

**Submission to the Australian
Competition and Consumer
Commission**



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MTAS Pricing Principles Determination

1 July 2007 to 31 December 2008

PUBLIC VERSION

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1. Overview

The *MTAS Pricing Principles Determination 1 July 2007 to 31 December 2008 Report* (the draft pricing principles) shows that the Australian Competition and Consumer Commission (the Commission) does not have the sufficient evidence to make any final determination that mobile termination access service (MTAS) rates be reduced below 12 cents per minute (cpm) – to 9cpm or any other figure.

In these circumstances, Vodafone submits that the Commission should:

- maintain the MTAS rate at 12cpm until it has undertaken a robust and open TSLRIC+ modelling process that properly reflects the market realities of providing MTAS in Australia;
- make no retrospective adjustments to MTAS; and
- examine the operation of the Telstra fixed services price basket to ensure benefits of any MTAS reductions are fully and immediately passed through to end-users.

1.1. Modelling process

In this submission Vodafone considers the process by which the Commission has included an indicative price for MTAS of 9cpm in the draft pricing principles. We demonstrate that:

- the Commission recognises that it must produce a robust TSLIC+ model that properly reflects the market realities of providing MTAS in Australia before contemplating reductions in MTAS below 12cpm;
- the Australian Competition Tribunal (the Tribunal) explicitly considered the modelling requirements in Australia, and provided guidance that where cost modelling is undertaken in an attempt to determine an appropriate benchmark operator, that modelling must have regard to the market realities of operating a mobile network in Australia. The Commission must have regard to the guidance of the Tribunal yet has failed to do so in the draft pricing principles;
- the Commission does not have the data necessary to produce a robust cost model for the Australian market because it not does have the required operator-specific actual cost data which is essential to that process; and
- the Commission cannot rely upon publicly available data as a substitute for operator-specific actual cost data.

1.2. Modelling outputs

The deficiencies of the WIK model are revealed by comparing the results with evidence from other MTAS models, including those from Israel and South Korea which the Commission claims serve to validate the WIK results – a further examination shows that this is not the case.

1.3. Modelling faults

We then show that the WIK model contains some fundamental errors:

- the Tribunal provides guidance that the modelling of an efficient operator in the Australian market must have regard to the realities of that market and the actual evidence in relation to it;
- the WIK model is therefore deficient in that it only models the costs of a 2G-only operator, and no such operator could enter the Australian market;
- the Commission disregards lower market shares as upper bounds for efficient entrants, and rather run results at 25% and 31% market share. Again, this is not consistent with the Tribunal's guidance on cost modelling that is undertaken in an attempt to determine an appropriate benchmark operator;
- the WIK model contains fundamental structural errors in the treatment of routing factors which means that the unit costs of each service are understated. Correcting for this error increases unit costs in the model by 60%; and
- the WIK model fails to correct errors previously identified in Vodafone's initial submission on the WIK model made in March 2007. The failure to address such errors confirms that the model is unrealistic and wholly unreliable as a basis for determining pricing principles for MTAS on mobile networks in Australia.

1.4. Long term interests of end-users – pass through

In addition to producing a robust cost model, the Commission must have regard to the objective of Part XIC – which is to promote the long-term interests of end-users (LTIE)¹. We show:

- the Commission relies upon the reduction in F2M prices as being particularly important in the promotion of LTIE in this context;
- the Commission and Vodafone acknowledge that F2M prices have fallen as a result of the regulated reduction of MTAS, but also recognise that the degree of 'pass through' has been partial;
- the Commission claims that the degree of 'pass through' can be expected to increase as MTAS rates are reduced. We show that there is no evidence to support this claim. Vodafone holds that the degree of 'pass through' could increase if the Commission were to change the way in which Telstra's F2M call prices are regulated, and believes that the LTIE would be promoted significantly more than by reductions in MTAS;
- in the meantime, we show how MTAS reductions mean that Telstra can 'exceed' its fixed services retail price basket whilst still retaining most of the cost savings which it makes in its own fixed network. MTAS regulation therefore removes the need for Telstra to reduce its own network costs in order to meet the price cap and denies end-users these benefits; and
- in these circumstances the Commission must demonstrate that the LTIE is promoted even if current partial levels of pass through are maintained, since there is no evidence to suggest that these will increase.

¹ Vodafone notes that failure to do so may mean that in determining the pricing principles under section 152AQA, the Commission has failed to take into account a relevant consideration in its decision-making

1.5. Long term interests of end-users – waterbed

If the Commission is to rely upon partial pass through promoting LTIE, then it must show that the regulation of MTAS has no impact on other prices, and that there is no detrimental effect on long-term competition in telecommunications markets. The Commission makes no serious attempt to do this. We show:

- the Commission incorrectly claims that ‘the waterbed’ does not operate in Australia. The Commission claims that the fact that Australian mobile call charge and access prices are falling refutes the waterbed. The Commission also states that the Tribunal supports its view. Vodafone does not deny that Australian mobile access and call prices have fallen while MTAS rates have fallen. However, we reject the Commission’s conclusion that the waterbed does not operate in Australia and show that the Commission has misunderstood the Tribunal’s position;
- we present robust empirical evidence to show that the Commission must assume at least a 50% waterbed;
- we then model the LTIE using both a Vodafone model and the model employed by the New Zealand regulator to assess termination rate setting in New Zealand. We find that if we ignore any adverse impact on LTIE arising from the operation of the Telstra fixed service price cap then the LTIE gain is at best \$18 million. More plausible assumptions suggest that the draft pricing principles will undermine the LTIE to the value of more than \$100 million; and
- there is no evidence to suggest that a further reduction in MTAS will promote competition in the Australian market in the longer term. On the contrary, we show that the position of the integrated fixed-mobile operators will be further strengthened relative to mobile-only competitors.

1.6. Network externalities

Finally, our comments above have considered the impact of the Commission’s proposals on LTIE, assuming that those proposals had no impact upon the number of Australian mobile and fixed telephone users despite it changing the prices that they paid for the services that they consume. As such, the arguments presented in the previous section are not dependent upon the Commission’s approach to a network externality surcharge (NES). Vodafone notes the Tribunal’s comments that the existence of network externalities is an empirical question. Market research undertaken for Vodafone demonstrates:

- 44% of Australian mobile subscribers are unwilling to pay more than \$110 for a replacement handset;
- 61% are unwilling to pay more than \$150; and
- this demonstrates that there are clear welfare benefits from the introduction of a NES in Australia, and large risks of not doing so.

2. The modelling process and modelling requirements

In proposing to determine pricing principles that will include a reduction in the indicative price of MTAS from 12cpm to 9cpm, the Commission is disregarding its commitment to do so only after robust modelling demonstrated that the cost of providing MTAS in Australia was less than 12cpm².

Vodafone shows in this section that the WIK model does not accord with the reality of the Australian mobile market, and that the modelling process run by the Commission has meant that this cannot be the case.

We also show that the WIK model does not follow accepted methodology for developing a TSLRIC+ regulatory model. This is further explored in Section 3 and in the Analysys Report at Annex A – where the WIK model is considered in more detail.

In this Section we show:

- the Commission recognises that it must produce a robust TSLRIC+ model before contemplating reductions in MTAS below 12cpm;
- the Tribunal has explicitly considered the modelling requirements in Australia and stated repeatedly that modelling must have regard to the market realities of operating a mobile network in Australia. The Commission must follow the guidance of the Tribunal³ yet has failed to do so in the draft pricing principles;
- the Commission does not have the data necessary to produce a robust cost model for the Australian market because it does not have the required operator-specific actual cost data which is essential to undertake that process successfully; and
- the Commission cannot rely upon publicly available data as a substitute for operator-specific actual cost data.

2.1. WIK model does not estimate the forward looking efficient cost of MTAS in Australia

The Commission has consistently stated that it would not reduce the regulated termination rate below 12cpm in the absence of a TSLRIC+ model of providing termination services in Australia demonstrating that efficient costs fall below 12cpm:

Over the longer term, however, the Commission wishes to stress that before it would reduce the price of MTAS below the upper end of the range of best estimates available to it [5-12 cpm] of the TSLRIC+ of providing the MTAS, the Commission would develop a more detailed estimate... This could be via developing a model to specifically model the TSLRIC+ of providing MTAS in Australia or via a detailed international benchmarking exercise.⁴

² We refer to the *Draft MTAS Pricing Principles Determination 1 July 2007 to 31 December 2008*, published by the Commission in June 2007, throughout this submission as the 'draft pricing principles'.

³ As the ultimate outcome of access arbitrations (in which the pricing principles must be taken into account in making a final determination) and access undertakings is the same – which is to set the terms and conditions of access to a declared service.

⁴ *Mobile Services Review: Mobile Terminating Access Service, June 2004*, p.211.

