLRIC+ approaches is that higher cost firms will not remain viable. In principle, it replicates the outcome most likely to be observed in a competitive market over the long-run.

Network and asset optimisation is an important part of the TSLRIC+ approach but in certain circumstances additional safeguards may be required to ensure cost recovery. The optimisation process is adopted to remove excess capacity and redundant services from the value of the asset base. However, if economically efficient investment is to occur then access providers require an *ex ante* expectation of full cost recovery. Optimisation processes that create an expectation of less than full cost recovery will reduce the expected return on capital, thereby deterring future investment.

The ACCC requires a new TSLRIC+ model that reflects the hybrid 2G / 3G networks deployed by each MNO in Australia. (The ACCC's previous approach to TSLRIC+, the WIK model, was based on a hypothetical, optimised 2G network design).<sup>32</sup> The new cost model should include capital and operating costs associated with the operation of hybrid networks, including the costs associated with customers migrating from 2G to 3G technologies. The ACCC should also be mindful of issues identified with the WIK model. For instance, Analysys Mason previously indicated concerns about some of the configuration and parameterisation assumptions used in the WIK model in relation to: site sharing, market share, depreciation, traffic handling and network dimension, the cost of capital and the treatment of common costs.<sup>33</sup> It is important that any new TSLRIC+ (or pure LRIC) cost model built by the ACCC are undertaken in a consultative and transparent manner so that MNOs have assurance that model outputs are accurate and credible.

### B.2 Pure LRIC

By assuming that common costs cannot be recovered through regulated pricing for the MTAS, pure LRIC approaches assume that common costs should be recovered from retail mobile services. Therefore, if the ACCC were to adopt a pure LRIC approach it would change the structure of mobile service pricing compared to what would otherwise have occurred. Specifically, MNOs would have to recover more costs from their retail mobile services because they are not able to recover such costs through the regulated MTAS price.

<sup>32</sup> ACCC (2007), *MTAS Pricing Principles Determination 1 July 2007 to 31 December 2008*, November, p114.

<sup>33</sup> Analysys (2007), *Review of WIK's mobile network cost model*, report prepared for Vodafone Australia, 6 August.

There is no reason to assume a change in the structure of mobile service pricing would be welfare improving. It is far more likely, given the Australian experience with lack of fixed-to-mobile pass through, the evidence suggests that the adoption of pure LRIC would have an adverse impact on consumer welfare and is therefore contrary to the long-term interest of end-users. In the case of fixed-to-mobile calls, MNOs will receive less termination revenue, and most of the difference in the MTAS price between a TSLRIC+ approach and a pure LRIC would accrue to fixed and integrated operators. There would only be a limited benefit to fixed voice services. Such an outcome is unconscionable given the well-documented issues with lack of FTM pass through.

### B.3 Actual cost data approaches

Depreciated Actual Cost (DAC) data is generally used in top-down modelling approaches. However, actual cost data is also useful for bottom-up modelling approaches such as TSLRIC+, where accounting data can be collected from a specific carrier or carriers and used to assist parameterisation of a cost model for a hypothetical operator.

The main strengths of using DAC in a top-down modelling approach are:

- > information on the operating costs and fixed assets used by MNOs is readily available and can be easily collected;
- > the use of DAC often leads to far less contention between the regulator and access providers over network design or the treatment of historic costs;
- > it captures costs that may not be immediately apparent from bottom-up cost models; and
- > according to Analysys Mason, it is better at incorporating a wide range of indirect operating costs or estimating the appropriate level of costs than bottom-up cost models.<sup>34</sup>

It is legitimate for the regulator to consider whether actual costs are likely to reflect the efficient level of costs. However, the ACCC should accept the proposition that, in a competitive market, firms that depart significantly from the efficient cost of providing services are unlikely to be sustainable. Competition, particularly in circumstances where it has persisted for about two decades, provides a very strong incentive for firms to ensure that short-run and long-run costs reflect their efficient levels.

The main difficulty with the use of actual cost is in the allocation of costs to a specific service. There is no single correct means of cost allocation. Routing factors may, for instance, be useful for an engineering based allocation of asset costs between services but they will not account for demand effects (that is, consumer willingness-to-pay) for each service provided using the asset. If the ACCC were to adopt the use of actual cost data to estimate the cost of supplying the MTAS, then most of the work required to imply such an approach would focus on determining an appropriate cost allocation methodology. This could take a period of several months to implement across all MNOs.

Top-down approaches that rely on DAC data have also been criticised because they:

- > may not reflect the long-run incremental cost of a specific service;
- > rely on accounting depreciation that is not necessarily consistent with economic approaches to recovering capital investments over time.

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<sup>34</sup> Analysys (2007), *Review of WIK's mobile network cost model*, prepared for Vodafone Australia, 6 August, p6.

- > may not properly account for structural changes in the underlying investment drivers through time (for example, investment in LTE).
- > may permit monopoly firms to incur inefficient costs and to earn returns on inefficient investments.

These issues must be placed within context. Each criticism reflects a concern about the suitability of using actual cost data to promote dynamic efficiency. The concern is understandable, actual cost data is not, by definition, forward-looking. However, top-down approaches such as the Building Block Model can incorporate actual cost data to determine forward-looking revenue requirements. Indeed, the dynamic efficiency issues associated with actual cost data are generally well understood within a regulatory context and a range of incentives have been devised and used in industries that rely on actual cost data to set regulated prices. For example, demand-weighted price caps are used to address structural changes in the underlying investment drivers through time. In addition, ex-post prudency tests, ex-ante capital expenditure assessments and productivity-based incentives for operating expenditure are commonly used by regulators that adopt top-down cost approaches to discourage inefficient investment and to encourage efficiency in operating costs.

The difficulty top-down approaches have in estimating the long-run incremental cost of a specific service does create a legitimate concern about the current state of allocative efficiency in the market for the regulated service. In particular, top down approaches make it difficult for the regulator to assess the efficiency of, for instance, the legacy network design and configuration. As the mobile services market has been competitive for a significant period of time, this should be less of a concern in setting regulated prices for the MTAS.

C Frontier Economics' report: *Welfare analysis of implications of reduced mobile termination rates*



# **Welfare analysis of implications of reduced mobile termination rates**

**A REPORT PREPARED FOR VODAFONE HUTCHISON AUSTRALIA**

July 2011



# Welfare analysis of implications of reduced mobile termination rates

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# Welfare analysis of implications of reduced mobile termination rates

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## Executive summary

Frontier Economics (Frontier) has been asked by Vodafone Hutchison Australia (VHA) to develop an economic model to analyse the welfare effects of past reductions in the price of the mobile terminating access service (MTAS), and prepare a report in relation to this modelling activity.

In particular, VHA has asked us to extend the welfare analysis of past reductions in the price of the MTAS in Australia beyond that previously undertaken by Analysys Mason for the ACCC in 2009.

### ***Reductions in the price of the MTAS can impact on social welfare in a number of different ways***

Reductions in the price of the MTAS can impact the welfare of two kinds of consumers:

- Fixed line subscribers who make calls to mobile subscribers
- Mobile subscribers who receive calls from fixed line consumers, and who make calls between themselves.

The ways in which reductions in the price of the MTAS impact on consumer, producer and social welfare are, in some instances, direct and clear. In other ways, however, the effects can be subtle and less obvious. In this regard, reductions in the price of the MTAS are likely to:

- Lead to reductions, at least to some extent, in the price of fixed-to-mobile (FTM) calls. To the extent these calls are initially priced above their underlying cost of production, this decrease in price is likely to improve both consumer and social welfare. The welfare of suppliers (i.e. producer surplus) of FTM calls will also increase if reductions in the price of the MTAS are not passed through in full to consumers of FTM calls.
- Increase the value of mobile subscriptions. This is because any increase in the volume of FTM calls that follows a reduction in the price of the MTAS will be likely to be valued by the mobile subscribers who receive (and largely do not have to pay) for these calls. This indirect effect of reduced MTAS rates will increase consumer, producer and social welfare.
- Lead to increases in the price of retail mobile services. This is because reductions in the price of the MTAS will reduce the marginal revenues mobile network operators (MNOs) acquire from subscribers to their network, thereby decreasing the extent to which MNOs are prepared to compete for subscribers on their networks. This so-called ‘waterbed effect’ is recognised in both the academic literature and in a range of regulatory decisions with respect to the MTAS. It has also been shown in empirical studies from overseas jurisdictions. To the extent reductions in the price of

the MTAS lead to increases in the prices of retail mobile services, this will be likely to lead to a lesser number of mobile subscriptions than would otherwise be the case in the absence of lower prices for the MTAS. In turn, this reduction in mobile subscriptions will be likely to reduce consumer and social welfare.

- Indirectly reduce consumer and social welfare because the lesser number of mobile subscribers means that other subscribers – both fixed and mobile – will have less mobile subscribers that they can call. The consequent reduction in mobile-to-mobile (MTM) and FTM calls will decrease consumer, producer and social welfare. The reduction in mobile subscribers will also reduce the welfare of fixed-line subscribers who will now receive less mobile-to-fixed (MTF) calls than would have otherwise been the case if subscription levels had been higher.

It is clear, therefore, that reductions in the price of the MTAS can increase and decrease consumer and social welfare in a number of different ways. Whether consumer and social welfare will increase or decrease overall, however, is not clear. Instead it will depend on a number of key factors, including the extent of FTM pass-through; the extent of the waterbed effect; the extent to which lost mobile subscribers receive calls from other fixed and mobile subscribers; and the responsiveness of calls and mobile subscription levels to changes in the prices of these services.

### ***Previous studies of welfare effects in Australia are limited***

The previous analysis conducted for the ACCC by Analysys Mason considers the first of the welfare effects set out above – that is, the extent to which reductions in the price of the MTAS led to reductions in the price of FTM calls. Given the Analysys Mason analysis assumes that the price of the MTAS (and by extension the price of FTM calls) lies above its underlying cost of production, this study unambiguously finds that reductions in the price of FTM calls over the period from 2004-05 to 2008-09 led to increases in consumer and social welfare.

We believe, however, that a proper analysis of the welfare effects of reductions in the price of the MTAS should be extended to cover the other welfare effects referred to above. Of greatest importance, a full welfare analysis must consider the impact of the waterbed effect on consumer and social welfare.

In this report, we have extended the analysis of Analysys Mason to capture a broader range of welfare effects than simply the increase in welfare that follows from reductions in the price of FTM calls. In doing this, we have had regard to a broader welfare model previously constructed by the New Zealand Commerce Commission to analyse the welfare effects of reduced prices for the MTAS. We have also extended the period of our analysis to cover the period from 2004-05 to 2009-10.

### ***Past reductions in the price of the MTAS may not have improved consumer and social welfare***

The analysis contained in our report leads us to conclude that:

- First, expanding the analysis of the welfare effects of reduced MTAS prices to include effects experienced in retail mobile markets means it is not clear whether consumers and society as a whole were made better or worse-off as a result of reduced prices for the MTAS over the period from 2004-05 to 2009-10.
- Second, while reductions in the price of the MTAS are likely to improve consumer surplus for fixed-line subscribers, it is also likely to reduce welfare for mobile subscribers. Whether the gains to fixed-line consumers exceed the losses for mobile consumers depends crucially on the size of the waterbed effect relative to the extent of FTM pass-through. If FTM pass-through is low and the waterbed effect is high, it is almost certain that consumers as a whole will be worse-off as a result of reductions in the price of the MTAS.
- Third, changes to key assumptions regarding the own-price elasticities of demand for FTM calls, MTM calls and mobile subscriptions can greatly reduce any welfare gains one might expect from reductions in the price of the MTAS.
- Fourth, our analysis of FTM call price changes in Telstra's Annual Reports and the ACCC's imputation testing reports lead us to conclude that business consumers are likely to have benefitted far more from reductions in FTM call prices than residential consumers in the past.

Based on conservative assumptions about the level of the waterbed effect, elasticities of demand and the proportion of FTM and MTM calls received by marginal subscribers, our analysis shows that the greatest beneficiaries of past reductions in the price of the MTAS have been fixed network operators (FNOs). While consumers have benefited under our conservative set of assumptions, their benefit is less than 10 per cent of that enjoyed by FNOs. This is because of the extent to which FNOs have been able to hold-on to a large proportion of reductions in the price of the MTAS through low levels of FTM pass-through, and the extent to which mobile consumers suffer offsetting welfare detriments as a result of the waterbed effect.

Once we test for less conservative assumptions, it becomes less clear that consumers and society as a whole have benefited from past reductions in the price of the MTAS. In one sensitivity test, consumers were made worse-off by more than \$3.2 billion; and society as whole was made worse-off by more than \$1.1 billion over the modelled period. Indeed, our analysis suggests it is possible that the only beneficiaries of reductions in the price of the MTAS have been FNOs, of which Telstra would be the most significant. In contrast, MNOs, consumers and society as a whole may well have been substantially worse off as a

result of reductions in the price of the MTAS over the period from 2004-05 to 2009-10.

***Whether consumers and society are better or worse-off will be heavily influenced by the relative state of competition in fixed and mobile markets***

It is an inescapable reality that regulators face a trade-off when considering how much (if any) they should reduce the price of the MTAS.

In simple terms, reductions in the price of the MTAS represent a reduction in costs for FNOs, and a decrease in revenues for MNOs. The extent to which consumers and society as a whole will be better or worse-off depends in absolute and relative terms on:

- How much of the input cost reduction FNOs pass on to fixed consumers in the form of lower FTM prices (i.e. the extent of FTM pass-through)
- How much MNOs are able to recover their lost termination revenue from their subscribers (i.e. the extent of the waterbed effect).

In turn, the extent of FTM pass through and the waterbed effect will be heavily determined by the state of competition in each of the fixed and mobile sides of the market. If competition over the provision of fixed-line services is weak, we would expect the level of FTM pass-through to also be low. This would appear to be the case in Australia, where the ACCC has consistently observed that competition in fixed-line markets is weak, and that past levels of FTM pass-through have been poor.

Conversely, if competition over the provision of mobile services is strong, we would expect that the extent of the waterbed effect would also be strong. That is, MNOs would be closer to operating under a “zero profit constraint” whereby any reductions in the price of the MTAS will need to be followed by increases in retail prices for mobile services in order for MNOs to remain profitable. We note that the ACCC has consistently observed over the years that the retail mobile market appears to be more competitive than fixed-line markets.

It follows, therefore, that where competition in retail mobile markets is stronger than competition in fixed-line markets, we would expect that the waterbed effect may be stronger than the level of FTM pass-through. Where this is the case, the ACCC should expect that reductions in the price of the MTAS will, on balance, be far less likely to be welfare enhancing for consumers and society as a whole, and may indeed be welfare reducing.

# 1 Introduction

Frontier Economics (Frontier) has been asked by Vodafone Hutchison Australia (VHA) to develop an economic model to analyse the welfare effects of past reductions in the price of the mobile terminating access service (MTAS), and prepare a report in relation to this modelling activity.

In particular, VHA has asked us to extend the welfare analysis of past reductions in the price of the MTAS in Australia beyond that previously undertaken by Analysys Mason for the ACCC in 2009.<sup>1</sup>

## 1.1 The ACCC has greatly reduced MTAS rates in the last decade

The MTAS – or variants of it – has been a declared service under the Competition and Consumer Act (CCA) since the introduction of Part XIC into the Trade Practices Act in 1997.

In the early periods of regulating access to this service, however, the Australian Competition and Consumer Commission (ACCC) realised that the MTAS was unlike other regulated telecommunications access services. In particular, the ACCC recognised that:

- More than one access provider provided the MTAS. Indeed, it was provided by a number of different mobile network operators (MNOs) that were otherwise in competition with each other to win subscribers to their mobile networks.
- Regulation of the MTAS may have impacts on prices for retail services provided by MNOs. In particular, it believed that the prices for retail mobile services are linked to prices for the MTAS. In this regard, the ACCC observed that:

The revenue streams from GSM [i.e. mobile] termination, mobile access services and outgoing call services are interdependent, such that with effective competition a change in one revenue stream will, in the long term, be associated with an offsetting change in another stream.<sup>2</sup>

As a result of these and other reasons, the ACCC proposed a unique pricing principle for access to the service. In particular, it adopted a retail benchmarking pricing principle whereby reductions in the price of the MTAS were to be linked to reductions in the price of retail mobile services. Under this pricing principle,

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<sup>1</sup> See Analysys Mason, *Regulatory Treatment of Fixed-to-Mobile Passthrough*, October 2009.