Vodafone notes that the Commission has not attempted a detailed international benchmarking exercise and so must rely wholly on the WIK model to meet the commitment made⁵. However, the WIK model does not estimate the cost of providing MTAS in Australia.

One reason for the model's deficiencies is that many of the criticisms raised by Vodafone's initial submission on the WIK model from March 2007 have not been addressed by the Commission in the draft pricing principles. We revisit these points in this submission.

We have also asked Analysys, a well known consulting firm with experience of over 20 such modelling exercises around the world, to undertake a thorough review of the WIK model.⁶ Their findings appear at Annex A. Analysys identify at least one fundamental flaw in the model and numerous other errors.

Therefore, Vodafone reiterates that it is inappropriate for the Commission to use the outputs of the WIK model as evidence that the forward looking efficient cost of providing MTAS in Australia is below 12cpm. The use of such outputs in determining pricing principles is not in the LTIE and therefore is inconsistent with the object of Part XIC.

2.1.1. The Commission has not followed the Tribunal's guidance in its modelling

The Tribunal has delivered two recent decisions addressing the estimation of the cost of providing MTAS in the context of reviewing Commission decisions relating to ordinary access undertakings. In the draft pricing principles the Commission has failed to have regard to the Tribunal's guidance. This is despite the Commission's claim that:

The Commission's view about these methodological and empirical issues has been affirmed on multiple occasions by other judicial bodies⁷.

The Tribunal has rejected several methodological and empirical points on which the Commission attempts to rely in the draft pricing principles and that also underpin the WIK model. These include:

- the Commission's refusal to calibrate the WIK model outputs against real world operator data (addressed in this section);
- the approach to determining the market share of a benchmark efficient operator (addressed in Section 3); and
- the refusal to recognise that efficient entry as a stand alone 2G operator is no more possible in Australia than in any other market today (addressed in Section 3).

The Tribunal stated in the decision on the Vodafone case that the determination of a appropriate benchmark operator to assist in the assessment of the forward looking cost of providing MTAS requires that regard be had to the market realities of operating a network in

⁵ The Commission's reliance upon Israel and Korea and dismissal of the UK and Netherlands for international benchmarking purposes is considered later in this section.

⁶ We note that WIK appear to have built a single mobile cost model in Paraguay prior to their engagement by the Commission.

⁷ Draft pricing principles, p.6.

Australia, rather than relying upon a theoretical modelling exercise⁸. These market realities include consideration of evidence as to the actual costs incurred in Australia and the challenges which even the most efficient firm would face⁹. A more detailed discussion of the implications of the Vodafone decision is contained in Vodafone's initial submission.

We note that the Tribunal's decision in the Optus case also provides guidance in the on matters such as waterbed and network externality surcharge (NES). These are referred to in section 5.

2.1.2. The Commission has not sought and does not have the data necessary to produce a robust cost model,

The Commission states that operators have failed to provide operator-specific cost data, and that in the absence of such data, the assumptions made in the WIK model are reasonable¹⁰.

Vodafone rejects both aspects of this claim. We do not accept that the absence of operator-specific data implies the WIK model inputs are reasonable. Nor do we accept that operators have declined to provide operator-specific data.

On the contrary, the Commission has repeatedly rejected Vodafone's offer to provide Vodafone-specific information during the development phase of the WIK model¹¹. This accompanied our repeated requests that WIK be required to undertake a 'real world' calibration of the model.

The Commission replied by saying that there would be an opportunity after the development of the cost model for operators to provide inputs to the Commission. The Commission provided four weeks for operators to access the cost model, analyse the model, collect relevant data, and submit responses. Vodafone provided confidential operator-specific data to the Commission in its initial submission (see Table 1).

⁸ Australian Competition Tribunal, *Application by Vodafone* [2007] ACompT1, para 83 (discussing efficient market shares).

⁹ *Ibid.* para 116-8 (discussing need to produce actual data).

¹⁰ For example, it is noted that 'interested parties have largely remained silent on the reasonableness of equipment prices used' and that in the absence of such data, the Commission 'considers the price of equipment used in the WIK Model is reasonable'. Draft pricing principles, p.82.

¹¹ Vodafone raised the need for the WIK model to be calibrated against specific Australian network information in a letter to the Commission in early September 2006. In October 2006, Vodafone repeated the offer to provide data and provided a confidentiality agreement to the Commission so as to facilitate the provision of commercial-in-confidence material which Vodafone felt was vital in the development of an appropriate cost model to WIK. The Commission rejected Vodafone's offer of entering into a confidentiality agreement during the development of the WIK cost model.

Table 1 Asset prices in initial submission

<i>Cost category</i>	<i>Data submitted</i>	<i>Page reference in Vodafone initial submission¹²</i>
Macrocell site acquisition and lease preparation	[cic]	[cic]
Omni-sector macrocell equipment	[cic]	[cic]
Tri-sector microcell equipment	[cic]	[cic]
MSC and BSC software	[cic]	[cic]
HLR software	[cic]	[cic]
Voicemail server	[cic]	[cic]
STP	[cic]	[cic]

The draft pricing principle acknowledges the receipt of the information submitted by Vodafone in the initial submission¹³. However, it does not say if, and how, this data was used. The outputs in the WIK model indicate that the Commission did not have regard to the highly relevant operator-specific data Vodafone made available to the Commission as part of the Commission's process of estimating the cost of providing MTAS.

In June 2007 Vodafone offered to supply further information regarding our costs, and asked the Commission to list the data requiring confirmation. As yet we have not received a response.

2.1.3. 'Publicly available' information is no substitute for actual data

The Commission has stated that the WIK model can be populated using 'publicly available data'. In practice, this often means data recycled from modelling exercises undertaken by consultants in other jurisdictions at other points in time.

Actual cost data is highly confidential and, as such, is not publicly available. The recent report from Ofcom contains a large number of confidential Annexes in which operator-specific confidential cost data is presented. OPTA has also required operators to submit confidential data. Analysys show in Annex A that it is standard practice by regulators charged with the responsibility of determining prices for access to telecommunications services to seek and obtain operator-specific confidential cost data when undertaking cost modelling exercises.

Vodafone has already indicated its willingness to enter into appropriate non-disclosure agreements with WIK-Consult, to facilitate calibration of the WIK model, which the Commission has rejected.

The lack of realism in the results of the WIK model arises directly from the Commission's approach to the modelling process. Even before we engage in a detailed consideration of the model itself, the deficiencies of the WIK model are easily revealed by comparing the results of the WIK model with the outputs from other models, including those from Israel and South Korea which the Commission claims serve to validate the WIK results – a further examination of which shows this not to be the case.

¹² Vodafone Australia, *Submission to ACCC, WIK Mobile Network and Cost Model*, March 2007.

¹³ Draft pricing principles, p.89.

2.2. The international benchmarking data confirms that the WIK results are too low and that the model outputs are unreliable and counter-intuitive

As part of its decision on the Optus MTAS ordinary access undertaking in 2006, the Tribunal concluded that international benchmarking is of limited use in assessing the reasonableness of costs submitted in an undertaking since:

... it would be necessary to know much more about the regulatory environment within which they were determined, the state of the relevant markets and the socio-economic environment in which the mobile services were operative¹⁴

Vodafone notes that the Commission has not provided any information regarding the suitability of the results in section 5.2.1 of the draft pricing principles. In this discussion, the Commission appears to be under the impression that models calibrated using top-down accounting data are in some way inferior to the bottom-up engineering models of the type developed by WIK. Vodafone believes that this impression is a mistake, and we remain of the view that without calibration against actual costs, the WIK model remains a theoretical construct.

Indeed, the Commission has previously acknowledged the importance of calibration with actual cost data – noting that the reconciliation of a bottom-up model with a top-down model ‘is likely to further strengthen the credibility of the model results’¹⁵.

The theoretical approach and lack of market reality in the WIK model is the reason why Western European regulators have *not* adopted a purely bottom-up approach. As a result, the Commission is forced to choose Israel and South Korea as ‘best practice’ benchmarks and to ignore the European models. This introduces selective bias into the benchmarking which invalidates any claims that the WIK outputs are in any sense ‘realistic’.

Aside from relying on a bottom-up approach, there are many other reasons why mobile costs in Israel and South Korea are low. These reasons are not relevant to the provision of MTAS in Australia. It is in fact far more likely that mobile costs in Australia will be equal or above those in Western Europe, and *significantly above* those in Israel and South Korea.

Table 2 lists some of the relevant comparative metrics.

¹⁴ Australian Competition Tribunal, *Application by Optus*, [2006] ACompT 8, November 2006, para 297.

¹⁵ Australian Competition and Consumer Commission, *Assessment of Vodafone's Mobile Terminating Access Service (MTAS) Undertaking – Final Decision*, p.29.