<sup>2</sup> ACCC, *Pricing Methodology for the Termination Service*, Final Report, July 2001 at p. 5.

the price of the MTAS would be required to decrease at the same rate as reductions in the average retail price of mobile services.<sup>3</sup>

Following a review of pricing outcomes for retail mobile services during the ACCC's 2004 Mobile Services Review, the ACCC chose to move away from this pricing principle. Instead, it decided that the price of the MTAS should reduce in steady increments over a glide path toward the underlying total service long-run incremental cost (TSLRIC) of providing the service.<sup>4</sup> Under a pricing principle determination released in June 2004, the ACCC set a glide path of rate reductions that would see the price of the MTAS decrease according to the schedule of rates set out in Table 1 below.

Table 1: ACCC 2004 MTAS Pricing Principle Determination

Period	MTAS Price
1 July 2004 – 31 December 2004	21 cpm
1 January 2005 – 31 December 2005	18 cpm
1 January 2006 – 31 December 2006	15 cpm
1 January 2007 – 30 June 2007	12 cpm

Source: ACCC, Pricing Principles for the Mobile Terminating Access Service, 30 June 2004

Subsequently, the ACCC released new pricing principles in 2007, which saw the price of the MTAS reduce to 9 cpm.<sup>5</sup> This rate was maintained in a subsequent pricing principle released in 2009,<sup>6</sup> and the regulated rate of the service presently remains at this level.

The ACCC is now considering whether the price of the MTAS should be set in accordance with the existing TSLRIC pricing principle, and whether the price of the service should be reduced further.

<sup>3</sup> *Ibid*, at p. 6.

<sup>4</sup> Where TSLRIC was augmented to include a contribution toward the common costs of providing the service – so called “TSLRIC+”.

<sup>5</sup> ACCC, *MTAS Pricing Principles Determination 1 July 2007 to 31 December 2008*, Report, November 2007.

<sup>6</sup> ACCC, *Domestic Mobile Terminating Access Service Pricing Principles Determination and indicative prices for the period 1 January 2009 to 31 December 2011*, March 2009.

## 1.2 Fixed-to-mobile (FTM) pass through has been disappointing under regulation

A key motivation for the ACCC's decisions to continue to declare the MTAS has been concerns about the effects of above-cost prices for the service on competition in the market for fixed-line services. As a result of this, the ACCC has always hoped that reductions in the price of the MTAS would lead to increased competition in the market for fixed-line services, with consequent reductions in the price of fixed-line telecommunications services – especially in relation to the provision of calls from fixed-line consumers to mobile consumers (so-called “fixed-to-mobile (FTM)” calls).

Where competition is not effective in the market for fixed-line services, however, there is always a risk that reductions in the price of the MTAS will not be ‘passed-through’ in full to consumers of fixed-line services. For instance, and as noted by the ACCC in 2004:

Basic economic analysis would suggest that a profit-maximising monopolist with constant long-run incremental cost would, *ceteris paribus*, pass-through 50 per cent of any cost reduction, while a totally competitive market would (again, everything else being equal) pass-through the entire cost saving in lower retail prices.<sup>7</sup>

At the time of its decision to start significant reductions in the price of the MTAS in 2004, the ACCC was nonetheless hopeful that reductions in the price of the MTAS would help to promote competition in fixed-line markets such that the price of FTM calls might decrease by *more* than the regulated reductions in the price of the MTAS. In this regard, the ACCC noted in 2004 that:

... as competition in the market within which FTM services are provided improves, it is possible that reductions in the price of the MTAS could lead to even greater absolute reductions in the price of FTM (and other fixed-line services) call minutes.<sup>8</sup>

History has shown, however, that these hopes have not come to fruition, with the ACCC observing in 2009 that:

The ACCC is disappointed with respect to reductions in retail FTM prices, as it appears no significant reduction in retail FTM prices has emerged despite earlier expectations.<sup>9</sup>

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<sup>7</sup> ACCC, *Final Decision on whether or not the Commission should extend, vary or revoke its existing declaration of the mobile terminating access service*, June 2004, at p. 222.

<sup>8</sup> *Ibid.*, at p. xii.

<sup>9</sup> ACCC, *Domestic Mobile Terminating Access Service Pricing Principles Determination and indicative prices for the period 1 January 2009 to 31 December 2011*, March 2009 at p. 22.

### 1.3 Analysys Mason has only estimated the welfare impacts of reduced MTAS rates in the market for FTM calls

If FTM pass-through is incomplete, it is reasonable to ask whether it is welfare enhancing to mandate reductions in the price of the MTAS. To assist in this regard, the ACCC commissioned Analysys Mason in 2009 to estimate whether reductions in the price of the MTAS since 2004 have increased consumer and social welfare. Analysys Mason was also directed to consider whether the gains from regulation would have been greater had the ACCC also mandated that reductions in the price of the MTAS should have been passed-through in full in the price of FTM calls.

To analyse the welfare effects of past reductions in the price of the MTAS, the Analysys Mason study focussed primarily on the impacts of reduced MTAS rates on the prices of FTM calls. In this regard, Analysys Mason concluded that:

... regulating MTAS does increase the overall social surplus ... the combined producer surplus for MNOs and FNOs decreases as a result of regulation. However, this is more than compensated by the increase in consumer surplus.<sup>10</sup>

One observation with respect to this analysis, however, is that it did not seek to estimate the size of any welfare effects that might be likely to occur in other related markets. In particular, it did not estimate the welfare effects that might be expected to have followed reductions in the price of the MTAS in the market for retail mobile services.

To help analyse the broader effects of past reductions in the price of the MTAS, VHA has asked us to extend the analysis conducted by Analysys Mason to take account of impacts these rate reductions would be likely to have had in the retail mobile services market.

### 1.4 Structure of this report

The remainder of this report is structured so that:

- Section 2 explains the methodology and input assumptions we have applied to estimate the broader range of effects than those measured by Analysys Mason
- Section 3 sets out the results of our modelling, and analyses the implications of these results.

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<sup>10</sup> Analysys Mason, *op. cit.*, at p. 1.



## 2 Welfare modelling framework and assumptions

In this section of our report, we set out:

- the methodology we have used to estimate the welfare effects of reduced MTAS rates over the period 2004-05 to 2009-10
- the assumptions we have made when choosing inputs for this model.

### 2.1 Estimating the welfare effects of reduced MTAS rates

#### 2.1.1 There are a number of welfare effects that must be considered

Reductions in the price of the MTAS will be likely to have a number of conflicting impacts on social welfare with respect to the production and consumption of fixed and mobile telecommunications services. For instance, reductions in the price of the MTAS will be likely to have the following effects:

- First, reductions in the price of the MTAS will likely lead to some level of reduction in the price of FTM calls. This will increase social welfare with respect to the production and consumption of these calls to the extent consumers value these calls at more than the marginal cost of producing them.
- Second, for reasons set out in section 2.2.2 below, reductions in the price of the MTAS will likely lead to increases in the price of retail mobile services, relative to what they would be in the absence of these reductions. In turn, this will be likely to lead to reductions in the level of mobile subscriptions relative to what they otherwise would have been, with a consequent reduction in social welfare to the extent these network subscriptions generate benefits greater than the marginal cost of providing them.
- Third, the reduction in mobile subscribers will also reduce welfare for other fixed and mobile subscribers who lose the benefit they would otherwise enjoy from calling these subscribers.

Whether or not the benefits to social welfare from reductions in the price of the MTAS will outweigh the losses in social welfare is not clear. It will depend on a range of factors, including the extent of FTM 'pass-through'; the extent of lost MTAS revenues MNOs seek to recover through increased prices for retail mobile services, and the way they attempt to do so; the responsiveness of fixed-line and mobile consumers to any consequent changes in prices; and the value of

calls made by both fixed and mobile consumers to those subscribers that may be lost following reductions in the MTAS.

## 2.1.2 Previous approaches to estimating welfare effects have focused on only some of these effects

During 2009, the ACCC engaged Analysys Mason to estimate the welfare effects of regulated reductions in the price of the MTAS.<sup>11</sup> In doing so, it focused on the welfare gains that would follow from reductions in the price of the MTAS for callers of FTM calls. On the basis of this analysis, Analysys Mason was able to estimate the direct welfare effects on FTM callers of different types of regulation, including by way of imposing regulations that mandated FTM pass-through.

While this analysis enables the ACCC to understand the welfare gains that might follow from the first of the effects set out in section 2.1.1 above, it does not attempt to measure any of the other welfare effects.

VHA has asked us to extend the modelling previously conducted by Analysys Mason to attempt to capture the other welfare gains and losses referred to in section 2.1.1 above. In order to do this, we have had regard to the welfare model used by the New Zealand Commerce Commission (NZCC) when it sought to estimate the welfare effects that might follow from alternative forms of regulation of the MTAS.<sup>12</sup>

The benefit of a model of this type is that it goes beyond simply capturing the direct benefits to consumers of FTM calls from a reduction in the price of the MTAS, and seeks to capture other social welfare benefits and costs that will follow from reduced prices for the service. In particular, the methodology we have used provides a mechanism for capturing:

- The direct welfare loss created by the lesser number of mobile subscribers that would follow if reduced MTAS rates lead to an increase in retail mobile charges over and above those that would arise without reductions in the price of the MTAS
- The indirect welfare loss for fixed and mobile consumers that follows from having less mobile subscribers for them to call.

We believe it is important that this fuller range of effects are captured if we are to better understand the overall welfare effects of a reduction in the price of the MTAS.

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<sup>11</sup> The results of this analysis are set out in Analysys Mason, *op. cit.*

<sup>12</sup> A public version of the NZCC's model can be found at <http://www.comcom.govt.nz/mobiletomobiletermination/>. The model can be found under the tab "Draft Report – 30 June 2009".

## 2.2 The welfare model methodology

The model we have developed to estimate the broader suite of welfare changes that would be likely to follow from a reduction in the price of the MTAS involves a number of discrete steps – each aimed at estimating the three key effects detailed in section 2.1.1 above. The individual steps are summarised below, with an indication of the key inputs needed to model each effect. The full set of inputs we have used in our analysis is summarised in section 2.3 below.

### 2.2.1 The direct welfare gains from lower FTM prices

The first welfare effect modelled in our analysis involves the direct welfare gains that follow when reduced MTAS rates lead to lower prices for FTM calls. This is the welfare gain measured by Analysys Mason in the work it previously conducted for the ACCC.

In order to measure this effect, we first assume that the MTAS is an input acquired by providers of FTM calls in order for fixed-line consumers to make calls to mobile subscribers. Consistent with the model developed by Analysys Mason, the assumptions we use in our model mean that the price of the MTAS lies above its total service long-run incremental cost of production, inclusive of a contribution toward the recovery of common costs (i.e. TSLRIC+). Further, we assume that there are other costs involved in the provision of FTM calls, including the costs of fixed-line origination of these calls and the costs of transmission so that the call can progress from a fixed-line caller to the mobile network of the consumer receiving the call. Finally, the assumptions we adopt in our modelling mean that the retail price of FTM calls lies above the TSLRIC+ of providing these calls, and that the extent of this difference is greater than the difference between the price of the MTAS and its underlying costs of production. These assumptions are summarised in equations (1), (2), (3) and (4) below:

$$P_{MTAS} > TSLRIC+_{MTAS} \quad (1)$$

$$TSLRIC+_{FTM} = TSLRIC+_{MTAS} \text{ plus } TSLRIC+_{FTM \text{ other}} \quad (2)$$

$$P_{FTM} > TSLRIC+_{FTM} \quad (3)$$

$$(P_{FTM} - TSLRIC+_{FTM}) > (P_{MTAS} - TSLRIC+_{MTAS}) \quad (4)$$

Where  $P_{MTAS}$  and  $P_{FTM}$  are the price of the MTAS and the retail price of a FTM call respectively; and  $TSLRIC+_{MTAS}$ ,  $TSLRIC+_{FTM \text{ other}}$  and  $TSLRIC+_{FTM}$  are the

underlying TSLRIC+ of each of the MTAS, the other elements needed to provide a retail FTM call and the full TSLRIC+ of providing a FTM call.

Importantly, equation (4) suggests that fixed-line operators make a margin over the incremental cost they face (inclusive of a contribution towards their common costs) when providing a FTM call to consumers.<sup>13</sup>

From this starting point, we can then estimate the welfare gains that flowed from a reduction in the price of the MTAS over the modelled period. To do this, we have to take account of two effects:

- First, a reduction in the price of the MTAS is assumed to lead to a decrease in the price of FTM calls. If we assume the same initial elasticity of demand as that modelled by Analysys Mason and that the demand curve for FTM calls is linear, we are able to estimate what level of output should have followed from this reduction in the price of FTM calls. In other words, the decreased price for FTM calls should have led to a movement along the FTM demand curve.
- Second, however, we have observed that the increase in demand for FTM calls was higher than that predicted by the assumed elasticity of demand for FTM calls in the early years of the model; and lower in the later periods of the model. Consistent with the approach used by Analysys Mason in its welfare analysis, we have therefore needed to make assumptions about the extent to which demand for FTM calls “shifted” due to exogenous factors from one year to the next.<sup>14</sup> In order to simplify our modelling, we have assumed that the shift of the demand curve for FTM calls occurred on the first day of each period.

Given these assumptions, we are then able to model the first round of welfare changes with respect to the provision of FTM calls following a reduction in the price of the MTAS (and the consequent reduction in the price of FTM calls). In doing so, it should be noted that we have not had to make assumptions about the extent of FTM pass-through during this period. By relying on actual data regarding prices of FTM calls, we have not had to make any predictive assumptions about what the level of FTM pass-through would have been under regulation. We have assumed, however, that the only factor driving decreases in FTM call prices over the modelled period is reductions in the MTAS rate. This is consistent with assumptions made by Analysys Mason, who appear to have

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<sup>13</sup> Where the input cost for the MTAS faced by a fixed-line operator is the price of the MTAS, and not the underlying cost of providing the service, as set out in equation (1).

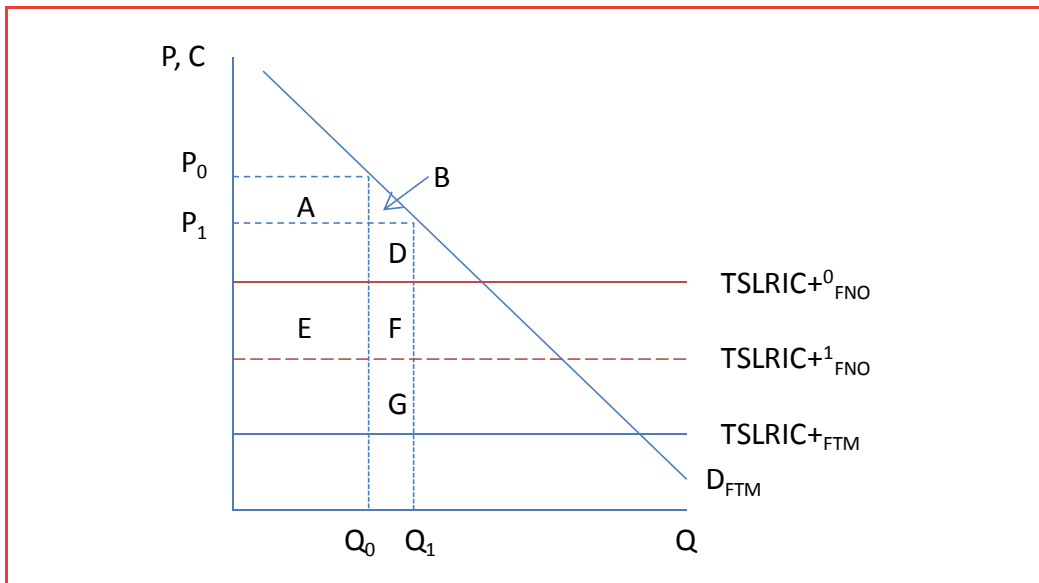
<sup>14</sup> In this regard, Analysys Mason notes that “changes in consumer surplus are based on the demand curve of that year, which will shift compared with previous years to match through the new price/quantity point. The reason for the shift can be attributed to exogenous growth in calls, based on increased demand resulting from more mobile phones to call, for instance.” See Analysys Mason, *op. cit.*, at p. 37.

assumed that the non-MTAS costs of providing FTM calls remained constant over the modelled period.