Table 2 Comparative metrics

	Australia	Israel	South Korea	UK	Netherlands
Minutes per sub per month	139	333	222	164	111
Pop per km ²	2.7	316.1	499.5	251.6	489.1
NRA cost model estimates (excluding externality & 3G spectrum in UK)	5.2-5.5c	5.5c	4.5c	8.9c	8.6c*

Source: Wireless-Intelligence (Q1 2007) & CIA World FactBook (note that OPTA cost model outputs shown here were not the basis for subsequent regulated rate decisions – where rates were set at levels significantly above the cost outputs).*

Considering this data in more detail:

- The Commission is already aware of the importance of traffic density levels in a mobile cost model. A measure of traffic density is minutes of use per subscriber. Wireless-Intelligence reports minutes of use per subscriber for Israel and South Korea to be respectively 333 and 222 minutes per subscriber per month (defined as outgoing plus incoming, with on-net calls counted as one minute). Wireless-Intelligence does not report results for Australia, but based on available figures we estimate average minutes per use in the Australian market, under the same definition, to be 139 minutes per subscriber per month (using the Commission's estimate of 38,577 million mobile minutes per annum counting both ends of on-net, reducing to 34,660 by eliminating double counting of on-net, dividing through by 20.783 million subscribers and expressing as a monthly average). This is almost 60% of the level in South Korea and 40% of the level in Israel, but comparable to levels in the UK and Netherlands. This suggests that Australian costs are higher than the Commission's benchmarks.
- Higher traffic levels in Israel and South Korea will also be accompanied by a more even traffic profile – since there is a limit to how much one person can use a mobile in the peak period. This drives further cost differences between Australia and the Commission's comparators. Here the Commission may be tempted to suggest that traffic is under the control of the operators, and so Australian operators should be able to achieve traffic levels similar to those in Israel and South Korea. But this is not what the WIK model assumes. The WIK model uses actual Australian traffic levels, yet still produces costs similar to those in Israel and South Korea.
- The data also shows the very high levels of population density in both Israel and South Korea – which are comparable to UK and Netherlands respectively. At these levels of population density one would expect a high proportion of the costs to be capacity related rather than coverage related. Australia, however, is fundamentally different with significant areas, and even regions, dimensioned purely for coverage purposes. We would therefore expect costs in Israel and South Korea – and the UK and Netherlands – to be significantly lower than in Australia.

The fact that the WIK model estimates similar costs levels to those in Israel and South Korea, despite far more onerous coverage and lower traffic volumes, should cast immediate doubt on the credibility of the WIK model and further, whether any reliance on such outputs could be said to be consistent with the LTIE.

3. The WIK model

Vodafone contends that the WIK model is fundamentally unfit for purpose. Our ability to fully verify the model is constrained by the lack of access to the source code of the model. The Commission has maintained that access to the source code is unnecessary, but fails to give adequate reasons for non-disclosure. We therefore reiterate our concern with the development of price setting regulation that is based on a non-open-source model.

Regardless of the lack of full verification of the model, it is clear that it fails to produce efficient MTAS prices. In this section we show:

- the Tribunal provides guidance that the modelling of an efficient operator in the Australian market must have regard to the realities of that market and the actual evidence in relation to it;
- the WIK model is therefore deficient in modelling the costs of a 2G-only operator, since no such operator has or could enter the Australian market and compete against operators with converged 2G/3G networks;
- the Commission disregards lower market shares as the upper bounds for efficient entrants, and rather runs results at 25% and 31% market share. Again, this is not consistent with the Tribunal's guidance;
- the WIK model contains fundamental structural errors in the treatment of routing factors which means that the unit costs of each service are understated. Correcting for this error increases unit costs in the model by 60%; and
- the WIK model fails to correct errors already identified by Vodafone in the initial submission. The failure to address such errors means that the model remains unrealistic and unreliable as a basis for setting pricing principles.

More detailed comments provided by Analysys regarding the WIK model are in Annex A.

3.1. The WIK model is wrong to model the costs of a 2G-only operator, since no such operator could enter the Australian mobile markets today

The draft pricing principle states that the MTAS price should be set on the basis of the most cost efficient delivery technology for voice services¹⁶. The Commission assumes that this is 2G technology and believes that the cost of providing MTAS should not be impacted by the network over which it is delivered.

Vodafone contends that this view is incorrect because:

- mobile operators must offer a portfolio of voice and data services in order to compete for and retain customers. This is the case even if customers do not in fact subsequently consume these services in large quantities. Data services are particularly important in the acquisition and retention of higher value customers which are critical to sustainable commercial activities in the mobile market. It is therefore the efficient provision of this portfolio of services that determines the choice of efficient technology;

¹⁶ Draft pricing principles, p.9

- This explains why no Australian network operator is pursuing 2G only, and nor is any market leading MNO in any major OECD market embarking on a 2G only strategy so far as Vodafone is aware. Even the small number of MNOs without 3G licences (e.g. TeliaSonera in Sweden) have secured network sharing agreements in order to gain the 3G network capability needed to compete effectively;
- Vodafone's marketing plans anticipate that the ability to access 3G services will be critical to acquiring and retaining the most profitable mobile customers in future, even if the revenue generated from 3G services themselves is modest, and such services are provided on a stand alone basis 'at a loss'. Customers for whom access to 3G services is not critical – and who might subscribe to a 2G only provider – are unlikely to generate insufficient revenue to sustain a viable stand alone mobile business; and
- Vodafone Australia today has greater 3G device penetration amongst its customer base than operators in the Dutch market (where OPTA took 3G costs into account) and very similar levels of 3G device penetration to the UK (where Ofcom also explicitly modelled 3G)¹⁷. Vodafone forecasts non-messaging data revenue growth – for which 3G is required – will exceed 100% per annum in Australia in the next three year period.

Vodafone submits that a 2G/3G network cost base is the only one that can be considered for regulatory purposes when setting MTAS prices on Australian mobile networks during the term of the draft pricing principles. The Commission has provided no evidence as to why Australia is different, or why the Australian operators are mistaken in building 3G networks, and operating converged 2G/3G networks today. A model based upon market realities is a 2G/3G model will model an operator with a converged 2G/3G network.

The Commission's assumption that the costs of 2G and 3G are the same, and/or that one is necessarily greater than the other for carrying voice traffic, is misplaced. This is an empirical matter. As we show below, it is quite possible that 3G costs are higher in the short term, and lower in the long term, and the costs of migration between technologies in a combined network (e.g. necessary spare capacity on both networks during dual running) imposes additional costs that must be borne by the industry in any efficient migration between technologies.

3.1.1. Other regulators recognise that efficient benchmarks require modelling of 2G and 3G networks over time

This issue of what network – that is, a 2G network, a 3G network, or a converged 2G/3G network – should be modelled was considered at length by Ofcom, initially in its September 2006 Consultative document. Here Ofcom initially considered a 2G only approach to modelling and concluded:¹⁸

9.21 In considering this approach [2G only], however, it is important to recognise the potential impact on investment incentives if MNOs are unable to recover their efficiently-incurred costs, for example if the cost of supplying 3G termination is above the cost of 2G. In addition Ofcom is mindful of the concern raised by Vodafone and T-Mobile in their responses to the March 2006 Consultation, that a decision to set charges for 2G and 3G termination simply on the costs of present 2G costs, may

¹⁷ Ofcom, *Mobile Call Termination Statement*, 27 March 2007, [[9.35] – [9.56].

¹⁸ Ofcom, 'Mobile Call Termination, Proposals for Consultation', 13 September 2006 at http://www.ofcom.org.uk/consult/condocs/mobile_call_term/new_mobile.pdf

present a risk that MNOs will under-recover costs in a phase in which they are running two networks in parallel.

Ofcom also concluded that reliance on 2G costs only would have detrimental effects on incentives for efficient investment, with consequential losses in consumer welfare¹⁹.

Ofcom produced three models: 2G only, 3G only and 2G/3G, but the final statement in March 2007 reported results only from the 3G only model (for H3G) and the 2G/3G model (for the other four UK operators). However, the September 2006 Consultative Document reported comparative results from all models, excluding 3G license fees, in Figure 1 shows the relative magnitudes of the cost estimates by technology, excluding license fees.

Figure 1 Ofcom estimates of relative voice termination costs by technology

<u>2008/9 to 2011/12</u>	
Highest cost:	2G voice termination on 2G/3G network Blended 2G/3G voice termination on 2G/3G network
Lowest cost:	2G voice termination on 2G network 3G voice termination on 2G/3G network 3G voice termination on 3G network
<u>2012/13 onwards</u>	
Highest cost:	2G voice termination on 2G/3G network 2G voice termination on 2G network Blended 2G/3G voice termination on 2G/3G network
Lowest cost:	3G voice termination on 2G/3G network 3G voice termination on 3G network

Source: Ofcom, "Mobile Call Termination: Proposals from Consultation", September 2006, Figure A13.10

The conclusions of the Ofcom model are that, up until 2011/12, while voice termination costs on a 3G network are below those on a 2G network, a combined 2G/3G network is more costly than both. In particular, blended 2G/3G voice termination on a 2G/3G network is more costly than either a 2G only or a 3G only network. Beyond 2011/12 the position changes, and the combined 2G/3G network becomes lower cost than a 2G only network, thus justifying the MNOs decision to migrate to 3G technology for the longer term cost saving – as well as ability to provide new services.