The modelled welfare effects from a reduction in the price of FTM calls are shown diagrammatically in Figure 1 below. In this regard,  $TSLRIC+^0_{FTM}$  represents the underlying cost faced by a FNO when providing a FTM call to consumers. This cost includes the price it pays for the MTAS. It follows, therefore, that a reduction in the price of the MTAS will lead to a reduction in the costs it faces when providing FTM calls. This is represented by a downward shift in the underlying cost of providing FTM calls to  $TSLRIC+^1_{FTM}$ . In this context, a reduction in the price of FTM calls from  $P_0$  to  $P_1$  is assumed to lead to an increase in demand for the service from  $Q_0$  to  $Q_1$ .<sup>15</sup> As a result of this, four effects follow:

- Consumers of FTM calls will enjoy an increase in consumer surplus equal to the area A + B
- Producers of FTM calls will have an *increase* in their producer surplus equal to the area D + E + F – A
- MNOs will have a *decrease* in producer surplus equal to the area E – G
- Society as a whole will experience an increase in social welfare equal to the area B + D + F + G.

Figure 1: Welfare effects of a reduction in the price of FTM calls



Source: Frontier Economics

<sup>15</sup> It should be noted that the welfare changes shown in Figure 1 are based off the “shifted” demand curve, which assumes that demand for FTM calls shifted on the first day of the period under consideration.

## 2.2.2 The direct welfare losses from higher mobile subscription charges

The second welfare effect modelled in our analysis relates to the increase in retail mobile prices one should expect to follow from a decrease in the price of the MTAS. This effect is sometimes referred to as the “waterbed effect”. In essence, the theory of the waterbed effect rests on the notion that each mobile subscriber brings to a MNO two streams of revenue – wholesale revenue, in the form of MTAS payments for calls made to the subscriber<sup>16</sup>; and retail revenues, in the form of retail prices paid for calls made by that consumer. In this respect, Genakos and Valletti note that:

Since a mobile network is a bottleneck for received calls, money can be made over termination. Thus, each potential mobile customer comes with a termination rent. This does not imply, however, that mobile firms will necessarily make supernormal profits overall. In fact, if there is enough competition among mobile networks, then competition will exhaust this rent, and operators will offer subsidized prices to their mobile customer. ... If regulation cuts somehow the termination rent, then the subsidy to mobile customers will be reduced too. In the limiting case, no subsidy could be given at all to consumers if regulation eliminates entirely any termination rent.<sup>17</sup>

Importantly, it also need not be the case that the waterbed effect only occurs where there is perfect (or effective) competition between MNOs. Even if competition between MNOs is only weak, it will still be the case that decreases in the price of the MTAS would be expected to lead to increased prices for retail mobile consumers. This is because reducing termination rates will still alter the profits MNOs can expect to earn from calls made to their subscribers, and therefore the extent to which they will compete to acquire subscribers in order to attain those profits. Theory suggests that even where there is imperfect competition between MNOs, a decrease in the price of the MTAS would be likely to lead to an increase in the retail price of mobile services.

The notion that decreased prices for the MTAS will be likely to lead to increased prices for retail mobile services is well supported in the economic literature.<sup>18</sup> It has also been recognised in court<sup>19</sup> and regulatory decisions<sup>20</sup>, and has been empirically observed across a number of jurisdictions.<sup>21</sup>

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<sup>16</sup> Other wholesale revenues may include the receipt of termination payments for providing SMSs to their subscribers – so-called “SMS termination” revenues.

<sup>17</sup> Genakos, C and Valletti, T., *Seesaw in the Air: Interconnection regulation and the Structure of Mobile Tariffs*, CEP Discussion Paper No 1045, February 2011 at p. 6.

<sup>18</sup> See, for instance, Genakos, C. and Valletti, T., *op. cit.* and Wright, J., (2002) “Access Pricing under Competition: an Application to Cellular Networks.” *Journal of Industrial Economics*, 50: 289-316.

<sup>19</sup> See, for instance, UK Competition Commission, *Determination between Ofcom and Hutchison 3G UK Limited and Ofcom and British Telecommunications plc, under section 193 of the Telecommunications Act (Act) in regard to Mobile Phone Wholesale Voice Termination charges*, dated 16 January 2009 at para [8.63 – 8.115].

To model this effect, we have adapted the approach previously taken by the NZCC to model how reductions in the price of the MTAS will be likely to lead to increases in the retail prices of mobile services. In this regard, the NZCC followed a 3-step approach to estimate the impact of reduced MTAS prices on retail mobile prices:

- First, it estimated the amount of MTAS revenue MNOs would lose following a reduction in the price of the MTAS.
- Second, it then made assumptions about what proportion of this lost revenue MNOs would seek to recapture via increased prices for retail mobile services.
- Third, it then looked at the existing level of average revenue per user (ARPU) and estimates of the elasticity of demand for mobile subscriptions and determined what increase in ARPU would be necessary to recover the proportion of lost MTAS revenue assumed in the second step above. In turn, this meant decreases in the price of the MTAS gave rise to a higher ARPU for mobile subscribers and a consequent reduction in mobile subscription levels relative to what would have occurred in the absence of a reduction in the price of the MTAS.<sup>22</sup>

In our model, however, we have made one additional change to reflect market conditions here in Australia. In particular, past increases ARPU have not always been associated with decreases in the level of retail mobile subscribers. That is, despite mobile ARPU increasing over the modelled period, the overall number of subscribers in Australia has grown substantially. This suggests there are likely to be other factors at play that are influencing demand for mobile subscriptions other than simply the retail prices for mobile services. In other words, there are also likely to be “shift” factors that are pushing the demand curve for mobile subscriptions out at any given price over time.

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<sup>20</sup> See, for instance, Ofcom, *Wholesale mobile voice call termination: Preliminary consultation on future regulation*, 20 May 2009, at para [5.13] and NZCC, *Final Report on whether the mobile termination access services (incorporating mobile-to-mobile voice termination, fixed-to-mobile voice termination and short-message-service termination) should become designated or specified services*, 22 February 2010, at para [131] on p. 51. While different regulators have acknowledged the existence of a waterbed effect, their views as to the strength of the waterbed effect tend to vary. Their views are often influenced by perceptions as to the extent of competition in retail mobile markets in their jurisdiction.

<sup>21</sup> See, for instance, Genakos, C. and Valletti, T. *op. cit.* and Cunningham, B. M., Alexander, P. J., and Candeub, A., (2010), “Network growth: Theory and evidence from the mobile telephone industry.” *Information Economics & Policy*, 22: 91-102.

<sup>22</sup> In reality, the extent to which retail prices increase following a decrease in the price of the MTAS will depend on a range of factors, including the state of competition with respect to the retail provision of mobile services and the way this impacts on the profit maximising level of retail mobile prices following a decrease in the price of the MTAS. In that respect, choosing a set percentage of lost MTAS revenues that MNOs would seek to recover from increased retail mobile charges is a somewhat ‘rough’ way to measure the extent of the waterbed effect. For this and other reasons, we conduct sensitivity tests around the extent of the waterbed effect in section 3.2.1 of this report.

To accommodate this within the modelling, we follow the same approach followed by Analysys Mason when modelling decreases in the price of FTM calls. That is, we assume that the demand for mobile subscriptions shifts from one period to the next to match through the new price/quantity value for that year. Consistent with the method for modelling shifts in the demand for FTM calls, we make the simplifying assumption that this shift occurs on the first day of each period. We use this demand curve to estimate the welfare effects from an ARPU for mobile subscribers greater than that which would have occurred in the absence of reductions in the price of the MTAS.

The welfare modelling of the waterbed effect is illustrated diagrammatically in Figure 2 below. This shows how a reduction in the price of the MTAS leads to a reduction in MTAS revenue equal to the area A – B. Based on an assumption regarding what proportion of this lost revenue is sought to be recovered via increased levels of ARPU, we can then estimate how much the price of mobile subscriptions would rise in a given period to recover this amount of revenue. This gives effect to a lower level of mobile subscriptions than would otherwise be the case. We also assume, consistent with the modelling of the NZCC, that the TSLRIC+ of providing mobile subscription lies below the initial price of the service. The welfare effects from a reduction in the price of the MTAS would then involve:

- A decrease in consumer surplus equal to the area D + E
- An increase in producer surplus equal to the area D – F
- A net loss in social welfare equal to the area E + F.<sup>23</sup>

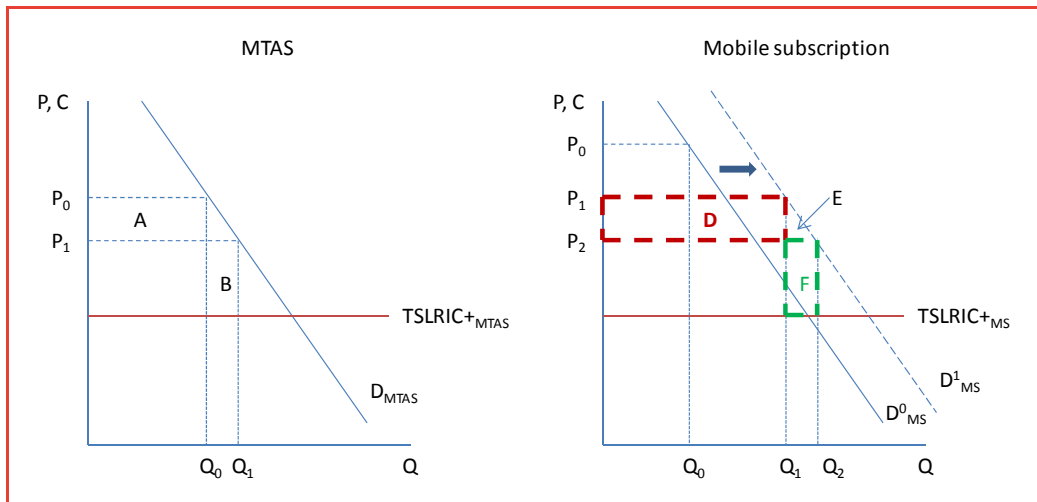
To the extent price might, for instance, be lower (and output higher) in the period than that predicted by the model, this would be reflected by a shift in the demand curve so that the demand for mobile subscriptions shifts to encompass the new price/quantity point. In Figure 2 below, this is represented by the shift in the demand curve from  $D_{MS}^0$  to  $D_{MS}^1$ .

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<sup>23</sup> In estimating welfare effects in the market for mobile subscriptions, we do not include changes in producer and consumer surplus with respect to the provision of the MTAS. This is because these effects are already captured in our analysis of the welfare effects in the market for FTM calls. For instance, the area of gain D-F for MNOs as a result of increased subscription charges is set to offset (to whatever assumed extent) the loss in MNO producer surplus of E-G from reductions in the price of the MTAS in Figure 1. Similarly, the gain in consumer surplus from reductions in the price of the MTAS are reflected in the increased consumer surplus in Figure 1 that follows whenever reductions in the price of the MTAS are passed-through to consumers of FTM calls.



Figure 2: Welfare modelling of the waterbed effect



Source: Frontier Economics

### 2.2.3 The indirect welfare loss for fixed and mobile subscribers from lower mobile subscriptions

The final welfare effect we have modelled relates to the loss in welfare resulting from both fixed and mobile consumers having less mobile subscribers to whom they can make calls than would otherwise have been the case in the absence of reductions in the price of the MTAS. That is, it is generally assumed that consumers will only make calls to other people if they value these calls at least as much as the price they have to pay for them. In other words, the actual making of calls indicates that consumers attach a positive valuation to making these calls.

If a decrease in the MTAS leads to a lower level of mobile subscribers than would otherwise be the case, this means there will be less mobile subscribers that remaining fixed and mobile network subscribers will be able to call. Accordingly, fixed and mobile subscribers will make less calls than would otherwise be the case if subscriptions levels had not fallen, and therefore will no longer enjoy the positive valuation they made from making these calls.

In order to measure the lost welfare that follows from the reduction in mobile subscription for remaining fixed and mobile network subscribers, we have utilised the approach used by the NZCC to measure this effect. In this regard, the NZCC separately measured the loss in welfare for remaining fixed and mobile subscribers from a reduction in mobile subscription levels. With respect to the lost welfare for fixed-line consumers, this involves:

- First estimating the average number of FTM calls made to each mobile subscriber. This involves dividing the number of FTM calls/minutes by the number of mobile network subscribers in a given period.

- Second, estimating the proportion of this average number of calls that would be received by those “marginal” subscribers that would cease to subscribe to a mobile network if ARPU increased. This then gives a number of FTM calls that fixed-line consumers will be unable to make to mobile subscribers who will not subscribe to a mobile network as a result of ARPU being higher than it otherwise would be without regulation of the MTAS.
- Third, these calls are then valued by plotting a demand curve for marginal subscribers, which represents the value of these calls to the marginal subscriber. This is plotted using the elasticity of demand for FTM calls.

Using the demand curve for calls to marginal subscribers and the same estimates of the TSLRIC+ of providing FTM calls that we used to estimate the direct welfare effect of reductions in the price of FTM calls, we are then able to estimate changes in consumer surplus, producer surplus and total welfare for those FTM calls that cannot be made to those consumers who do not subscribe to mobile networks as a result of reduced MTAS rates.

With regard to the lost welfare for mobile subscribers, the analysis similarly involves:

- First estimating the number of MTM calls made to each subscriber. To do this, we divide the total number of MTM calls by the number of mobile subscribers. This gives an average number of MTM calls per subscriber.
- Second, we again estimate what proportion of these calls would be made to the marginal subscriber.
- Third, we then value the calls that would not be made to the marginal subscribers who will not subscribe to a mobile network due to the higher ARPU following the higher price for the MTAS. We do this by again plotting a demand curve for calls to the marginal subscribers who do not subscribe to a mobile network.

Using this approach, we are again able to estimate consumer surplus, producer surplus and total welfare effects for those MTM calls that were unable to be made to those subscribers that did not subscribe because of the lower price for the MTAS and higher level of ARPU.

It should be noted, however, that the magnitude of the welfare changes resulting from this third round of welfare effects is small in comparison to the first two effects referred in sections 2.2.1 and 2.2.2 above.

#### **2.2.4 Limitations to our analysis**

While our analysis seeks to capture a number of the broader welfare effects that are likely to follow from reductions in the price of the MTAS, there are some limitations to our analysis.

## **Welfare modelling framework and assumptions**

First, it is not clear how reductions in the price of the MTAS will impact competition between telecommunications networks operators in a broader sense. For instance, and as set out in a separate report we have prepared for VHA with respect to the implications of adopting a depreciated actual cost (DAC) methodology to determine prices for the MTAS<sup>24</sup>, reductions in the price of the MTAS will impact on different telecommunications operators in different ways. This is because some network operators – such as Telstra and Optus – are vertically integrated operators of both fixed and mobile networks. In contrast, other operators – such as VHA – are only operators of a mobile network. This means that where the competitive pressures in the fixed-line side of the market are weaker than competitive pressures in the mobile side of the market, it is likely that vertically integrated fixed-line operators will be able to benefit from reductions in the price of the MTAS at the expense of mobile-only operators. This is because the weaker competitive pressures in the fixed-line side of the market may enable fixed-line operators to retain some of the reductions in the price of the MTAS through low levels of FTM pass through; while MNOs may be unable to recover all of their lost profits from reductions in the price of the service if the waterbed effect is weak.