This does not mean that the 2G/3G network should be treated as 'inefficient'. It is the only technological choice available for a 2G operator that wishes to achieve the long term benefits, in terms of both cost base and service capability, of a 3G network.

If the costs of developing and operating a converged 2G/3G network are not recognised in Australia this would not be in the LTIE – and in particular would not promote the objectives of encouraging the economically effective use of, and the economically efficient investment in the infrastructure by which listed services are supplied, and any other infrastructure by which listed

¹⁹ Ibid para 9.76. In doing so, they also accepted the 'waterbed effect' which we address later in section 4.

services are, or are likely to become, capable of being supplied. Further, if such costs are not taken into account, this would result in insufficient regard being had to the legitimate commercial interests of mobile network operators.

3.1.2. It is also critical that the Commission recognises that 'efficiency' is a concept that applies over the lifetime of the investment, and that incentives today determine investment in the future

The Commission makes specific reference to efficient investment in the draft pricing principles²⁰. Figure 1 from Ofcom illustrates the 'heads you win, tails I lose' that would result from setting a termination rate on the basis of a 2G only model in the period up to, say 2011/12, and a 3G model after that date – as the Commission's approach would suggest. In these circumstances the actual cost incurred by 2G/3G operators – which is still the efficient cost given the need for transition between network technologies – would never be recovered.

3.1.3. The Commission's attempts to dismiss Ofcom's results as exceptional are misplaced

The Commission's claim that Ofcom's inclusion of 3G technology in its cost model was for market specific reasons is wrong²¹. It is true that 3G spectrum costs in the UK were significantly higher than in most other countries. However, this was not the reason that Ofcom included 3G technology in the cost model. As shown above, Ofcom's concern was that the migration from 2G to 3G technology had important implications for the cost of an efficient operator. These concerns should also be at the forefront of the Commission's mind given the current state of the market in Australia.

The Commission appears to place reliance on the letter from the EC (European Commission) to Ofcom to support the view of Ofcom as a maverick regulator in respect of its decision to model a 2G/3G network.²² This is a misleading interpretation of the EC's letter, which focused solely on the valuation of the 3G spectrum fee and said nothing about the modelling of 3G costs generally. The EC in no way criticises Ofcom's decision to model a 2G/3G network and Ofcom rightly proceeded on this basis²³.

3.2. Appropriate market share benchmark

The decision of the Commission to run results at 25% and 31% market share in the WIK cost model, and to ignore lower market shares as being the upper bound for efficient entrants in the Australian market is flawed. Again, this approach is not consistent with the guidance provided by the Tribunal.

²⁰ Draft pricing principles, p.8

²¹ Draft pricing principles, p 10.

²² European Commission, 'Commission asks UK regulator not to use Inflated 3A Auction Costs in Termination Rates for Mobile Operators', 27 November 2006 at <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1628&format=HTML&aged=0&language=EN&guiLanguage=en>

²³ OPTA also recognised the importance of modelling the transition between 2G and 3G technologies. However, since OPTA focused on a 2G cost base, this was handled by explicitly including in the traffic volumes of the model a de-commissioning of the 2G network. See 'Response to Industry Group on LRIC model conceptual design, Report to OPTA', Analysys, 31 March 2006.

In modelling realistic outcomes, the Tribunal provided guidance on the question of the market share achievable by an efficient entrant. The WIK model considers two possible scenarios, one with 25% market share and another with 31% market share. The Commission notes that:

The 25 per cent market share scenario is based on the assumption that it is theoretically possible for all four MNOs to achieve similar market shares in a competitive market.²⁴

The appropriateness of the 25% benchmark was directly addressed by the Tribunal in the Vodafone decision. The Tribunal said that no convincing case had been made that a 25% market share was 'achievable'²⁵.

Vodafone submits that Vodafone's current market share of 17% serves as an efficient benchmark in light of the Tribunal's guidance. This reflects the market reality that after more than 10 years in the market, the third mobile player – offering innovative and competitively priced services in the Australian market and with access to the resources of an international group – retains a market share of around 17%. Hutchinson, the other non-integrated firm, has failed to attain market share in excess of 10%.

Later in this submission Vodafone explains why the current regulatory framework in Australia – in combination with the prevailing market structure in which the two leaders in the mobile market are also integrated fixed-mobile players – serves to constrain the development of efficient mobile-only firms.

The Commission has made no proposals to change the regulatory framework and must therefore model the prospects of efficient entrants in light of it. The evidence to date shows that the prospects for these entrants are significantly constrained as a result – and lower than in other international markets. Only if the Commission changes the regulatory framework so as to remove these competitive barriers would the Commission be entitled to consider whether an efficient market share target in excess of that achieved by Vodafone to date may represent an appropriate 'benchmark operator' share.

3.3. The WIK model has a fundamental flaw in the treatment of routing factors which understates unit costs by approximately 60%

This issue is of fundamental significance and is addressed in detail by Analysys in their report at Annex A. Vodafone contends that it must cast doubt on the overall credibility of the model – not all aspects of which we have been able to verify in the absence of an open source version.

As Analysys explain²⁶, the WIK model is very unusual in treating Busy Hour Demand as an exogenous input in the model. In other models the routing factors constitute an exogenous input which then drives both Busy Hour Demand and the unit costs of each network asset (i.e. Busy Hour demand/asset utilisation).

As a result of this unconventional approach, it appears that the model as presently constructed incorrectly converts Busy Hour demand (which in the WIK case implicitly embodies the use of routing factors to determine utilisation) into unit costs (which require a further consideration of routing factors). The WIK documentation is not sufficiently clear to be sure exactly what occurs,

²⁴ Draft pricing principles pp.39 and 42.

²⁵ Op cit., *Application by Vodafone*, para 80.

²⁶ Analysys, Annex A, pp.23-5.

but after extensive testing it appears to Vodafone and Analysys that routing factors in the WIK model are effectively applied 'multiplicatively' since they are effectively included in the traffic data input into the model. In other words, routing factors are compounded in the computations so that for example, that on-net calls with a routing factor 2 are in fact accorded a routing factor of 4 in the WIK model. The result of this fundamental error is that traffic volumes for on-net minutes are effectively double-counted.

Extensive checks by Analysys and Vodafone confirm that this represents a very serious structural problem in the model which, if corrected, would increase the unit costs of all services, including MTAS, by approximately 60%.

3.4. The WIK model fails to correct errors already identified by Vodafone in the initial submission, all of which serve to make the model unrealistic and unreliable as a basis for setting pricing principles

In Vodafone's initial submission we raised the following key errors in the WIK model:

- traffic distribution error;
- WACC
- site sharing assumption;
- asset prices;
- routing errors;
- failure to include voicemail capability;
- failure to include signalling transfer points;
- failure to account for network resilience; and
- OPEX and common cost mark-up.

Vodafone notes that the Commission has addressed the traffic distribution, WACC and HLR routing errors in the draft pricing principles. The other errors, however, remain unaddressed²⁷.

Vodafone raised the lack of traffic profiling in the WIK model. The Commission has replied that the approach taken in the WIK cost model is reasonable because the over-estimation for urban areas is cancelled out by the under-estimation in rural areas²⁸. The Commission has provided no evidence to support this claim. The review of the WIK model by Analysys confirms the two main flaws in WIK's methodology, namely that the average subscriber generates constant amount of traffic regardless of location; and that subscribers of an operator are evenly distributed throughout its coverage. Neither of these is true in the real world. Adjusting for these errors would result in a more uneven distribution of traffic and consequently a higher numbers

²⁷ Vodafone also notes the Commission's response regarding network resilience. The Commission claims that a proxy for equipment quality is asset price – ie. the more expensive, the better quality. Vodafone highlights that the WIK cost model under-estimates the actual cost of assets. If the Commission's assertion were correct, this implies that the WIK model uses assets of lower quality than deployed in reality. Vodafone reiterates our comments that the quality of assets is largely irrelevant for network resilience, as no network would tolerate a single point of failure.

²⁸ Draft pricing principles p.126.

of TRXs (and possibly BTS and BSCs). Analysys notes that this could have been avoided if the WIK cost model had been calibrated against real world networks²⁹.

3.4.1. Asset Prices

Vodafone provided actual prices in our initial submission and we are now able to provide a greater range of actual replacement costs for the assets listed in the WIK model. The cost data included in the table below comes from the latest standard price estimate received by Vodafone Australia from the relevant vendors.