While our analysis seeks to capture some of the more direct effects of rate reductions with respect to the provision of fixed and mobile telecommunications services, it is unable to measure the broader impacts on competition between different types of network operators that might result from reductions in the price of the MTAS.

Second, our analysis does not consider whether there are other ways that fixed-line operators may seek to use reduced MTAS rates to lower prices for other fixed-line services. That is, it is sometimes suggested that fixed-line operators may pass-through reductions in the price of the MTAS through reductions in the price of other fixed-line services (such as, for example, through lower national long distance or international call prices). Conceptually, we have some concerns with these claims. In the first instance, economic theory suggests that firms will change the price of services where there is a change in the marginal cost of providing these services. In the case of FTM calls, a decrease in the MTAS rate leads to a decrease in the marginal cost FNOs face when providing these services. Hence, it makes sense that reductions in the price of the MTAS should lead to some level of reduction in the price of FTM calls.<sup>25</sup> It is not clear, however, how a decrease in the price of the MTAS reduces the marginal cost of providing other types of calls over fixed-line networks. It is not clear to us,

<sup>24</sup> See, Frontier Economics, *Use of depreciated actual costs to set mobile termination rates*, July 2011.

<sup>25</sup> Similarly, reductions in the price of the MTAS reduce the marginal revenue a MNO earns when a consumer subscribes to its network. It is this change in marginal revenues that leads to a lesser incentive to compete hard at the retail level to acquire the customer, and hence the increase in retail mobile prices referred to as the ‘waterbed effect’.

therefore, why a fixed-line operator would reduce the prices of other call products if the price of the MTAS were to decrease. Secondly, however, even if reductions in the price of the MTAS were being passed through to consumers in the form of reductions to the price of other call services, this would suggest to us that fixed-line operators do not believe consumers are overly responsive to reductions in the price of FTM calls. That is, they believe consumers will respond better to reductions in the price of other fixed-line services. Where this is the case, we believe this suggests that an own-price elasticity of demand estimate for FTM calls of -0.6 may be too high.

Third, our analysis does not seek to estimate the welfare gain mobile subscribers might experience if lower FTM call prices lead to increases in the volume of FTM calls. That is, increases in the number of FTM calls will increase social welfare with respect to the consumption of mobile phone services to the extent these calls are valued by mobile subscribers.<sup>26</sup> In terms of our modelling, this could be reflected via a further shift outward in the demand for mobile subscribers following a reduction in the price of the MTAS. This would have the effect of leading to a slightly higher number of mobile subscribers than is modelled in our analysis, a slightly higher level of consumer welfare, and a slightly lower increase in ARPU following a reduction in the price of the MTAS. Importantly, however, we believe this effect is likely to be trivial in our analysis. This is because data provided to us by VHA suggests that only approximately 20 per cent of calls made to mobile subscribers come from fixed-line consumers. Further, consumers enjoy a number of services when they acquire a mobile subscription, including the ability to make and receive MTM, make MTF calls and receive FTM calls. They also enjoy the ability to make and receive SMSs and MMSs; and consume data services. For this reason, the receipt of FTM calls represents only a small portion of the value of a mobile subscription. Given our model suggests that reductions in the price of FTM calls have led to only modest increases in the volume of FTM calls as a result of reduced MTAS rates over the modelled period, this suggests this additional welfare effect is likely to have been trivial. Accordingly, we do not believe exclusion of this effect is likely to change the conclusions of our analysis.

Fourth, our analysis also does not seek to estimate the welfare loss fixed-line subscribers will suffer as a result of there being a smaller number of mobile subscribers that will make MTF calls to them. Again, we expect this effect to be small, and largely offset by the effect referred to at point 3 above.

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<sup>26</sup> In this regard, we assume that mobile subscribers generally attach some positive value from receiving calls from fixed-line consumers. In some instances, however, it is possible that mobile subscribers may not value additional calls made to them from fixed-line subscribers. This might be the case, for instance, where mobile subscribers receive unwanted prank or marketing calls. By and large, however, we assume mobile consumers will generally attach some value to calls made to them.

## 2.3 Key welfare modelling assumptions

As indicated above, VHA has asked us to extend the analysis previously conducted by Analysys Mason to capture the broader welfare effects that are likely to follow from a reduction in the price of the MTAS. In particular, VHA has asked us to estimate what are likely to be the total welfare effects that would have occurred as a result of past reductions in the price of the MTAS over the period from 2004-05 to 2009-10.

When analysing these welfare effects, we are essentially being asked to compare two states of the world:

- One, where the price of the MTAS has been regulated (the “factual” scenario).
- Two, where the price of the MTAS had not been regulated (the “counter-factual”).

Once these two states of the world have been modelled, we can then estimate the differences in consumer surplus, producer surplus and total welfare that exist between these two states of the world.

In order to model these welfare effects, we have had to make a number of assumptions about the state of the world under each scenario. The key assumptions we have made for each state of the world are summarised below.

### 2.3.1 Input assumptions under the factual of regulation

Under the factual scenario, we have largely relied on publicly available data to determine market outcomes that occurred over the modelled period. In particular, we have:

- Set the regulated price of the MTAS in accordance with the rates set out in the ACCC’s June 2011 MTAS Discussion Paper.
- Adopted the estimates of the underlying cost of providing the MTAS used by Analysys Mason in its analysis for the ACCC, which are derived from estimates of the TSLRIC+ of providing the service made by WIK Consult and earlier estimates of cost set out in the ACCC’s 2004 Mobile Services Review.
- Estimated the retail price of FTM calls based on the average FTM revenue per minute for PSTN and ISDN FTM calls contained in Telstra Annual Report data over the modelled period. As a sensitivity, we have also used the average revenue per minute for PSTN FTM calls only, using data from the ACCC’s quarterly imputation testing reports.
- Applied the same estimate of the non-MTAS other costs of providing a FTM call as that used by Analysys Mason in its report for the ACCC.

- Estimated the total volume of FTM call minutes (and by implication the volume of MTAS minutes) for the market as a whole by scaling up the volume of PSTN and ISDN FTM call minutes in Telstra's Annual Reports over the relevant period. When we run the sensitivity using the PSTN FTM average revenue we use PSTN FTM call minutes only. Telstra's FTM volumes have been scaled up by dividing its reported volume of call minutes by estimates of Telstra's market share for fixed services, as set out in ACCC and Australian Communications and Media Authority (ACMA) reports.
- Derived a series of annual demand curves for FTM calls using an elasticity of demand of -0.6. This is the same figure used by Analysys Mason in its report for the ACCC, and is based on previous estimates of this figure by the ACCC. We have also conducted sensitivity testing of our results using an alternative estimate of the elasticity of demand for FTM calls of -0.216 based on analysis previously conducted by Vodafone in 2007.<sup>27</sup> We have also shifted the demand curve for FTM calls at the start of each period so that it is consistent with actual observations of the average price and quantity of FTM calls for this period, and the elasticity of demand estimate we have used. This appears to be consistent with the approach taken by Analysys Mason.
- Estimated the price of mobile subscription using publicly available data of the average revenue per user (ARPU) set out in Telstra Annual Reports over the modelled period. This ARPU estimate is based only on retail revenues (i.e. it excludes MTAS revenues), and includes revenue from selling hardware (e.g. mobile phone sales).
- Estimated the total volume of mobile subscribers for the market as a whole based on Telstra, Optus, Hutchison and Vodafone annual reports and data provided by VHA.
- Derived a demand curve for mobile subscriptions using the data on mobile subscriptions and ARPU levels set out above, and an estimate of the elasticity of demand for mobile subscriptions of -0.43. This is based on the elasticity of demand for mobile subscriptions used by the NZCC in its modelling of the welfare effects of reducing the price of the MTAS. We have also conducted sensitivity testing of our results using an alternative estimate of the elasticity of demand for FTM calls of -0.55 based on analysis previously conducted by Vodafone in 2007.<sup>28</sup> To maintain consistency with our treatment of demand for FTM calls, we have shifted the demand curve for mobile subscriptions at the start of each period so that it is consistent with actual observations of the

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<sup>27</sup> Sandbach, J., *Welfare implications*, The Economics of Mobile Prices, Vodafone Policy Paper Series, Number 7, November 2007.

<sup>28</sup> *Ibid.*

ARPU and quantity of mobile subscriptions for this period, and the elasticity of demand estimate we have used.

- Estimated an average price per minute for mobile calls by dividing total revenues for Vodafone by the total number of mobile call minutes during each year of the modelled period. This is based on data provided to the ACCC for the Division 12 Record Keeping Rule (RKR) requirements.

### 2.3.2 Input assumptions under the counterfactual of no regulation

Under the counter-factual scenario where it is assumed the price of the MTAS has not been regulated, we have assumed that:

- The price of the MTAS would have stayed at the original level of 22.5 cpm that existed in the market in 2003-04 – i.e. before the ACCC commenced reducing prices in line with its 2004 MTAS Pricing Principles Determination. This is consistent with the price level assumed by Analysys Mason in its welfare analysis for the ACCC.<sup>29</sup>
- The retail price of FTM calls would have stayed at the average retail revenue per minute of 38.5 cpm set out in Telstra's 2003-04 Annual Report. This is consistent with the price level assumed by Analysys Mason, and set out in the ACCC's 2004 Mobile Services Review.

In order to determine the levels of consumer surplus, producer surplus and total welfare that would have existed under these prices, we have used the demand curves described in section 2.2.1 above. As indicated above, however, the demand curve has been shifted for each period to reflect exogenous factors that are influencing levels of demand other than simply changes in the price of the MTAS. The combination of the different MTAS and FTM prices assumed under the counter-factual and the shifted demand curves for FTM and mobile subscription services has enabled us to derive assumed levels of output for FTM calls and mobile subscriptions under the counter-factual of no regulation.

In order to derive price levels for mobile subscription (i.e. ARPU) under the counterfactual, however, we have also needed to make assumptions about the level of the 'waterbed effect'. In this regard, we have asked how much lower would the price of mobile subscription have been had MNOs not needed to

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<sup>29</sup> In reality, we believe it is possible MNOs may have decreased the price of the MTAS in the absence of regulation of the service. This is because it is unlikely the unregulated price of the MTAS would remain profit maximizing over the full modeling period. The effect of maintaining consistency with the counter-factual price assumed by Analysys Mason is that the consumer and social welfare gains with respect to lower FTM call prices will be greater than they may otherwise have been, but the consumer and social welfare detriments from higher mobile subscriptions charges may also be greater.

increase ARPU levels to capture some proportion of lost profits in the factual of regulation as a result of lower MTAS prices. This lower counter-factual price for mobile subscriptions required us to make assumptions about:

- The proportion of lost termination profits that MNOs would seek to recapture in higher prices for mobile subscription in the factual of regulation. Here, we assume for our base case that MNOs would seek to recover 50 per cent of lost profits, in line with the base case assumption made by the NZCC in its analysis of the welfare effects of reduced MTAS rates.<sup>30</sup> The existence of a strong waterbed effect is also supported by the findings of Genakos and Valletti, who find in relation to MTAS rate reductions in a number of overseas jurisdictions that:

... although regulation reduced termination rates by about 10% to the benefit of callers to mobile phones from fixed lines, this also led to a 5% increase (varying between 2%-15% depending on the estimate) in mobile retail prices.<sup>31</sup>

It should be noted that given MTAS prices may be lower than those of retail mobile services (and that revenues from retail mobile services are significantly higher than those from the MTAS), this may imply a level of lost MTAS revenue being recovered from retail mobile services of greater than 50 per cent. Hence, we have also conducted sensitivity tests using higher waterbed effect levels of 75 and 100 per cent.

- The underlying cost of mobile subscription. In this regard, we have estimated the underlying cost of mobile subscription to be 69 per cent of ARPU for each year. This percentage figure is based on a weighted average of the mobile EBITDA for Telstra and Optus for 2007-08 as stated in their annual reports. This is broadly consistent with the 70 per cent figure used by the NZCC in its welfare modelling analysis.<sup>32</sup>

### 2.3.3 Other assumptions

In order to make estimates of the change in consumer surplus, producer surplus and total welfare from the lost FTM and MTM calls that consumers will be unable to make following reductions in the level of mobile subscription under regulation, we have:

- Assumed in our base case that the marginal mobile subscriber receives approximately 35 per cent of the amount of FTM and MTM call minutes that the average subscriber would receive. The logic underpinning the notion that a marginal subscriber receives less call minutes than the average subscriber is

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<sup>30</sup> See row 34 of “Key assumptions” sheet in the NZCC welfare model.

<sup>31</sup> Genakos, C., and Valletti, T., *op. cit.*, at p. 2.

<sup>32</sup> See row 43 of “Key assumptions” sheet in the NZCC welfare model.



that those subscribers who will value a mobile phone subscription less (and therefore be more likely to stop subscribing once mobile prices rise) will be those who use their phone less. To determine what proportion of average call minutes that the marginal subscriber receives, we have relied on estimates of the pre-paid subscriber revenues as a share of average subscriber revenues in Telstra's Annual Report.<sup>33</sup>

- Derived a demand curve for MTM calls using:
  - An estimate of the average retail revenue per minute based on dividing mobile revenue by the number of call minutes in Telstra's Annual Report.
  - An estimate of the own-price elasticity of demand for MTM calls of -0.59, based on the assumption used by the NZCC in its modelling of the welfare effects of reducing the price of the MTAS. We have also conducted sensitivity testing of our results using an alternative estimate of the elasticity of demand for MTM calls of -0.9 based on analysis previously conducted by Vodafone in 2007.<sup>34</sup>
  - An estimate of the number of MTM call minutes made by the marginal subscribers to other mobile subscribers based on data provided to us by VHA. This is also based on the assumption that these minutes per subscriber are 35 per cent of the average minutes. Average subscriber minutes are derived from VHA data.

We have also assumed, for the purposes of the analysis contained in our interim results, that all demand curves are linear. This is different to Analysys Mason, who has assumed that demand curves are constant elasticity demand curves.

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<sup>33</sup> This assumption is also consistent with that assumed by the NZCC in its welfare analysis. See row 38 of "Key assumptions" sheet in the NZCC welfare model.

<sup>34</sup> Sandbach, J., *op. cit.*

### 2.3.4 Summary of input assumptions

The assumptions, and the source or material used in making these assumptions, are summarised in Table 1 below.

Table 2: Model data inputs and sources

Data input	Purpose for modelling	Values	Source
Unregulated MTAS price (cpm)	Counterfactual price for modelling welfare changes of actual MTAS prices	22.5 cpm all years 2003-04 to 2009-10	Analysys assumption, from ACCC mobile services review report 2004
Retail FTM price without MTAS regulation	Counterfactual price for modelling welfare changes of factual FTM prices and rise in subscription price (latter via waterbed effect)	38.5 cpm all years 2003-04 to 2009-10	Analysys assumption, from ACCC mobile services review report 2004
Regulated MTAS price (cpm)	Factual values for MTAS price for measuring welfare effects compared to counterfactual MTAS price.	2004-05: 19.5 cpm 2005-06: 16.5 cpm 2006-07: 13.5 cpm 2007-08 onwards: 9 cpm	ACCC MTAS discussion paper June 2011. Weighted average for year as applicable.
Retail FTM price under MTAS regulation (cpm)	Factual values for FTM price for measuring welfare effects compared to counterfactual FTM price.	2004-05: 35.8 cpm 2005-06: 33.2 cpm 2006-07: 31.4 cpm 2007-08: 31.6 cpm 2008-09: 32.1 cpm 2009-10: 31.4 cpm  Sensitivity values (PSTN only): 2004-05: 39.0 cpm 2005-06: 37.0 cpm 2006-07: 36.0 cpm 2007-08: 36.6 cpm 2008-09: 37.7 cpm 2009-10: 37.0 cpm	Telstra annual report data, average FTM revenue per minute for PSTN and ISDN calls. Sensitivity values are for PSTN calls only and are from ACCC imputation reports for Telstra.