Table 3 Asset Prices

<i>Asset type</i>	<i>WIK model</i>	<i>Vodafone actual</i>
	<i>Capex</i> <i>A\$</i>	<i>Capex</i> <i>A\$</i>
Macrocell: site acquisition and preparation and lease	134,000	[cic]
Macrocell: equipment (omni sector)	98,000	[cic]
Macrocell: equipment (2 sector)	110,000	[cic]
Macrocell: equipment (3 sector)	121,000	[cic]
Microcell: site acquisition and preparation and lease	86,000	[cic]
Microcell: equipment	61,000	[cic]
Picocell: site acquisition and preparation and lease	69,000	[cic]
Picocell: equipment	46,000	[cic]
Macrocell: additional TRXs	8,000	[cic]
BSC: base unit	2,903,000	[cic]
BSC: Software (full-rate AMR)	725,000	[cic]
MSC: processor	3,166,000	[cic]
MSC: software	922,000	[cic]
MSC: buildings (building preparation)	2,052,000	[cic]
MSC: BSC-facing port increment	3,000	[cic]
MSC: interconnect-facing port increment	3,000	[cic]
MSC: switch-facing port increment	3,000	[cic]
HLR	2,721,000	[cic]
SMSC	1,821,000	[cic]
Remote switching sites (BSC and RNC)	150,000	[cic]

We highlight in bold the three key assets where the Commission underestimates the actual cost. As indicated in our initial submission, software prices for both BSC and MSC are substantially greater than the price assumed in the model. Adaptive multi-rate (AMR) software for each BSC costs around [cic]. Software for each MSC costs around [cic] for the services provided by the MSC. In addition, remote switching sites cost significantly more than the WIK model assumes.

²⁹ Analysys, Annex A, p.21.

3.4.2. RAN design

In addition to significantly underestimating the cost of network assets, Vodafone notes that the actual number and type of BTS deployed differ from that assumed in the WIK cost model (Table 4). Vodafone notes that these issues are also raised by Optus in its initial submission.

The WIK cost model seems to assume that coverage can be achieved in urban areas with a deployment of microcells and that picocells are used to increase capacity. This is not the case. Coverage is provided first by a macrocell layer, with additional microcell layers added for capacity. This error in the WIK model has significant effect on the cost of MTAS since picocells (which the model overestimates) are significantly cheaper than micro and macrocells (which the WIK model underestimates).

Table 4 RAN Assets

	<i>WIK model (17% operator)</i>	<i>Vodafone</i>
Macrocell sites	1717	[cic]
Microcell sites	543	[cic]
Picocell sites	316	[cic]
Total sites	2576	[cic]

As a result, the total cost of BTS sites in the WIK model is [cic]. Reflecting the BTS sites in Table 4, this cost increases to [cic].

Further, if the actual market prices are used (Table 3), the cost of BTS sites increases from [cic].

4. The long term interests of end-users

Vodafone understands that all parties accept that the regulation of MTAS must contribute to the object of Part XIC and promote the long term interests of end-users (LTIE). The question is therefore whether the Commission has presented evidence to demonstrate that this is indeed what has occurred in the past – and that it might reasonably be expected to occur in the future. Without any benefit to LTIE, we believe that further decreases to MTAS rates cannot proceed.

Despite the Commission's assertions, the answer to this question is complex. This section addresses the treatment of two key issues:

- pass through – which determines the impact on fixed-to-mobile (F2M) prices (and other fixed services prices) paid by end-users; and
- the waterbed – which determines the impact on other mobile prices.

These issues must be addressed even if we were to accept the Commission's assertion that there are no marginal mobile subscribers in Australia and that there is therefore no need to consider the NES. We consider the evidence for an NES in Section 5.

The Commission is almost alone amongst regulators in developed markets who have recently proposed MTAS reductions and not attempted any quantification of the relative costs and benefits for end-users which might be expected to result from their actions. We do so here.

4.1. The pass through argument

- All parties agree that a regulated reduction in MTAS does not promote LTIE unless we can demonstrate that there are consequential changes in the retail prices paid by end-users for telecommunications services³⁰;
- The Commission relies upon the reduction in F2M prices as being particularly important in the promotion of LTIE in this context³¹;
- The Commission and Vodafone agree that F2M prices have fallen as a result of the regulated reduction of MTAS, but both also agree that the degree of 'pass through' has been partial;
- The Commission contend that the degree of 'pass through' can be expected to increase as MTAS rates are reduced. Vodafone contends that there is no evidence to support this claim and that the timing of price movements ensures that no 'pass through' at all is likely to occur for significant periods;
- Vodafone accepts that the degree of 'pass through' could increase if the way in which Telstra's fixed call prices are regulated were to change. Specifically, this would ensure that end-users actually benefit from any non-MTAS efficiency gains which Telstra makes in its own network, much of which Telstra appears to retain at present; and

³⁰ The Commission makes vague references to 'improved competition and encouragement of efficiency in investment' (draft pricing principles, p.8), but there appears to be broad agreement that these must translate into lower prices or higher quality. The Commission's central case is clearly that the LTIE is lower prices.

³¹ see draft pricing principles, p.23 'The Commission considers that retail (F2M) price reductions are important...'

- Vodafone contends that in these circumstances the Commission must demonstrate that the LTIE is promoted even if current partial levels of pass through are maintained, since there is no evidence to suggest that they will increase.

4.1.1. The Commission and Vodafone agree that F2M prices have fallen as a result of the regulated reduction of MTAS, but both also agree that the degree of 'pass through' has been partial

It is common ground between Vodafone and the Commission that 'there is still opportunity for integrated operators such as Telstra and Optus to reduce retail F2M prices further ... in line with reductions in MTAS'³².

Vodafone agrees with the Commission that F2M prices have fallen by more than 12% over the first two years of the previous pricing principles – the data from the Market Indicator Report 2005-6 suggests 14% overall. However, the benefits for end-users have varied significantly: F2M prices fell by 10.9% for residential end-users but actually increased by 7% for small business customers.

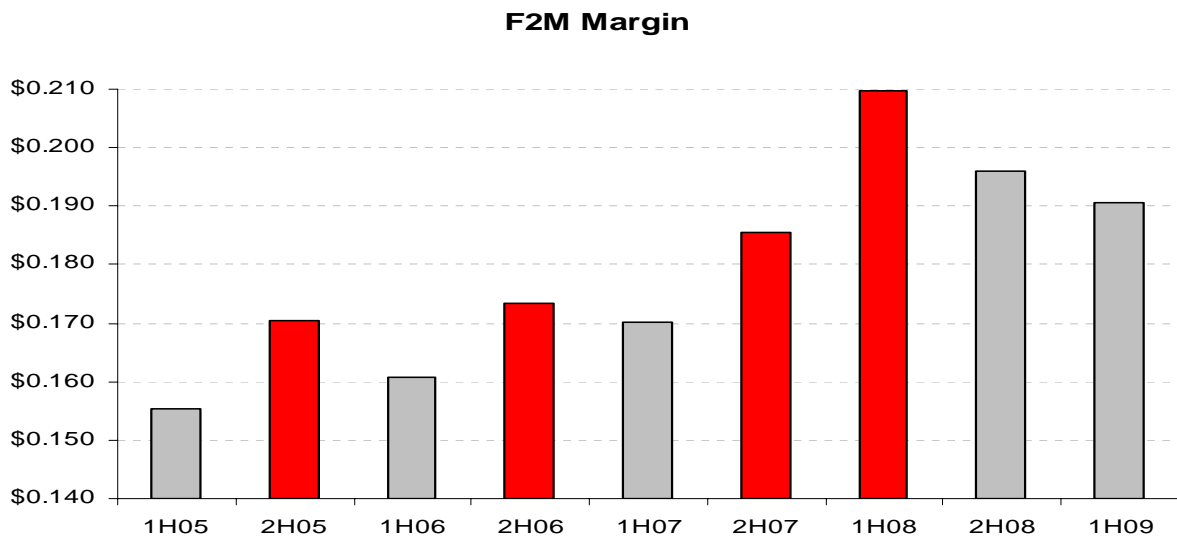
Overall, MTAS fell by 42% under the last pricing principles, suggesting that around one third of the reductions were passed through to end-users. Clearly some end-users have benefited more than others.

4.1.2. The Commission contends that the degree of 'pass through' can be expected to increase as MTAS rates are reduced. Vodafone contends that there is no evidence to support this claim.

As Graph 1 shows, the absolute margin retained by Telstra from F2M calls during the period of the pricing principles to date has been expanding instead of contracting. The Commission claims that pass through will increase (i.e. F2M margins will contract) as MTAS are lowered. The evidence shows otherwise.

³² *ibid.*

Graph 1 F2M Margin



Source: Telstra half year & full year financial reports; Vodafone analysis.