Data input	Purpose for modelling	Values	Source
Retail mobile subscription price with MTAS regulation	Factual values for mobile subscription price for measuring welfare effects compared to counterfactual subscription price (plus allowance for modelled waterbed effect).	2004-05: \$500.43 2005-06:\$509.67 2006-07:\$547.00 2007-08:\$618.85 2008-09:\$609.56 2009-10:\$627.25	Telstra Annual report. Mobiles ARPU for retail revenues only, including hardware.
Mobile termination cost (cpm)	Measuring producer surplus levels and changes in the MTAS market.	2003-04: 9cpm 2004-05 to 2007-08: 6.6 cpm After 2007-08: 6.2 cpm	Analysys assumptions derived from Wik model outputs from ACCC MTAS determination 2009 and ACCC MTAS review 2004
Other FTM costs (cpm)	Add to mobile termination cost for determining total FTM cost for measuring producer surplus levels and changes in the FTM market.	5 cpm all years 2003-04 to 2009-10	Analysys model assumption, from ACCC mobile services review report 2004
% mobile pass through (waterbed effect)	% of net fall in MTAS producer surplus that is to be recovered from increase in mobile subscription net producer surplus	Base:50% Sensitivity 1: 75% Sensitivity 2:100%	Frontier/VHA assumptions
FTM and MTAS minutes no MTAS regulation	Counterfactual quantity of minutes as starting value for calculating exogenous demand change. Latter is used for determining welfare changes under factual.	5,869.4 m 2003-04 to 2009-10 (and sensitivity of 4,351.3 m for PSTN only).	Estimates of PSTN and ISDN FTM minutes from Telstra Annual report, escalated by 1/(Telstra fixed line market share). Market share from ACCC and ACMA data. Sensitivity value is for PSTN minutes only.

Data input	Purpose for modelling	Values	Source
FTM and MTAS minutes with MTAS regulation	Quantity of FTM and MTAS minutes for welfare modelling of MTAS and FTM and price falls under factual.	2004-05: 6,250.0 m 2005-06: 6,500.2 m 2006-07: 6,595.6 m 2007-08: 6,591.7m 2008-09: 6,360.8 m 2009-10: 6,192.4 m  Sensitivity values (PSTN only): 2004-05: 4,633.5 m 2005-06: 4,819.0 m 2006-07: 4,769.1 m 2007-08: 4,766.2 m 2008-09: 4,599.3 m 2009-10: 4,477.5 m	Estimates of PSTN and ISDN FTM minutes from Telstra Annual report, escalated by 1/(Telstra fixed line market share). Market share from ACCC and ACMA data. Sensitivity values are for PSTN minutes only.
Mobile subscribers with MTAS regulation	Quantity of mobile subscribers for welfare modelling of subscriber price increase with MTAS regulation under factual.	2004-05: 18.0 m 2005-06: 19.3 m 2006-07: 20.7 m 2007-08: 22.0 m 2008-09: 24.2 m 2009-10: 25.4 m	Telstra, Optus, Hutchison and Vodafone annual reports and data provided by VHA.
Mobile subscription cost (% sub price)	For determining change in producer surplus from subscription price increase under factual.	69% of retail subscription price all years 2003-04 to 2009-10	Weighted average of 2007-08 mobile EBITDA margin for Telstra and Optus from annual reports. Figure of 69% is determined as (1-ave EBITDA margin of 0.31).
FTM own price elasticity	Slope of demand curve for FTM minutes. Determines change in minutes for change in FTM price.	Base: -0.6 (ACCC) Sensitivity: -0.216 (V)	ACCC estimate used by Analysys for F2M pass through report and Vodafone 2007 paper by Sandbach.
Mobile subscription own price elasticity	Slope of demand curve for subscriptions. Determines change in subscriptions for change in subscription price.	Base: -0.43 (CC) Sensitivity: -0.55 (V)	Commerce Commission assumption and Vodafone 2007 paper by Sandbach.

Data input	Purpose for modelling	Values	Source
MTM own price elasticity	Slope of demand curve MTM calls. Used to determine welfare change for reduction in MTM minutes from reduction in MOU by loss of marginal subscribers.	Base: -0.59 (CC) Sensitivity: -0.9 (V)	Commerce Commission assumption and Vodafone 2007 paper by Sandbach.
MTM price	Starting value for modelling impact of decrease in subscriptions from increase in subscription price on the number of MTM calls.	2004-05: 35.2 cpm 2005-06: 28.1 cpm 2006-07: 30.0 cpm 2007-08: 32.4 cpm 2008-09: 34.0 cpm 2009-10: 34.0 cpm	Vodafone average retail revenues per minute from Division 12 RKR data. Figure for 2009-10 is assumed same as 2008-09.
FTM minutes per <i>marginal</i> mobile subscriber (% of average subscriber minutes)	Determines decrease in total FTM minutes from loss of marginal subscribers with increase in the mobile subscription price.	35%	Pre-paid subscriber revs as share of average subscriber revs in 2009-10 from Telstra annual report 2010
MTM minutes per <i>marginal</i> mobile subscriber (% of average subscriber minutes)	Determines decrease in total MTM minutes from loss of marginal subscribers with increase in the mobile subscription price.	2004-05: 251 2005-06: 408 2006-07: 438 2007-08: 413 2008-09: 405 2009-10: 506  These are based on 35% of average as above).	Pre-paid subscriber revs as share of average subscriber revs in 2009-10 from Telstra annual report 2010, applied to VHA average mobile to mobile minutes per mobile subscriber.



### 3 Modelling results

In this section of our interim report, we set out the results of our modelling analysis based on the assumptions set out in section 1 above. These results show the effects of a reduction in the price of the MTAS on each of:

- Consumer surplus, measured as the sum across both fixed and mobile consumers
- The producer surplus of FNOs
- The producer surplus of MNOs
- Total welfare, which is essentially the sum of the preceding three effects.

These effects capture all three types of effect described in section 2.1.1 above.

Our results are set out so that we first estimate the changes in consumer surplus, producer surplus and total welfare under a base case scenario using the core assumptions described in section 2. We then run a number of sensitivity tests based on changes in:

- The amount of lost MTAS profits MNOs would seek to recover via increased prices for mobile subscription.
- The own-price elasticities of demand for each of FTM calls, MTM calls and mobile subscriptions.
- The use of only PSTN FTM call prices and volumes of minutes rather than combined PSTN and ISDN prices and minutes.

We set out some high-level conclusions from our analysis in section 3.3 below.

#### 3.1 Consumer welfare is declined over time under our base case results

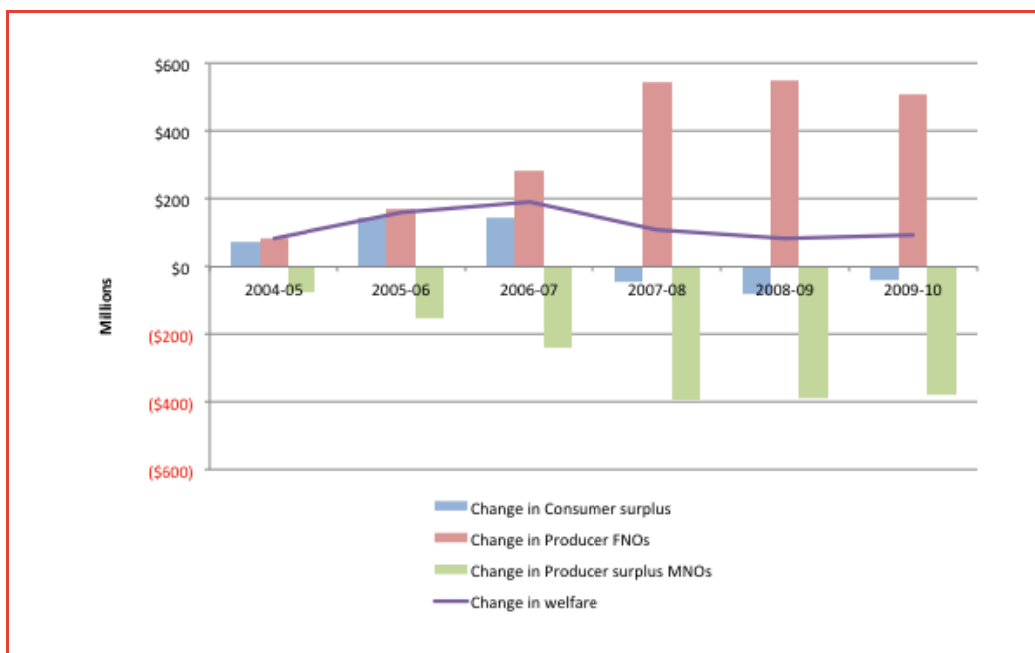
The aggregate welfare effects over the period 2004-05 to 2009-10 are shown in Table 3 below. These welfare effects are then displayed for each of the financial years in graphical form in Figure 3.

Table 3: Aggregate welfare effects of regulating price reductions for the MTAS

Welfare type	2004-05 to 2009-10
Change in consumer surplus	\$205,386,089
Change in FNO producer surplus	\$2,142,935,600
Change in MNO producer surplus	(\$1,628,067,602)
Overall change in welfare	\$720,254,086

Source: Frontier Economics

Figure 3: Annual welfare effects of regulating price decreases for the MTAS



Source: Frontier Economics

The key finding under our base case is that extending the welfare analysis to capture more than simply the direct welfare effects that occur with respect to FTM calls shows that:

- The welfare gains for consumers are significantly lower than those that would be estimated if we only had regard to the direct welfare effects in the market for FTM calls. This is due to the price for mobile subscription being higher under MTAS regulation than it otherwise would be in the absence of regulation. Indeed, in some years, the net gain to consumers across both fixed and mobile markets is negative.
- The major beneficiaries of reduced MTAS rates are FNOs. This is because they appear able to pocket some of the reduction in MTAS by not fully passing through these lower rates to consumers of FTM calls. This gain has



increased as both the market for FTM calls has grown, and reductions in the price of the MTAS have increased.

- MNOs are significantly worse off as a result of reductions in the price of the MTAS. This is largely because they are only able to recover 50 per cent of lost MTAS profits via increased prices for retail mobile calls.

Importantly, the results also show that where the level of FTM pass-through reduces, the net gains for consumers are significantly lower. This is evident in the contrast between the impact on consumer welfare of MTAS rate reductions in the period between 2004-05 and 2006-07, compared with the period from 2007-08 to 2009-10. In this regard, our analysis of available data showed that while the price of FTM calls decreased from 38.5 cpm to 31.4 cpm over the period from 2004-05 to 2006-07, FTM call prices were still at this level in 2009-10. This was despite the price of the MTAS falling from 12 cpm to 9 cpm on 1 July 2007. In these circumstances, reductions in the price of the MTAS are providing little benefit to fixed-line consumers such that any level of waterbed effect will generate welfare losses for consumers as a whole.

## 3.2 Consumer and total welfare is decreasing under most sensitivity tests

Below we report the results of changing a number of key assumptions.

### 3.2.1 Changes in waterbed assumptions

The first input we have conducted sensitivity testing for the proportion of lost MTAS profits that MNOs seek to recover via higher prices for mobile subscription than those that would be expected in the absence of regulation of the MTAS. In this regard, we have re-run our analysis assuming MNOs are able to recover 75 per cent and 100 per cent of lost MTAS profits via higher prices for mobile subscriptions than would be the case in the absence of regulation.

In conducting this analysis, it is important to note that increases in the price of mobile subscriptions may not be high in absolute terms if MNOs seek to recover lost MTAS revenues. For instance, our model shows that if MNOs seek to recover 100 per cent of lost revenues via increased prices for mobile subscriptions, this will lead to the price of mobile subscriptions being less than 5 per cent higher than what they would be in the absence of regulation. This low percentage increase reflects the fact that MNOs now recover a much greater proportion of their revenues from retail mobile services than they do from the MTAS. Notwithstanding this, small increases in the price of mobile subscription can still have significant consumer surplus, producer surplus and total welfare effects due to the large numbers of mobile subscribers that now exist in Australia.

Table 4: Aggregate welfare effects 2004-05 to 2009-10 with different waterbed effect assumptions

Welfare type	50% (base)	75%	100%
Change in consumer surplus	\$205,386,089	(\$755,220,651)	(\$1,708,860,605)
Change in FNO producer surplus	\$2,142,935,600	\$2,130,098,340	\$2,117,533,715
Change in MNO producer surplus	(\$1,628,067,602)	(\$907,622,175)	(\$186,624,019)
Overall change in welfare	\$720,254,086	\$467,255,515	\$222,049,091

Source: Frontier Economics

The clear observation from this sensitivity analysis is that if MNOs seek to recover a greater proportion of lost profits from reductions in the price of the MTAS via increased subscription charges:

- Consumers will, on balance, be worse off under regulation under both the scenarios we have modelled. The intuition behind this result is that fixed consumers do not benefit in full from the reduction in the price of the MTAS via lower FTM calls – i.e. FNOs are able to pocket some of this reduced MTAS price via less than complete pass through. On the other side of the ledger, however, MNOs are able to recover a significant (and, in the case of a 100 per cent waterbed effect, full) amount of the lower profits from lower MTAS prices via increased mobile subscription charges. In other words, the consumer detriment from the waterbed effect is complete (or almost complete), while the consumer gain from lower FTM prices is only partial.
- The gain for FNOs is reduced as MNOs are able to recover more lost profits via increased subscription charges. This is because higher subscription charges leads to FTM consumers having less mobile subscribers to call, and hence lower profits for FNOs due to the lower level of FTM calls. However, this effect is small.
- As MNOs are able to recover more of their lost MTAS profits through higher subscription charges, their overall loss in profits declines and in fact tends towards zero as the level of the waterbed effect approaches 100 per cent. The reason that MNOs are still worse off as a result of regulation of the MTAS even where they are able to recover 100 per cent of lost MTAS profits through higher prices for mobile subscription is because of the loss in surplus resulting from less MTM calls being made as a result of higher ARPUs leading to lower levels of mobile subscribers.

Overall, the results clearly show that in the absence of full pass-through of lower MTAS prices into the retail price of FTM calls, consumers and society as a whole will be made worse-off as the level of the waterbed effect increases. What is unambiguously clear, however, is that with less than full FTM pass-through, FNOs clearly are the major beneficiary of reductions in the price of the MTAS. This is also significant because the major provider of fixed line telecommunications services is Telstra, who is also competing to provide mobile services to consumers. In contrast, mobile-only operators – such as VHA - will have no offsetting gain from the fixed-line side of their business following reductions in the price of the MTAS.

### 3.2.2 Changes in elasticity assumptions

The second set of inputs we have changes are the assumptions we have used for the own-price elasticities of demand for FTM calls, MTM calls and mobile subscriptions. In the base case, we relied on elasticity assumptions previously used by the ACCC and the NZCC. Under our sensitivity testing, however, we have applied estimates previously made by Vodafone Group. These changes have the effect of:

- Reducing the sensitivity of FTM calls to changes in the price of the service. As a result of this, fixed-line consumers will experience a smaller increase in consumer surplus following a reduction in the price of FTM calls. It also reduces the increase in producer surplus FNO operators experience following reductions in the price of the MTAS due to the lower demand response to any passed-through reduction in the price of FTM calls.
- Increasing the sensitivity of MTM calls to changes in the price of the service. This has the effect of reducing the loss in consumer surplus that mobile subscribers experience due to the smaller level of mobile subscriptions following an increase in the price of mobile subscriptions.
- Increasing the responsiveness of mobile subscribers to changes in the price of mobile subscriptions. This has the effect of leading to a greater reduction in mobile subscribers following a reduction in the price of the MTAS. In turn, this leads to greater losses in consumer surplus due to both the direct effects of reduced mobile subscriptions, and the indirect effect of other fixed and mobile subscribers having less people to whom they can make FTM and MTM calls.