Although the absolute margin does reduce slightly over each regulated period, it has always remained at a level above that of the previous regulated period. In other words, each regulated MTAS price reduction has so far served to increase rather than reduce Telstra's F2M margin. Over the period July 2004 to June 2007, Vodafone estimates that Telstra has retained \$372m in 'additional' F2M margin relative to margin it would have earned if margins had remained stable (at 42.5%) over the same period.

The ability on the part of Telstra to maintain and expand F2M margins is consistent with Vodafone's previous submissions which demonstrated that competition in the F2M market has been unaffected by the regulation of MTAS and that the market shares of Telstra's principal competitors remain unmoved or, in the case of Primus and AAPT, actually reduced during the period³³.

The Commission may hope that competition in the F2M market will increase as a result of further reductions in MTAS, but the evidence submitted by Vodafone shows that the contrary is the more reasonable expectation. If Telstra is able to maintain its historic trend in terms of expanding F2M margins then Vodafone estimates that it will retain over \$570m in 'additional margin' over the 18 month period to which the draft pricing principles applies.

The 'additional margin' generated for Telstra, which amounts to almost \$1 billion over the period June 2004 to December 2008 (i.e. the end of the draft pricing principle) and around \$1.3 billion for the Australian fixed sector as whole, is a direct cost to the LTIE.

We discuss below the implications that this has for long term competition and for other matters to which the Commission must have regard.

³³ op cit. *Vodafone initial submission*, p.5.

4.1.3. Backdating in any access arbitrations on the basis of the MTAS pricing principles will not be in the LTIE

The incomplete nature of 'pass through' will be further undermined in the event that the Commission applies the indicative price in the final pricing principles determination for MTAS (if this is a price below 12cpm) in any access arbitration, which is backdated to 1 July 2007.

With the draft pricing principles not expected to be finalised before the end of August, there is no evidence of any reductions in retail F2M prices having been made since 1 July 2007, on the reliance of the draft pricing principles or otherwise.

In these circumstances, Telstra – and other fixed line operators – will obtain a 'windfall' in terms of lower costs through the backdating of any access arbitration, but there is no provision of such payments to be shared retrospectively with F2M callers who will have faced prices based on the higher MTAS rates prevailing at the time. This ensures that end-users will not obtain even partial benefits for many months of the proposed MTAS decrease.

It is clear that backdating any MTAS decrease in access arbitrations to 1 July 2007 is not in the interests of end-users. Thus, even if the Commission considers some adjustment to the MTAS rate is required, any such adjustment must only take effect in any access arbitration after the release of the final pricing principles if it is to promote the LTIE.

4.1.4. The Commission has no plans to change its approach to the regulation of Telstra's fixed call prices yet the current arrangements weaken incentives for Telstra to maximise the efficiency of its fixed network and/or derive end-users of the benefits of such efficiencies

A change in historic trends on pass through can only be assumed if the Commission can identify some exogenous factor which will change market behaviour. Regulation would be one such factor – which has not been done in the draft pricing principles.

Vodafone believes that the current regulation of Telstra's fixed call basket operates against the LTIE. Price control baskets – such as that applied to Telstra – are intended to provide incentives for operators to pursue cost efficiencies and to allow end-users to share in a significant proportion of those gains³⁴. However, in the present case, Telstra is not required to reflect changes in input costs, such as MTAS, in its output prices for the purposes of complying with the basket. This means that even if partial pass through produces lower F2M prices for Telstra customers and even if the remaining MTAS benefits are passed through in full via reductions in other services in the basket, Telstra is *still able* to retain its non-MTAS cost efficiencies whilst appearing to exceed its overall basket obligations. Telstra's customers may appear to be getting a good deal, but they are in fact being deprived of most of the efficiency gains which Telstra itself is making in its own activities.

³⁴ They are also intended to provide positive incentives to Telstra management. In this case, Telstra's management need produce only very modest cost efficiencies in the Telstra network since they can rely upon the Commission to deliver large exogenous cost reductions through MTAS regulation which they can then use to meet price control obligations. Telstra therefore has less incentive to improve the performance over which it has direct control than those incumbents who are obliged to adjust their basket to reflect exogenous efficiency gains.

An initial examination of Telstra price cap performance for the half year to December 2005, published in August 2006³⁵, shows Telstra exceeding its cap for the basket of local, trunk (including F2M) and international calls. For the half year Telstra was required to reduce prices by 1.05% and in fact reduced prices by 4.44%. Prices fell by almost 6% for the full year.

At first sight, this suggests that Telstra's customers are being well served by the combination of the price control basket and other competitive factors.

However, closer examination of the data suggests otherwise. Data for the full year suggests that F2M calls represent at least 42% (by weight) of the PSTN calls basket³⁶. The input cost for F2M calls (i.e. the reduction in MTAS) fell by at least 16% during this same period³⁷, suggesting that the weighted input (exogenous) cost reduction for the calls basket as a whole was at least 6.72%. Full 'pass through' would mean that a 6.7% reduction in input costs should translate into approximately a 3.5% reduction in end-user fixed prices (since MTAS represents about 50% of the F2M end-user price). With CPI at around 2.5%, this means that Telstra can reduce fixed prices in the basket by 1% per year *without having to make any efficiency gains within its own network*. The latest Telstra price cap for the fixed calls basket only requires Telstra to reduce prices by 0% (i.e. CPI-CPI)³⁸. In other words, the reduction in MTAS has such a significant impact upon the performance under the overall basket that Telstra has to do nothing else in order to exceed the current fixed services cap.

We find it hard to believe that Telstra will have been unable to improve its own network cost performance over the current period³⁹. The reality is that Telstra has done better than this, but that end-users are likely to have been denied the benefits.

In order to conclude that these arrangements do not operate against the LTIE, the Commission would have to maintain either that Telstra generates no other significant cost efficiencies for itself, or that it is unconcerned that the benefits of these efficiencies are not passed on to end-users. In our view neither position is sustainable.

Given that the Commission has not contemplated changes in F2M regulation – despite the strong case for doing so – the Commission must rely on the claim that the LTIE is promoted even if current partial levels of pass through are maintained. This brings us on to the next step in the argument:

³⁵ See http://www.accc.gov.au/content/item.php?itemId=769049&nodeId=9870a362f6d281eb9769f350dae6b923&fn=PCAP%20report_telstra_August06.pdf

³⁶ See ACCC, *Telecoms Competitive Safeguards 2005-6*; <http://www.accc.gov.au/content/item.php?itemId=788067&nodeId=b3d4690165421731a5b2066d040417d8&fn=ACCC%20telecommunications%20reports%202005-06.pdf>, p. 83.

³⁷ We ignore reductions in the costs of the Telstra network itself, which are also likely to have been significant.

³⁸ See http://www.dcita.gov.au/communications_for_business/funding_programs_and_support/connect_australia/new_telstra_retail_price_controls

³⁹ Typical X values for fixed calls baskets in Europe would be around 4-5%p.a.

4.2. The waterbed debate

The debate surrounding the waterbed and its implications for the draft pricing principles and the LTIE is as follows:

- the Commission must rely upon partial pass through promoting LTIE. It could do this if it can show that the regulation of MTAS has no impact on prices in other telecommunications markets;
- the Commission attempts to do this by claiming that ‘the waterbed’ does not operate in Australia. It claims that the Tribunal supports its view on this point. It also claims that the fact that Australian mobile call charge and access prices are falling refutes the waterbed;
- Vodafone does not deny that Australian mobile access and call prices have fallen whilst MTAS have fallen. However, Vodafone rejects the Commission’s conclusion that this allows them to disregard the waterbed. Further Vodafone believes that the Commission have misunderstood the Tribunal’s position. Finally, the Commission’s reference to F2M pass through also confirm that it misunderstands the waterbed⁴⁰;
- Vodafone presents the most robust empirical evidence to date to show that the Commission must assume at least a 50% waterbed;
- Vodafone then models the LTIE, taking into account both the partial pass through and waterbed effects. We use both a Vodafone model and a model employed by the New Zealand regulator to assess termination rate setting in New Zealand. We find that if we ignore any adverse impact on LTIE arising from the operation of the Telstra fixed service price cap then the LTIE gain is at best \$18 million. More plausible assumptions suggest that the Commission’s proposals will undermine the LTIE by more than \$100 million per year; and
- there is also no evidence to suggest that a further reduction in MTAS will promote competition in the Australian market and every reason to suppose that the position of the integrated fixed-mobile operators will be further strengthened relative to their mobile-only competitors.

4.2.1. The Commission must rely upon partial pass through promoting LTIE. It could do this if it can show that the regulation of MTAS has no impact on other prices. It attempts to do this by claiming that ‘the waterbed’ does not operate in Australia.

The Commission appears to believe that provided the retail prices of mobile services have been falling, the ‘waterbed’ cannot be operative.