Table 5: Aggregate welfare effects 2004-05 to 2009-10 with different elasticities

Welfare type	Base case	Alternative elasticities
Change in consumer surplus	\$205,386,089	(\$151,932,896)
Change in FNO producer surplus	\$2,142,935,600	\$1,682,035,173
Change in MNO producer surplus	(\$1,628,067,602)	(\$1,896,871,224)
Overall change in welfare	\$720,254,086	(\$366,768,946)

Source: Frontier Economics

Importantly, the results set out in Table 4 show that consumers and society as a whole will be worse off under the elasticity assumptions contained under our sensitivity testing. The essential intuition here is that the gains to FTM consumers will be overwhelmed in circumstances where there is little consumer response to reductions in the price of FTM calls relative to a situation where there is a greater consumer response to increases in the ARPU for retail mobile services. In essence, fixed consumers have relatively smaller responses (and hence welfare gains) in response to price falls compared to the response of mobile consumers to increases in the price of retail mobile services.

### 3.2.3 PSTN only FTM call prices and minutes

In this sensitivity, we model the welfare effects only with respect to changes in the price and quantity of PSTN FTM services. To do this we use estimates of PSTN FTM price per minute from the ACCC's imputation testing data combined with estimates of PSTN FTM minutes taken from Telstra's annual reports. This contrasts with the base case where combined estimates for PSTN and ISDN FTM prices and call minutes are used.

The major changes from the base case are the move from a gain in consumer welfare to a large loss in consumer welfare and the fall in overall welfare rather than a gain (see Table 6 below). This is driven by the lower level of FTM-pass through that has occurred with PSTN FTM calls following reductions in MTAS rates than with all (PSTN and ISDN) calls, as well as the lower volume of calls over which this more limited degree of pass-through has occurred.

We expect that this result can be in part attributed to greater competition in higher volume business services that would have seen more pass-through in ISDN call rates than for PSTN calls.

Table 6: Aggregate welfare effects 2004-05 to 2009-10 for PSTN FTM calls only

Welfare type	Base case	PSTN call prices and minutes
Change in consumer surplus	\$205,386,089	(\$1,308,443,079)
Change in FNO producer surplus	\$2,142,935,600	\$2,439,018,416
Change in MNO producer surplus	(\$1,628,067,602)	(\$1,396,068,641)
Overall change in welfare	\$720,254,086	(\$265,493,304)

Source: Frontier Economics

### 3.2.4 All changes in assumptions

In Table 6 below, we bring together the sensitivity tests together to analyse their combined impact on our welfare effects. We do this for the different elasticity and FTM call price and volume assumptions under both a 75 per cent and 100 per cent waterbed effect assumption.

Table 7: Aggregate Welfare effects 2004-05 to 2009-10 with different waterbed, elasticity assumptions and FTM call types

Welfare type	Base	75% waterbed plus different elasticity, FTM call price and volume assumptions	100% waterbed plus different elasticity, FTM call price and volume assumptions
Change in consumer surplus	\$205,386,089	(\$2,357,517,455)	(\$3,245,909,522)
Change in FNO producer surplus	\$2,142,935,600	\$2,357,306,718	\$2,344,110,511
Change in MNO producer surplus	(\$1,628,067,602)	(\$836,703,767)	(\$216,794,090)
Overall change in welfare	\$720,254,086	(\$836,914,504)	(\$1,118,593,100)

Source: Frontier Economics

### 3.3 Conclusions and Analysis

The analysis set out above leads us to make a number of conclusions:

- First, expanding the analysis of the welfare effects of reduced MTAS prices to include effects experienced in retail mobile markets means it is less clear whether consumers as a whole are better or worse-off as a result of reduced prices for the MTAS.
- Second, while reductions in the price of the MTAS are likely to improve consumer surplus for fixed-line subscribers, it is also likely to reduce welfare for mobile subscribers. Whether the gains to fixed-line consumers exceed the losses for mobile consumers depends crucially on the size of the waterbed effect relative to the extent of FTM pass-through. If FTM pass-through is low and the waterbed effect is high, it is almost certain that consumers as a whole will be worse off as a result of reductions in the price of the MTAS.
- Third, changes to key assumptions regarding the own-price elasticities of demand for FTM calls, MTM calls and mobile subscriptions can greatly reduce or eliminate any welfare gains one might expect from reductions in the price of the MTAS.
- Fourth, our analysis of FTM call price changes in Telstra's Annual Reports and the ACCC's imputation testing reports lead us to conclude that business consumers are likely to have benefitted far more from reductions in FTM call prices than residential consumers in the past.

Based on the conservative assumptions around the level of the waterbed effect, elasticities of demand and the type of the types of FTM calls included, our analysis shows that the greatest beneficiaries of past reductions in the price of the MTAS have been FNOs. While consumers have benefited under our conservative set of assumptions, their benefit is less than 10 per cent of that enjoyed by FNOs. This is because of the extent to which FNOs have been able to hold-on to a large proportion of reductions in the price of the MTAS through low levels of FTM pass-through and the extent to which mobile consumers suffer offsetting welfare detriments as a result of the waterbed effect.

Once we start to test for less conservative assumptions than those set out in our base case, it becomes less than clear that consumers and society as a whole have benefited from reductions in the price of the MTAS. Indeed, our analysis suggests it is possible that the only beneficiaries of reductions in the price of the MTAS have been FNOs, of which Telstra would be the most significant. In contrast, MNOs, consumers and society as a whole may well have been substantially worse off as a result of reductions in the price of the MTAS over the period from 2004-05 to 2009-10.

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D Frontier Economics' report: *Use of depreciated actual costs to set mobile termination rates*



# **Use of depreciated actual costs to set mobile termination rates**

**A REPORT PREPARED FOR VODAFONE HUTCHISON AUSTRALIA**

July 2011



# Use of depreciated actual costs to set mobile termination rates

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## Executive summary

Frontier Economics Australia (Frontier) has been engaged by Vodafone Hutchison Australia (VHA) to consider:

- The rationale for the use of depreciated actual costs (DAC) for setting a price for the mobile terminating access service (MTAS) in combination with a forward looking TSLRIC pricing methodology
- The merits of setting a MTAS price based on the operator with the lowest market share
- The utility of using VHA's regulatory accounting framework (RAF) data to estimate a DAC-based MTAS price.

This report details our consideration of these matters.

A key initial observation which influences the findings we make in our report is that the three access providers of the MTAS in Australia – Telstra, Optus and VHA – are different in important respects. In particular, each is likely to have a different cost of providing the MTAS; and two of the three mobile network operators (i.e. Telstra and Optus) operate a fixed-line network, while the third (VHA) does not. As a result of this, reductions in the price of the MTAS will affect each of these operators in different ways. Importantly, we observe that reductions in the price of the MTAS will likely represent:

- a reduction in revenues for all three mobile network operators (MNOs) due to the lower prices they will be able to charge for the MTAS, but
- a reduction in input costs of providing fixed-to-mobile (FTM) calls for only two of these operators (i.e. Telstra and Optus).

Given the relative market shares of each of the three MNOs in fixed and mobile markets, this implies that Telstra is likely to benefit from reductions in the price of the MTAS; Optus is likely to be worse-off and VHA will unambiguously be worse off. This leads to the observation that regulated reductions in the price of the MTAS will likely benefit the strongest mobile competitors and harm the weakest. It is truly one of the rare cases where regulation harms the smallest competitor in a market to the benefit of the largest.

With respect to the use of a DAC-based methodology to help inform estimates of an appropriate price for the MTAS, we find that:

- DAC, as recently adopted by the ACCC for the pricing of fixed access services, can be an appropriate input for determining prices for the MTAS. In particular, we argue that a DAC calculation of the cost of providing the MTAS should accompany any estimate worked out on the basis of TSLRIC. This will ensure that access prices are not too punitive for smaller MNOs. In

turn, this should help to maintain the legitimate business interests of all access providers, and maintain competition in the mobile market as a whole.

- A MTAS price set having regard to the actual costs of the operator with the lowest market share, but above the likely level of minimum efficient scale, would also help to maintain the incentives for new investment, and ensure that a smaller operator (such as VHA) remains a viable operator in the mobile market.
- VHA's Regulatory Accounting Framework (RAF) data could be used, subject to appropriate modifications, as a starting point for estimating a DAC-based valuation of the cost of providing the MTAS.
- If there is a wide variance between estimates of the cost of providing the service under a hypothetical forward-looking cost model and a model of the actual costs of providing the service, we believe the ACCC should consider setting an access price for the service that falls within the range of these cost estimates.

# 1 Introduction

The Australian Competition and Consumer Commission (ACCC) has commenced an inquiry into making an Access Determination for the declared mobile terminating access service (MTAS). It has issued a discussion paper for this inquiry and is seeking submissions from interested parties on a proposed methodology for MTAS pricing and other matters.<sup>1</sup>

Frontier Economics Australia (Frontier) has been engaged by Vodafone Hutchison Australia (VHA) to consider:

- The rationale for the use of depreciated actual costs (DAC) for setting a MTAS price along with a forward looking TSLRIC pricing methodology
- The merits of setting a MTAS price based on the operator with the lowest market share
- The utility of using VHA's regulatory accounting framework (RAF) data to estimate a DAC-based MTAS price.

This report details our consideration of these matters. We make reference to the content of the ACCC's discussion paper as appropriate, noting that we have not been asked to comment in detail on all the potential pricing methodologies raised in the ACCC's discussion paper.

## 1.1 Relevant legislative criteria

Section 152BC of the Competition and Consumer Act (CCA) specifies that the ACCC can make a written determination relating to access to a declared service. This determination may specify any terms and conditions (including price) of an access seeker's access to a declared service. The MTAS is such a declared service.

In determining an appropriate price for the MTAS, section 152BCA specifies that:

- (1) The Commission must take the following matters into account in making an access determination:
  - (a) whether the determination will promote the long-term interests of end-users of carriage services or of services supplied by means of carriage services;
  - (b) the legitimate business interests of a carrier or carriage service provider who supplies, or is capable of supplying, the declared

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<sup>1</sup> ACCC, *Domestic Mobile Terminating Access Service (MTAS)*, Discussion Paper, June 2011 ('MTAS Discussion Paper 2011').



service, and the carrier's or provider's investment in facilities used to supply the declared service;

- (c) the interests of all persons who have rights to use the declared service;
- (d) the direct costs of providing access to the declared service;
- (e) the value to a person of extensions, or enhancement of capability, whose cost is borne by someone else;
- (f) the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility;
- (g) the economically efficient operation of a carriage service, a telecommunications network or a facility.

(2) If a carrier or carriage service provider who supplies, or is capable of supplying, the declared service supplies one or more other eligible services, then, in making an access determination that is applicable to the carrier or provider, as the case may be, the Commission may take into account:

- (a) the characteristics of those other eligible services; and
- (b) the costs associated with those other eligible services; and
- (c) the revenues associated with those other eligible services; and
- (d) the demand for those other eligible services.

(3) The Commission may take into account any other matters that it thinks are relevant.

In determining whether a particular thing promotes the long-term interests of end users, regard must be had to the extent to which the thing is likely to result in the achievement of the following objectives, as set out in Section 152AB of the Act:

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

It follows, therefore, that these are the criteria that must be applied when considering whether an estimate of the DAC of providing the MTAS can be an appropriate input to help determine an access price for the service.

We therefore use these criteria to guide our analysis in this report.

## 1.2 Structure of this report

The remainder of the report is structured as follows:

- Section 2 sets out background information illustrating why all mobile network operators (MNOs) are not the same, and therefore why a choice of pricing principle can have different impacts on different MNOs.
- Section 3 then details why DAC can be an appropriate input for determining prices for MTAS compared to other possible pricing approaches.
- Section 4 discusses the merits of determining a MTAS price on an asymmetric and symmetric basis, and whether the use of the operator with the lowest market share is appropriate in the later case.
- Section 5 considers the utility of using VHA's RAF data for estimating a DAC-based MTAS price, and how any limitations under this approach compare with limitations of using alternative pricing principles for the MTAS.



## 2 Not all mobile network operators (MNOs) are the same

The MTAS is a unique service for a number of reasons. First, it is unlike most other declared services in that the ACCC (and indeed other regulators around the world) has chosen to regulate the price of the service despite the fact it is provided by more than one network operator. This is different to most other regulated services – across both telecommunications and other regulated industries – where only one provider of a service in a given geographic area has its access prices set under regulation. For instance, while the ACCC’s declarations of the unconditioned local loop service (ULLS), the local carriage service (LCS) and the public switch telecommunications network (PSTN) originating and terminating access services declarations are all carrier neutral, in practice the ACCC has only set prices for access to these services in arbitration proceedings when they are provided by one access provider – Telstra. In the case of the MTAS, however, the ACCC has set access prices for 4 different MNOs in the past. It is also the case that MNOs that are clearly not dominant in the provision of retail mobile services – such as Vodafone and Hutchison Telecommunications – have had the prices they charge for the MTAS regulated in the past.

Second, the MTAS is essentially a “two-way” access service, in that MNOs who provide access to the service generally also seek to acquire access to services provided by the access seeker. For example, while VHA will provide the MTAS to fixed-line access seekers seeking to provide fixed-to-mobile (FTM) calls to VHA subscribers, VHA may in turn be likely to seek access to termination services provided by fixed-line consumers whenever its subscribers seek to make mobile-to-fixed (MTF) calls. This is also important in the case of calls between subscribers on different mobile networks. Here, all three existing MNOs (Telstra, Optus and VHA) seek access to each other’s networks in order for “off net” mobile-to-mobile (MTM) calls to be made. This means that every MNO is both an access provider and access seeker of the MTAS, and each requires other interconnection services such as PSTN terminating access services.

These factors lead to two important observations in relation to the provision of the MTAS:

- First, not all providers of the declared service are the same. Importantly, the cost of providing the MTAS will vary across the three MNOs. This means it is impossible to set a uniform access price for the MTAS across all MNOs that reflects the actual cost each faces when providing the service to access seekers.
- Second, the fact that MNOs are in some cases both access providers and access seekers of the MTAS means that decreases in the price of the MTAS can have different impacts on different MNOs. In particular, while

**Not all mobile network operators (MNOs)  
are the same**

reductions in the price of the MTAS will almost certainly harm the net cash flows of VHA as it only operates a mobile network, reductions may actually benefit the cash flows of Telstra as it is the most significant access seeker of FTM calls.

In turn, these observations have important implications for whether different types of pricing principle are likely to meet the criteria set out in s 152BCA of the CCA.

Each of these observations is explained in greater detail below. The implications of these observations are drawn upon when reaching conclusions in later parts of this report.

## 2.1 The cost of providing the MTAS will vary between different network operators

It is well accepted by cost modellers that the cost of providing the MTAS will vary depending on a range of factors. For instance, in the Final Report released in relation to its 2004 decision to declare the MTAS, the ACCC observed that factors which influence the cost of the MTAS in different jurisdictions (and potentially for different MNOs within a given jurisdiction) include:

- geographic terrain;
- population density;
- network usage and scale;
- land and labour costs in different jurisdictions;
- spectrum allocations;
- the extent to which MNOs are vertically-integrated fixed and mobile network operators;
- network purchasing power;
- cost of capital in different jurisdictions; and
- the mobile technology employed in different countries (i.e. GSM or CDMA).<sup>2</sup>

While some of these factors may be consistent in the way they affect each of the three MNOs in Australia (i.e. we expect that land and labour costs faced by each MNO would be broadly similar), other factors are likely to vary significantly. For instance, the larger market share and call volumes of Telstra suggest its network

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<sup>2</sup> ACCC, *Mobile Services Review – Mobile Terminating Access Service, Final Decision on whether or not the Commission should extend, vary or revoke its existing declaration of the mobile terminating access service*, June 2004 at pps. 214-215.

**Not all mobile network operators (MNOs)  
are the same**

usage and scale will be greater than that of Optus and VHA. This would be one factor that would suggest its costs of providing the MTAS might be lower than that of its rivals. Further, while Australia's geographic terrain and population density will be the same for all MNOs, the different MNOs do not have the same levels of network coverage. Further, Telstra and Optus are vertically integrated fixed and mobile network operators, while VHA is not.