⁴⁰ Draft pricing principles, p.26. The Commission presumably believes that if Telstra were to increase F2M prices in response to reductions in MTAS then this would demonstrate the ‘waterbed’. Since F2M prices have no direct impact on the lifetime value of mobile customers (other than to reduce it if F2M prices are increased), Vodafone sees no reason why Telstra would seek to adjust F2M prices to ensure that marginal mobile customers remain profitable.

The LTIE test requires the Commission consider whether the regulatory actions that it proposes to take under Part XIC will promote the LTIE, and to what extent these interests will be promoted. Most other regulators around the world are subject to similar statutory considerations in the exercise of their regulatory powers. In this case, it is quite possible – indeed likely given the expansion of the market – that retail prices for mobile services will be falling whether or not MTAS rates are regulated, but that they would fall further and faster in the absence of regulation. Vodafone does not think this statement is controversial. It is the view taken by other regulators such as the UK’s Competition Commission, which expected mobile prices to fall, but at about half the rate anticipated in the operators’ business plans, as a result of regulation⁴¹. It is perfectly possible for the waterbed to operate fully *and* for mobile prices to be falling in Australia. The Commission’s suggestion that one disproves the other is incorrect.

4.2.2. Vodafone believes that the Commission has misunderstood and misquoted the Tribunal

The Commission cites the Tribunal in support of its claim that the waterbed effect does not exist in Australia:

*... we do not consider that Optus would be strongly constrained in setting its DGTAS price by competition in the retail market. The mobile operators could set their termination charges on a reciprocal basis at above cost while still competing vigorously in the retail market. Indeed, it was accepted that that is what they do.*⁴²

The Tribunal is here considering bi-lateral negotiations between mobile operators in the setting of MTAS and the question as to whether mobile operators might be expected to set efficient inter-mobile MTAS in the absence of regulation. This question has nothing to do with the presence or otherwise of a waterbed effect. Even if mobile operators were to set efficient inter-mobile MTAS (which in any event the Tribunal doubts), the Tribunal confirmed the Commission’s view that MTAS should be regulated and that their levels should be reduced. The question is then what happens to other mobile prices in the presence of such regulation. The quote cited offers no assistance in this context.

A careful reading of the Tribunal’s decision shows that the Tribunal did recognise and discuss the interplay between MTAS and other mobile prices which is the essence of the waterbed. At para 83 of the Optus decision it notes:

When competing with each other, mobile service providers take into account all their sources of revenue. It is a feature of the Australian market that providers offer retail customers a bundle of services in which usage charges subsidise charges for handsets and for access to the network (where access means connection and thus the ability to make and receive calls, while usage is the actual making and receipt of calls). Thus some components of the mobile service provided to the customer may be supplied below cost and some components above cost. If Optus’ DGTAS is supplied at a price which exceeds the efficient costs of supply of that service, it does not necessarily follow that such price is unreasonable. The interactions between the

⁴¹ The Competition Commission concluded ‘in our view there will be a waterbed effect’ and then modelled various waterbed effects, see p.2130 et seq at http://www.competition-commission.gov.uk/rep_pub/reports/2003/fulltext/475c2.pdf. The New Zealand Commerce Commission has more recently made similar assumptions in its welfare modelling, see para 62, Commerce Commission Final report at <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobileTerminationRates/ContentFiles/Documents/Mobile%20Termination%20Reconsideration%20Final%20Report%2021%20April%202006%20.pdf>

⁴² op cit., *Application by Optus* para 84-85.

provision of the DGTAS and of the retail services need to be examined. Such a price may not be unreasonable where the overall charge for all the relevant services does not exceed the efficient costs of supply of those services.

And at para 90:

It is sufficient for present purposes to note that any consideration of the reasonableness of the pricing of a mobile network operator's terminating access service must take into account the pricing of the bundled retail services and the market within which the bundled service is supplied.

This is the waterbed which the Commission ignores. Moreover, the Tribunal then goes on to consider the case for a NES in Australia. We address this below, but it is sufficient to note here that any such surcharge can *only* be justified if the interplay between MTAS and other mobile prices (i.e. the waterbed⁴³) is accepted (otherwise a surcharge would have no impact upon marginal subscribers and would be detrimental to LTIE). The Tribunal concluded on this point at para 291:

We do not rule out the possibility that taking account of externalities may be a valid part of coming to a reasonable price.

4.2.3. Vodafone presents the most robust empirical evidence developed to date to show that the Commission must assume at least a 50% waterbed

The theoretical basis for the waterbed has been extensively discussed and is not in dispute. It derives from the assumption that mobile firms will be profit maximising and will seek to ensure that the lifetime value of customers they acquire will be positive⁴³. The Commission provides no evidence to suggest that Australian mobile firms are not also profit maximising – and its discussion of the recent performance of the industry suggests quite the opposite⁴⁴.

The magnitude of the 'waterbed' has been more controversial, both in theory and practice. Professor Jerry Hausman has shown – and the New Zealand Commerce Commission has accepted – that it must be at least 50%, even under monopoly conditions. This is now supported by robust empirical evidence after recent work undertaken by Professor Valletti and Dr Genakos on the waterbed, which is attached at Annex B to this submission. The data used by the authors includes data from Vodafone in the Australian market.

Since the Commission cannot assume no waterbed, the question of whether the Commission's proposal to reduce MTAS to 9cpm promotes the LTIE is an empirical one. The Commission discussed the waterbed briefly in its MTAS decision of June 2004⁴⁵. The Commission challenged the figures presented by Optus and pointed to other externalities that exist to counterbalance the effects. But this shows that this issue requires careful empirical consideration. It does not entitle the Commission to conclude that the waterbed can be ignored, as in the draft pricing principles.

⁴³ For a summary, see Genakos and Valletti (Annex B).

⁴⁴ see draft pricing principles, pp.53-4.

⁴⁵ The Commission refers to this as the 'fixed line externality' at p.157 et seq. *Mobile Service Review, Final Decision*, June 2004. This suggests some misunderstanding about the difference between the debate on the waterbed and that concerning Network Externality Surcharges (NES), which we explain in Section 5.

The draft pricing principles fails to recognise the debate and evidence, since June 2004 particularly that arising from the New Zealand Commerce Commission enquiry (which concluded in 2006), the later findings of Ofcom, and the results of the work by Hausman and Wright which specifically refer to data for the Australian market.⁴⁶

4.3. Calculating the LTIE

The draft pricing principles make no attempt to quantify the LTIE arising from the proposed measures. The Commission instead assumes that lower F2M retail prices will increase consumer welfare (which we do not dispute); and that there are no other adverse consequences for LTIE to which it must have regard (which we do dispute). The Commission has not given due attention to balance these competing considerations in order to determine whether the LTIE test is met by the proposals.

We do so in this section, using both a Vodafone welfare model⁴⁷ and by running the model developed by the New Zealand Commerce Commission. The modelling which Vodafone presents here is not intended to provide a precise measure of the LTIE under particular scenarios, but it is intended to demonstrate to the Commission the work that it is required to undertake, and that other regulators have undertaken, in order to satisfy itself that reductions in MTAS promote the LTIE under reasonable assumptions. It reveals that:

- employing the same welfare model as the New Zealand Commerce Commission (and thereby ignoring any additional negative impacts of the Telstra fixed services price cap which are unique to Australia), the LTIE impact of the Commission's proposals lies in the range of +/- \$13 million over the eighteen month period
- employing the Vodafone welfare model for an eighteen month period, we can show that very conservative elasticity assumptions (0.1) – lower than anything found in any real world telecommunications market with which Vodafone is familiar – result in de minimus (\$5 million) LTIE gains and more realistic elasticity assumptions (0.5) serve to reduce consumer welfare by more than \$100 million.

4.3.1. Key assumptions

We assume an MTAS reduction from 12cpm to 9cpm, applied to 10.2 billion F2M calls as the forecasted volume for the period of the draft pricing principles).

Vodafone has explained above that the Commission cannot assume that the degree and pace of pass through will increase during the pricing principle period. To capture the effect of delayed pass through, we apply the average level of pass through for the period of the draft pricing principles (at 56%⁴⁸). This is a conservative assumption, as we have shown that the trend is for Telstra to expand its F2M margins through delaying pass through of MTAS decreases and we have ignored the lack of retrospective pass through.

⁴⁶ The draft pricing principles note that Vodafone submitted the Hausman/Wright paper, but fails to refer to a key conclusion from the paper, namely that cost-based regulated rates are likely to operate against the LTIE relative to alternatives (whether regulated or unregulated). The paper itself can be found at http://econ-www.mit.edu/faculty/download_pdf.php?id=1366

⁴⁷ Copies of the Vodafone welfare model are available to the Commission on request.

⁴⁸ This is the average level of pass through for the eighteen months of the draft pricing principles, given F2M price decreases consistent with observed trends.