For these reasons, it is almost certainly the case that the cost of providing the MTAS in Australia will vary between the three MNOs.

## 2.2 Reductions in MTAS rates will impact different operators in different ways

An important feature of the MTAS is that two of the access providers of this service, Telstra and Optus, provide fixed-line services to consumers, while the third MNO (VHA) does not. This is important, because it means that:

- Telstra and Optus are both access seekers of the MTAS in order to provide FTM calls to their consumers. It follows, therefore, that while reductions in the price of the MTAS will decrease MTAS revenues they earn from terminating FTM calls for other fixed-line service providers, it will also decrease the input costs these businesses face when they provide FTM calls that terminate on another operator's mobile network. As a result, reductions in MTAS prices will represent both a reduction in revenues and a saving in costs. In turn, it is possible, depending on a number of factors (including the relative share of each operator's fixed-line and mobile businesses, and the distribution of FTM calls between different networks) that a reduction in the price of the MTAS could lead to a net gain or a net benefit with respect to the change in termination revenues and costs associated with the provision of FTM calls. Given Telstra's relatively larger share of FTM calls than mobile subscribers, we expect it would likely be a net beneficiary of reductions in the price of MTAS. In contrast, given Optus is likely to have a lower share of FTM calls than mobile subscribers, we expect it would be a net loser following reductions in the price of the MTAS.
- While VHA is both an access provider and access seeker of MTM calls, it does not presently have a fixed-line business in Australia. This means it is only an access provider of the MTAS for the provision of FTM calls. This means that while reductions in the price of the MTAS will reduce its revenue from terminating FTM calls made to its subscribers, it will not experience any cost savings because it does not provide FTM calls. This means it is almost certainly going to be a net loser from reductions in the price of the MTAS.

This leads to the result that regulated reductions in the price of the MTAS will, on balance, likely harm the operating cash flows of the smallest operator in the

**Not all mobile network operators (MNOs)  
are the same**

mobile market (i.e. VHA) the greatest. Conversely, reductions in the price of the MTAS will likely benefit the largest operator in the mobile market (i.e. Telstra) the most. In other words, regulated reductions in the price of the MTAS will likely benefit the strongest mobile competitors and harm the weakest. It is truly one of the rare cases where regulation harms the smallest competitors in a market to the benefit of the largest.

Not all mobile network operators (MNOs)  
are the same

### 3 Why DAC is an appropriate input for determining prices for the MTAS

When determining the price for a regulated service, the ACCC has traditionally taken a two-stage approach:

- First, it determines what is the appropriate principle to apply when setting a price for access to a declared service. In the past, this has tended to be some form of cost-oriented pricing principle, such as a form of long-run incremental cost or retail-minus avoidable cost pricing principle.
- Second, it makes a decision on how best it can estimate a price in accordance with this pricing principle.

In the past, the ACCC has chosen to use a total service long-run incremental cost (TSLRIC) pricing methodology for setting prices for access to the MTAS. In applying this methodology, however, it has also chosen to:

- Include within its pricing principle a contribution towards the recovery of the common costs a MNO would face when supplying this and other services. This has been represented by adding a '+' to TSLRIC, so that the principle is often referred to as TSLRIC+.
- Estimate costs that should be included in TSLRIC+ using a forward-looking costing methodology. This is analogous to using an optimised replacement cost methodology.
- Apply a glide path of gradual price reductions over a series of periods where the existing price of the MTAS lies above its estimate of the TSLRIC+ of providing the service.

With regard to estimating a price in accordance with this pricing principle, the ACCC has used a number of measures to estimate TSLRIC+. Initially, it benchmarked cost with reference to a small number of overseas countries where the national regulatory authority (NRA) had constructed a cost model using a methodology similar to that preferred by the ACCC. Given this was a somewhat imprecise way to estimate the cost of providing the MTAS in Australia, the ACCC chose to set prices at a level at the top of the range of cost estimates from these overseas jurisdictions. This gave rise to an initial cost estimate of 12 cpm.

More recently, the ACCC has engaged an economic consulting firm to construct a forward-looking cost model to estimate the TSLRIC+ of providing the service. It has then used this, in conjunction with a range of other information (including benchmarks from overseas jurisdictions and data available to it under the Regulatory Accounting Framework (RAF)) to estimate a lower price of 9 cpm for the service.

**Why DAC is an appropriate input for determining prices for the MTAS**



In this section of our report, we consider whether DAC might be used as a complement to forward looking TSLRIC+ for setting prices for the MTAS. In order to do this, we:

- Set out previous findings of the ACCC with respect to the meaning of the legislative criteria that should be applied under the CCA to set prices for a declared service (section 3.1).
- Indicate why estimating costs having regard to estimates of the DAC of providing the MTAS has a number of benefits such that it can be a useful input to help determine an access price for the MTAS consistent with the legislative criteria set out in section 152BCA of the CCA (section 3.2).

### 3.1 The ACCC has a long history in applying the legislative criteria to setting access prices

The ACCC has detailed its understanding of the meanings of these various criteria in the course of many regulatory proceedings. We note in particular that in its MTAS Discussion Paper the ACCC has referred to the factors as outlined below in defining some of the key criteria.

#### *LTIE*

This includes provision of:

- goods and services at lower prices
- goods and service of a high quality, and/or
- a greater diversity of goods and services.

#### *Promotion of competition*

The ACCC defines this as removing obstacles to end users gaining access to carriage services and services supplied by means of carriage services in markets for which the access service is an input. This includes the ‘ability of competing providers to provide telephony and broadband services’.<sup>3</sup>

#### *Efficient use of and investment in infrastructure*

The CCA Act refers to efficient use and investment of infrastructure as including consideration of, *inter alia*:

- the legitimate commercial interests of the supplier or suppliers of the services, including the ability of the supplier or suppliers to exploit economies of scale and scope

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<sup>3</sup> MTAS Discussion Paper 2011, p. 29.

- incentives for investment in the infrastructure by which services are supplied; and any other infrastructure by which services are, or are likely to become, capable of being supplied, and
- the risks involved in making the investment.

The ACCC considers that three components of economic efficiency should be considered under this criterion. These are:

- Productive efficiency – Achieved where individual firms produce the goods and services that they offer at least cost
- Allocative efficiency – Achieved where the prices of resources reflect their underlying costs so that resources are then allocated to their highest valued uses (i.e. those that provide the greatest benefit relative to costs)
- Dynamic efficiency – Where industries make timely changes to technology and products in response to changes in consumer tastes and in productive opportunities.

*Legitimate commercial interest of the provider of the declared service*

This is specified as the access provider's ability to recover its costs including a normal commercial return on investment having regard to the risk involved.

*Direct costs of providing access*

The ACCC interprets this as the costs incurred by the provision of access. In reference to a Tribunal decision, the ACCC notes that this criterion is concerned with ensuring that the costs of providing the access service are recovered.

*Consideration of other eligible services*

The provisions of this criterion allow the ACCC to consider impacts of its determination on other relevant communications services.

## 3.2 DAC

A DAC estimate of the cost of providing the MTAS would involve estimating costs using a building block model (BBM). This would contain valuations of actual capital costs incurred by a mobile operator to provide the MTAS (including a rate of return), plus a measure of operating and maintenance (O&M) costs. The initial stock of actual capital costs incurred would then be "rolled forward" each year based on net capital additions (actual capital expenditure less allowance for depreciation). The ACCC has recently adopted this costing approach for determining the prices of fixed services, having previously used a forward-looking TSLRIC to set the prices for these services.

In the context of fixed services, the ACCC has stated that the use of a BBM based on DAC meets the LTIE and the other legislative criteria for reasons that include:

**Why DAC is an appropriate input for determining prices for the MTAS**

- locking-in a value for the RAB provides predictable revenue and price paths, thereby minimising the likelihood of windfall gains or losses. This certainty promotes efficient investment.
- it provides regulatory certainty for both the access provider and access seekers thereby promoting efficient investment and competition and the markets for carriage services.
- it enables economically efficient investment decisions to be made regarding future infrastructure requirements
- it ensures the access provider is adequately compensated for the cost of providing the declared fixed line services over time as the revenue requirement covers the access provider's efficiently incurred costs (including a commercial return on investment) and
- determining prices through a transparent and cost-based pricing model will assist access seekers in negotiating equivalent access to the declared fixed line services thereby promoting competition in downstream markets.<sup>4</sup>

As DAC is readily observable and verifiable, it reduces uncertainty and the regulatory costs associated with hypothetical cost estimations such as TSLRIC, LRIC and other replacement cost methods. As the ACCC has stated:

a DAC approach is relatively simple and objective. Values for actual gross historic costs for fixed network assets can be derived from regulatory and/or general ledger accounts. As this information comes from audited accounts prepared by the regulated entity, there is less scope for dispute over the cost information compared to hypothetical and subjective replacement costs. A DAC approach is based on the best available objective and independently verified information.<sup>5</sup>

Providing this certainty should promote efficient incentives for investment. As the ACCC has previously commented:

a DAC pricing approach provides efficient investment incentives because access prices are set to allow the access provider to recover its actual capital costs.<sup>6</sup>

The case for the adoption of DAC has in large part been built on concerns that have arisen with respect to the use of TSLRIC and LRIC. For example, it is better able to provide the necessary investment incentives without the downsides that arise from estimating hypothetical costs, and could actually improve the competitive outcomes in the mobile market.

In reflecting what is actually spent by mobile operators, DAC has the desirable property of providing a seamless transition in response to changing technology.

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<sup>4</sup> ACCC, *Public inquiry to make final access determinations for the declared fixed line services*, Discussion paper, April 2011 (ACCC fixed line services discussion paper April 2011), p. 180.

<sup>5</sup> ACCC, *Review of the 1997 telecommunications access pricing principles for fixed line services*, Draft report, September 2010, p. 27.

<sup>6</sup> ACCC, *Review of the 1997 telecommunications access pricing principles for fixed line services*, Draft report, September 2010, p. 26.

Hence, it is ideally suited to providing for cost recovery during the transition of mobile technologies from GSM to 3G and ultimately LTE. By contrast, use of TSLRIC assumes an instantaneous adoption of the best-in-use technology to provide a given service, leaving previous expenditure stranded. This does not reflect how businesses actually incur their expenditure.

In the absence of retail price regulation, DAC also has very good incentive properties to drive efficiency improvements. This is because every dollar that is saved in expenditure can be kept (at least until, in the case of the mobile market, it is competed away).

Further, unlike for fixed line services, the existence of strong competition between network operators is likely to mean that an efficiency incentive mechanism is not required to ensure that only efficient levels of investment and operating expenditure are incurred over time. This is acknowledged by the ACCC in its discussion paper:

The retail mobile services market is characterised by three MNOs of similar scale which are able to constrain the others' retail pricing. This environment is likely to encourage MNOs to continuously improve the efficiencies of their networks and to make efficient investments in new network elements.<sup>7</sup>

One of the challenges of applying DAC, however, is arriving at a suitable cost allocation methodology for common or shared costs for the MTAS and other services. This is more problematic than with forward-looking cost methodologies because legacy costs may not have been allocated transparently, or been incurred to meet other corporate requirements. In this regard, the use of forward looking TSLRIC activity or value based allocations may usefully help to inform any reallocation of common and shared costs that have been incurred historically.

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<sup>7</sup> MTAS Discussion Paper 2011, p. 17.



## 4 The suitable operator for determining MTAS costs

As indicated in section 2, it is almost certain that the actual cost of providing the MTAS will vary depending on the network upon which it is provided. This is because the cost of providing the MTAS can vary according to a number of factors, such as network scale and usage; population density and the geographic terrain in the areas where the MNO has provided for network coverage; and whether the network operator is a vertically integrated fixed and mobile network operator. Each of these factors is likely to vary, to differing degrees, for the mobile networks of the three MNOs in Australia.

To the extent that the ACCC might consider using a DAC methodology to determine the cost of providing the MTAS, therefore, it follows it will need to either:

- Set a separate price for each MNO in line with the actual costs of providing the MTAS on its network. To the extent costs vary across operators, this will imply different prices for each operator. This is referred to as “asymmetric” regulation of MTAS rates.
- Set a uniform price for each MNO. Where the ACCC sets prices in this way, this is referred to as “symmetric” regulation of MTAS rates. In practice, this could be achieved in a number of ways, including by:
  - Setting MTAS rates equal to the cost estimate for one of the three MNOs being regulated. In this regard, prices could be set equal to the cost of the highest cost operator; the lowest cost operator; or the medium cost operator. Where prices are set equal to the cost of the highest cost operator, we refer to this as the “highest cost operator standard”.
  - Setting MTAS rates equal to the actual cost that would be incurred by a MNO with a market share equal to the market share each MNO would enjoy if all MNOs had the same market share. In Australia, this would imply estimating the cost of a MNO that has a 33.3 per cent market share. Where prices are set in this way, this is referred to as the “efficient operator standard”.

In this section of our report, we consider the arguments for and against the use of symmetric mobile termination rates based on an efficient operator standard in comparison with asymmetric rates based on each operator’s costs. We also consider the case for a symmetric termination rate based on the smallest operator’s actual costs.

## 4.1 The efficient operator standard

It is current ACCC regulatory practice to apply a symmetric rate across operators based on an 'efficient' operator's costs. This efficient operator standard is based on a hypothetical operator that has a market share equal to the level that would prevail if the market were divided equally among the incumbent operators.

There are two main arguments advanced for the use of an efficient operator symmetric MTAS rate over asymmetric rates that reflect each operator's costs.

The first argument is that it promotes productive efficiency, by encouraging the operators that don't have this level of efficiency to become more efficient to the benefit of end-users. This is not, however, a costless exercise because it implies less efficient firms will not be able to recover their costs of providing the MTAS for so long as they do not meet the efficient operator standard. To the extent individual firms are unable to reach the efficient operator standard over a reasonable period of time, the possibility of exit altogether should not be overlooked. Further, to the extent that scale advantages give one or more operators an initial advantage when competing in the market, setting prices for all operators on the basis of an efficient operator standard risks driving the market to only a single or small number of suppliers of the regulated service.<sup>8</sup> Setting prices on the basis of an efficient operator standard may also potentially discourage those operators that have achieved more than this level of efficiency to continue to find efficiencies in order to reduce their costs. Alternatively, it has been proposed that the most efficient operators will use their excess profits to invest in innovations, thus improving dynamic efficiency.

The second argument is that it reduces the extent to which the most efficient mobile operators and fixed operators subsidise the relative inefficiencies of smaller mobile operators by paying inefficiently high termination rates, that are passed on to end-users. It is claimed this can encourage inefficient entry. However, the competition that arises from such entry may be beneficial to the extent it helps to promote dynamic efficiency<sup>9</sup> and produce a welfare-enhancing increase in product variety.<sup>10</sup> Another counter to the inefficient entry argument is that the new entrant will have higher costs for other services as well, so this

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<sup>8</sup> To date, this risk has not been so high in Australia, as the ACCC has consistently set access prices above its estimates of the forward-looking cost of providing the MTAS – either by adopting a glide path of rate reductions or by explicitly setting access prices above its modelled TSLRIC estimates. This may change, however, if the ACCC moves to aggressively reduce prices immediately toward estimates of the forward-looking TSLRIC of supplying the service.

<sup>9</sup> European Regulator's Group (ERG), *ERG's common position on symmetry of fixed call termination rates and symmetry of mobile call termination rates*, 2007, pp. 4-5, 81-83.

<sup>10</sup> Frontier Economics, *Response to ACCC draft decision on Vodafone's MTAS access undertaking – 'most efficient operator' issue*, Report for Vodafone Australia, February 2006, p. 10.

would tend to counteract the extent to which high termination rates encourage inefficient entry.

Symmetrical rate regulation based on the efficient operator standard is in essence a form of yardstick regulation. Therefore, some of the difficulties that apply to this form of regulation will also apply. These include:

- Compiling the necessary data
- Accounting for (or the potential to overlook) exogenous differences in firm attributes that are beyond management control
- The possibility of efficiency gains being achieved at the expense of quality if there is not an effective quality or performance regime in place.

Further, symmetrical rate regulation is not the only possible efficiency mechanism that may be employed. For example, a CPI-X glide path might be imposed for termination rates of the operators that do not meet an efficient operator standard in order to encourage them to find productivity improvements, and therefore lower their costs over time.

## 4.2 Case for smallest operator standard

One of the main arguments put forward in favour of the use of asymmetric rates is that they do not disadvantage new entrants, and that this facilitates greater mobile market competition. The counter arguments to this are that it will create efficiency losses due to the impact on the rest of the market, and it is an inefficient means of introducing greater competition compared to other possible policy instruments.<sup>11</sup> It is debatable as a matter of empirics whether these effects will be major and outweigh the benefits of greater competition. It may also be a relatively low-cost measure to the economy of introducing greater competition given the costs involved in raising and redistributing taxation that might otherwise be needed to promote competitive outcomes for consumers.

By and large, we do not support the use of asymmetric MTAS rates for different MNOs. However, if the ACCC is to set a price for the MTAS having regard to a DAC-based estimate of the cost of providing the service, we think it could reasonably consider basing its DAC estimate on the cost of the smallest operator in the market. When used in conjunction with a TSLRIC estimate of the cost of providing the service, this would allow the ACCC to understand the extent to which the TSLRIC estimate of providing the service diverges from the actual costs of the highest cost provider of the service. This would enable the ACCC to make meaningful judgements as to the risk that TSLRIC prices might impede the

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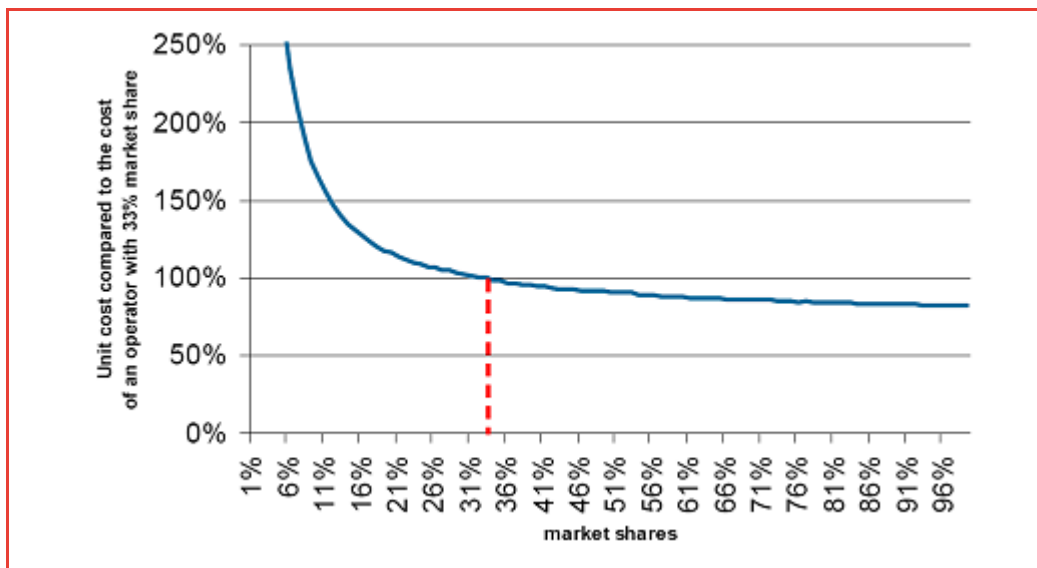
<sup>11</sup> T. Valletti, Asymmetric regulation of mobile termination rates, (mimeo), 14 December 2006.



ability of the smallest operator to compete in the market, and the impact this would be likely to have on competition for retail mobile services.

This is not to say that such a cost estimate should be made on the basis of *any* given market share of the incumbent with the lowest market share. For example, if such an incumbent has only just entered the market and has a trivial market share of say 1-2%, its unit cost would not be reflective of its target market share and cost recovery expectations. To address this issue, we note that the European Commission has adopted the concept of ‘minimum efficient scale’ which they have determined to be 20% of the market based on the level of market share or penetration at which unit costs begin to level out.<sup>12</sup> This is illustrated in the following graph published by the European Regulators Group in respect of cost modelling for the Romanian market.<sup>13</sup> We observe that VHA has a market share above this 20% threshold level, so using its costs will potentially be less generous than the European practice.

Figure 1: Romanian mobile operator unit costs relative to 33% efficient operator standard



Source: ERG

There are a number of other arguments that could also be advanced in support of estimating the DAC of providing the MTAS on the basis of the costs of the smallest operator. First, using an estimate of costs of the smallest operator is

<sup>12</sup> European Commission, ‘Commission recommendation of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (2009/396/EC)’, *Official Journal of the European Union*, 20 May 2009, L124/74 and Explanatory Note (Commission staff working document), pp. 26-27.

<sup>13</sup> European Regulators’ Group, *ERG public consultation on a draft Common Position on symmetry of mobile/fixed call termination rates*, 2007 (83), p. 80.

compatible with the use of an actual cost methodology to determine access prices. That is, if the intention behind using a DAC-based cost estimate is to ensure access prices are set having regard to the actual costs of providing the service, it makes sense to determine the actual costs of a particular network operator, and not the costs of a hypothetical operator using an efficient operator standard.

Second, an access price based on the cost of the smallest operator in the market would be more consistent with the price that would prevail under Bertrand oligopolistic competition. That is, the ACCC seems to believe that an *ideally competitive* termination rate would be one that would reflect the hypothetical costs of equally efficient mobile operators with equal market shares. We do not consider this is an ideal which has theoretical support given the market shares and cost differentials prevailing in the mobile services market. A more realistic competitive ideal that may reflect the prevailing conditions of the Australian mobile market would be one that accords with the theory of Bertrand oligopolistic competition, where a small number of firms supply differentiated products and also incur different short-run marginal costs.<sup>14</sup> Under this form of Bertrand oligopolistic competition, firms set their profit maximising prices taking into account the prices set by other firms operating in the market. Importantly, it is possible for firms with higher costs to survive in the market by charging higher prices. However, so long as there is the possibility of some product substitution at the margin (which we would expect in the case of mobile services), prices charged by each firm are constrained below the monopoly level.<sup>15</sup> Hence, regulating the maximum rate to the cost faced by the smallest and highest cost operator (including an allowance for fixed costs in this case) delivers market outcomes closest to this market equilibrium.<sup>16</sup>

Third, in the case of Australia, the assumed efficient operator market share with the presence of 3 operators would be 33.3% of total subscribers. This does not differ greatly from VHA's market share of around 28%, so any efficiency loss from adopting VHA's costs to determine the MTAS price is likely to be relatively small. Further, it can be argued that Telstra, with its 40% or so mobile market share, already benefits from use of the efficient operator standard. We don't believe there is any evidence that Telstra has used profits from mobile

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<sup>14</sup> While it is arguable that mobile termination is not differentiated, mobile services as a whole offered by each carrier (and which interact with the price of mobile termination via waterbed effects) are clearly differentiated, and do command different prices.

<sup>15</sup> D. Basanko, et. al., *Economics of Strategy*, Second Edition, John Wiley & Sons, 2000, pp. 256-258.

<sup>16</sup> In making reference to the competitive ideal here, we accept that there are other unique features of the MTAS that enable above cost pricing, particularly by the smallest operator, that could provide a case for MTAS rate regulation. See, for instance, J. Gans and S. P. King, 'Mobile network competition, customer ignorance and fixed-to-mobile call prices', *Information Economics and Policy*, 12, 2000, pp. 305-306.

termination to price its retail services in a predatory fashion, unless it can be argued that its investment in greater network coverage is a form of predation. In any case, it would be hard to argue that this investment has damaged the LTIE given the offsetting benefits it has provided (e.g. rural population access, increased community safety etc.).

Overall, there is merit in ensuring that the MTAS rate is not set at a level that risks mobile operators not being able to recover their costs, so that they do not make investments that would otherwise be efficient. The highest cost operator's cost can serve as the basis for setting a suitable upper-bound MTAS rate in order to minimise this risk, both in comparison to a hypothetical symmetrical rate or rates set on the basis of each operator's actual costs.

## 5 Deriving a DAC-based estimate for the price of the MTAS using the RAF

In its MTAS discussion paper, the ACCC raises some doubts as to whether the Regulated Accounting Framework (RAF) returns submitted by mobile carriers are suitable for determining a MTAS price based on DAC. Two concerns expressed are that the RAF record keeping rules (RKRS) do not required 'segregated reporting' of the MTAS, and that carriers may apply different cost allocation methodologies.

We have reviewed VHA's RAF return for 2009-10 and Vodafone's (i.e. pre-merger with Hutchison) return for 2008-09 for the purpose of assessing the suitability of its RAF data for deriving a DAC-based estimate of the MTAS rate. We have also clarified a number of matters with VHA where we had some concerns, and our assessment reflects these clarifications.

### 5.1 Overview of VHA and Vodafone's RAF data for MTAS

We start with the 2008-09 data because it is more comprehensive than the most recent one. It applies only to Vodafone, and no equivalent reporting requirement was imposed on Hutchison. Key features include:

- An itemised capital adjusted profit statement, including cost items broken into depreciation and maintenance, and an overall capital return
- An itemised capital employed statement including depreciation of each capital items and an overall capital return
- An itemised fixed asset statement
- Each of these statements broken down into retail, internal wholesale and external wholesale activities (in turn broken down into the MTAS and other external wholesale services)
- An estimated WACC for calculating the capital returns.

The 2009-10 RAF report does not include all the information from the previous version of the report. This reflects that the reporting requirements were relaxed by the ACCC. Specifically we note:

- There is no allowance for a cost of capital incorporated into the profit statement
- There is no capital employed statement (although itemised depreciation is included in the profit statement)

- The fixed asset statement is not reported separately by retail and external wholesale services (including MTAS and other external wholesale services)
- There is no WACC reported.

VHA has advised that it still collects most of this information, and it could provide the omitted bits of information to the ACCC if it were requested.

Based on the assessment above, we believe that VHA's RAF data framework (i.e. including the data that is not reported to the ACCC) does contain the necessary information to provide a suitable starting point for determining a DAC-based estimate of the cost of providing the MTAS. In particular, it includes a categorisation of actual costs that is likely to be far more detailed than that contained in a bottom-up forward-looking TSLRIC model such that it can provide significant clarity over the actual costs faced by a MNO when providing the MTAS. Moreover, if an approach is followed of using VHA's costs as the basis of estimating the DAC of providing the MTAS, then problems of consistency with other mobile operators' data fall away.

## **5.2 While we have some concerns with using the RAF, most of these concerns are not specific to the use of DAC**

We do, however, have some concerns with the use of RAF data to estimate a DAC-based estimate of the cost of providing the MTAS that would need to be addressed by the ACCC. In the first instance, it is likely the ACCC would need to review the cost allocation factors used in the RAF. We have not reviewed the cost allocation factors contained in the RAF in any detail, but note that these were established some time ago when network utilisation and market factors were likely to have been significantly different to that which exists today. That said, this is an issue that would be common to any other form of cost estimate used to help inform an appropriate price for the MTAS. For instance, if the ACCC decided to estimate prices using a forward-looking TSLRIC model similar to that previously developed for it in 2006, it would still need to review cost allocation factors for the purpose of that modelling exercise. In other words, concerns around cost allocation factors are not necessarily specific to the application of the DAC methodology.

Other concerns that would also be common to estimating DAC using RAF data and to estimating costs using other methodologies include that:

- It would be better if the MTAS rate for future periods can be projected based on historical trends over several years. The VHA RAF data is not suitable for this purpose, however, as only one or two years of data will be available. Accordingly, the ACCC may need to consider using trend data from other operators who have a longer time series of data, and extrapolating these

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trends to VHA's data. Care may need to be taken when conducting such an exercise, however, due to the differences that may exist between VHA and these other operators.

- The projected growth of mobile data traffic may not be reflected in the historical trends of the RAF data for all operators. This will affect the allocation of costs to voice services (including the MTAS) compared to data services. An appropriate adjustment may therefore need to be made to cost allocation factors in projecting the MTAS rate.

Overall, we consider that the RAF data for VHA provides a suitable framework from which to estimate the MTAS price on a DAC basis. Those issues that we have identified are not likely to be insurmountable for the ACCC and VHA (and potentially other operators) to resolve. This suggests that a new regulatory instrument is not required, but some revisions to improve its robustness would be worthwhile. The ACCC should also obtain the complete information obtained through the Vodafone RAF, rather than the short version that VHA was required to submit.

### 5.3 Future depreciation with the use of DAC

Upon establishing an initial capital base using DAC, an issue for the ACCC will be the appropriate depreciation method for assets going forward and whether the change in depreciation methodology could give rise to windfall gains or losses. Given that the RAF uses straight-line depreciation, the most straightforward approach would be to continue with the depreciation profile already established by this method. However, two main criticisms might be leveled at this approach. The first is that the straight-line depreciation profile may not reflect economic depreciation of the assets used. Economic depreciation is designed to reflect the change in the market value of an asset, which is related to its earning potential. For industries with a high degree of technological change, use of economic depreciation will tend to imply a greater depreciation amount earlier in an asset's life. In industries with rapidly growing demand, economic depreciation may increase over time so that each unit produced bears a similar amount of depreciation. This was the approach adopted for the WIK TSLRIC model of mobile termination, which used a tilted annuity approach to depreciation to 'backload' the depreciation profile.

A second criticism is that in circumstances where the prices of assets change substantially over time, when it comes time to replace these assets, there can be major jumps in the depreciation charges and prices if straight-line depreciation is applied.

In light of these criticisms, regulators have used other depreciation methods including tilted annuities that take into account the change in market value and price trends in the replacement value of assets.

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Given the considerations discussed above, the ACCC will have to decide whether straight line or one of the other depreciation methods is most appropriate for the assets used to provide the MTAS. If the MTAS asset base is relatively stable, demand for the assets' services are relatively constant and there are no major changes expected in the replacement value of assets, then straight line depreciation should serve as a reasonable proxy for the other depreciation approaches. If, on the other hand, the ACCC were minded to change depreciation approach because one or more of these conditions were not met, this would need to be approached with caution. This is because changing depreciation profiles for existing assets can compromise a firm's ability to recover its previously incurred costs.

## 5.4 The role of a DAC-based MTAS rate

It is our view that a DAC based estimate should be used to complement a TSLRIC estimate of the MTAS. By doing this, the ACCC will be able to assess whether there is a substantial difference between the forward-looking cost of providing the service and the actual cost faced by providers of the service.

Where the TSLRIC cost is substantially below the DAC estimate, a price based purely on a forward-looking cost estimate for a hypothetical firm that does not exist would likely:

- Not be in the legitimate business interests of the regulated firm, because it would be unable to recover the costs of providing the service that it has actually incurred in providing the service
- Distort competition – both between fixed and mobile operators; and between those MNOs that are access seekers for the provision of FTM calls (such as Optus and Telstra) and those that are not (such as VHA).

In circumstances where there is a wide variance between estimates of the cost of providing the service under a hypothetical forward-looking cost model and a model of the actual costs of providing the service, we believe the ACCC should consider setting a price that falls within the range of these cost estimates.

Finally, it is our view that efforts to benchmark the costs of the MTAS with cost-based MTAS rates in other countries as a complete alternative, or as a 'sanity check', on a locally derived MTAS rate could prove problematic. This is because increasingly a variety of costing methods are being employed to estimate MTAS rates (including pure LRIC in Europe). Further, there are the usual difficulties of ensuring the benchmarks accurately reflect similar exogenous cost influences to those in Australia (such as labour costs, subscribers, customers density, number of operators). This becomes less likely as the choice of comparator countries is narrowed on the basis of the cost methodology employed.

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