We have also explained that a reduction in MTAS input costs allows Telstra to meet its price cap basket commitments without reducing the prices of other services, to the extent to which it would otherwise be required to do. In the absence of proposals to change the way in which Telstra's fixed service price controls work, and in the absence of significant changes in the competitive conditions on the fixed services market – for which there is no evidence – Telstra would be expected to continue to retain some of the cost efficiencies which it would otherwise be required to pass on to its end-users. As discussed above, if we assume conservatively that Telstra can access non-MTAS cost efficiencies for the provision of fixed calls of around 4% per year, it then appears that only about 2% of these gains are currently being passed to end-users. In the absence of MTAS regulation, we assume that a further 2% of cost efficiencies would be delivered to fixed users via the existing price basket arrangements during the eighteen months of the draft pricing principles.

Vodafone has shown that a waterbed effect exists in Australia. The precise quantity is unknown, so we model the most conservative assumption possible of 50%.

Our modelling then requires assumptions about elasticities. These are run as explicit sensitivities in the Vodafone model. We use those employed by the Commerce Commission in running their model.

We ignore any welfare losses arising from Telstra's loss of incentives to realise or to pass through efficiency gains which it makes in its own fixed network which arise because it can readily meet its fixed services price cap commitments by only partially passing through MTAS cost reductions. This would further increase LTIE losses.

4.3.2. LTIE results

The results using the same welfare model employed by the New Zealand Commerce Commission (Table 5) show that consumer welfare gains/losses to lie in the range +/- \$13 million for the period of the draft pricing principles:

The results from the Vodafone model show that very conservative elasticity assumptions (0.1) – lower than anything found in any real world telecommunications market with which Vodafone is familiar – result in de minimus (\$5 million) LTIE gains and more realistic elasticity assumptions (0.5) serve to reduce consumer welfare by more than \$100 million (table 4).

Table 5 New Zealand Commerce Commission Welfare Model

Linear demand				
BENEFITS		2006	2007	2008
			1	2
Increase in consumer surplus from reduced FTM prices				
FTM allocative efficiency gain	\$	-	\$ 1,581,687	\$ 4,172,327
FTM transfer of excess returns	\$	-	\$ 53,661,224	\$ 109,038,518
Total increase in consumer surplus	\$	-	\$ 55,242,911	\$ 113,210,845
DETRIMENTS				
Direct regulatory costs	\$	-	-\$ 2,142,857	-\$ 2,142,857
Reduction in consumer surplus from reduced mobile subscription				
FTM consumer surplus loss	\$	-	-\$ 571,451	-\$ 1,074,760
MTM consumer surplus loss	\$	-	-\$ 1,799,491	-\$ 3,422,344
Mobile subscriber consumer surplus loss	\$	-	-\$ 47,887,666	-\$ 97,261,511
Total reduction in consumer surplus	\$	-	-\$ 50,258,608	-\$ 101,758,615
Total Detriments	\$	-	-\$ 52,401,465	-\$ 103,901,472
NET BENEFIT (CW model)	\$	-	\$ 2,841,445	\$ 9,309,372
Constant elasticity demand				
BENEFITS		2006	2007	2008
			1	2
Increase in consumer surplus from reduced FTM prices				
FTM allocative efficiency gain	\$	-	\$ 435,223	\$ 1,845,497
FTM transfer of excess returns	\$	-	\$ 53,661,224	\$ 109,038,518
Total increase in consumer surplus	\$	-	\$ 54,096,447	\$ 110,884,015
DETRIMENTS				
Direct regulatory costs	\$	-	-\$ 2,142,857	-\$ 2,142,857
Reduction in consumer surplus from reduced mobile subscription				
FTM consumer surplus loss	\$	-	-\$ 2,561,564	-\$ 4,816,224
MTM consumer surplus loss	\$	-	-\$ 7,733,189	-\$ 14,438,771
Mobile subscriber consumer surplus loss	\$	-	-\$ 47,883,443	-\$ 97,240,471
Total reduction in consumer surplus	\$	-	-\$ 58,178,195	-\$ 116,495,466
Total Detriments	\$	-	-\$ 60,321,052	-\$ 118,638,323
NET BENEFIT (CW model)	\$	-	\$ 6,224,606	\$ 7,754,309

Table 6 Vodafone welfare model for MTAS in draft pricing principles

	Price elasticity		
	0.0	0.1	0.5
Now			
MTAS price (\$)	0.120	0.120	0.120
F2M price (\$)	0.300	0.300	0.300
F2M minutes (mill)	10,200	10,200	10,200
Other mobile revenues (\$mill)	16,000	16,000	16,000
Terminating voice revenues (\$mill)	1,224	1,224	1,224
F2M revenue (\$mill)	3,060	3,060	3,060
F2M revenue within basket	43%	43%	43%
Telstra market share	78%	78%	78%
Other fixed revenue (\$mill)	4,056	4,056	4,056
Pass-through	56%	56%	56%
Mobile waterbed	50%	50%	50%
	-153	-150	-140
Fixed waterbed	0%	0%	0%
New			
MTAS price (\$)	0.090	0.090	0.090
F2M price (\$)	0.283	0.283	0.283
F2M minutes (mill)	10,200	10,259	10,498
Other mobile revenues (\$mill)	16,000	16,000	16,000
Terminating voice revenues (\$mill)	918	923	945
F2M revenue (\$mill)	2,889	2,905	2,973
Price change			
MTAS	-25%	-25%	-25%
Mobile price	1%	1%	1%
F2M	-6%	-6%	-6%
Fixed price increase	0%	0%	0%
End-user welfare change (\$mill)			
F2M	171	172	174
Mobile prices	-153	-167	-277
Loss of non-MTAS efficiency gains	0	0	0
Total welfare change (\$mill)	18	5	-103

4.3.3. Other LTIE implications are not captured by modelling – investment incentives and error costs

Even if the Commission disregards the impact on non-F2M prices under the current price cap arrangements, Vodafone submits that the \$18 million impact on end-user welfare over 18 months is not significant enough to erode the very real risk of damaging future investment and competition as a result of setting MTAS too low.

The Commission has acknowledged that the welfare gains from further reductions in MTAS are reduced as the rate approaches the efficient cost of provision, while the prospect of significant error costs increases.

The error costs and damage to future investments has been recognised by both Ofcom and OPTA:

- OPTA notes that a potential dynamic effect of lower MTAS is 'less investment or the departure of mobile providers'⁴⁹ and that it must take this into account in assessing the welfare benefit of the regulated rate. OPTA concluded that a reduction to the modelled rate of 5.6 Euro cpm rather than 7 Euro cpm did not produce a welfare benefit significant enough to offset the negative dynamic effects of lowering the rate; and
- Ofcom notes that there is an asymmetry in the risks of setting a MTAS rate that turns out to be too low. Ofcom also note that a rate that fails to recover efficient costs of providing MTAS will have a negative impact on investment. Consequently, Ofcom say that MTAS should not be set so close to costs 'as to impact adversely prospects for investment', particularly given the uncertainty about future traffic on 2G and 3G networks⁵⁰.

4.3.4. The proposals have an adverse impact on competition in Australia

Thus far we have considered the impact of the proposals on prices but have ignored the longer term consequences for competition and investment in the Australian communications market. The Commission concludes that the mobile industry has remained profitable in the face of MTAS regulation, and concludes that competition is not adversely affected by reductions in MTAS⁵¹.

Vodafone submits that this analysis is simplistic. The key issue is not the short term performance of the industry. The key issue is the relative performance of firms in the relevant markets and their competitive prospects over the longer term. The key consideration here – which distinguishes the relative prospects for different firms – is the 'windfall' which accrues to Telstra as a result of partial F2M pass through of MTAS reductions.

It might be possible – although we note the Commission does not do so – to argue that this 'windfall' is redistributed to end-users by Telstra either in the form of:

- lower fixed prices than would otherwise be the case; and/or
- lower mobile prices than would otherwise be the case.

⁴⁹ OPTA, *Mobile Call Termination Market Analysis – draft decision*, para.655.

⁵⁰ Ofcom, *Mobile Call Termination Statement*, March 2007 p.166.

⁵¹ Draft pricing principles, pp.53-4.

In the latter case, this might take the form of the Commission's claim that the waterbed has been moderated in Australia.

As noted previously, there is no evidence to support such a claim. A careful analysis of the Telstra fixed services price basket shows that even if some of the windfall is recycled into lower fixed services prices, this allows Telstra to retain non-MTAS cost efficiencies (i.e. Telstra derives its windfall from other sources which it could not do in the absence of MTAS regulation). Nor is there evidence to suggest that mobile prices have fallen faster or further in Australia than we might have expected, and the Commission does not claim that they have. Vodafone further notes if Telstra were to use the 'windfall' in this way, the implications for competition in the mobile sector would operate strongly against the LTIE.

It is easy to see this by considering the impact of MTAS reductions for the integrated and non-integrated firms in Table 7:

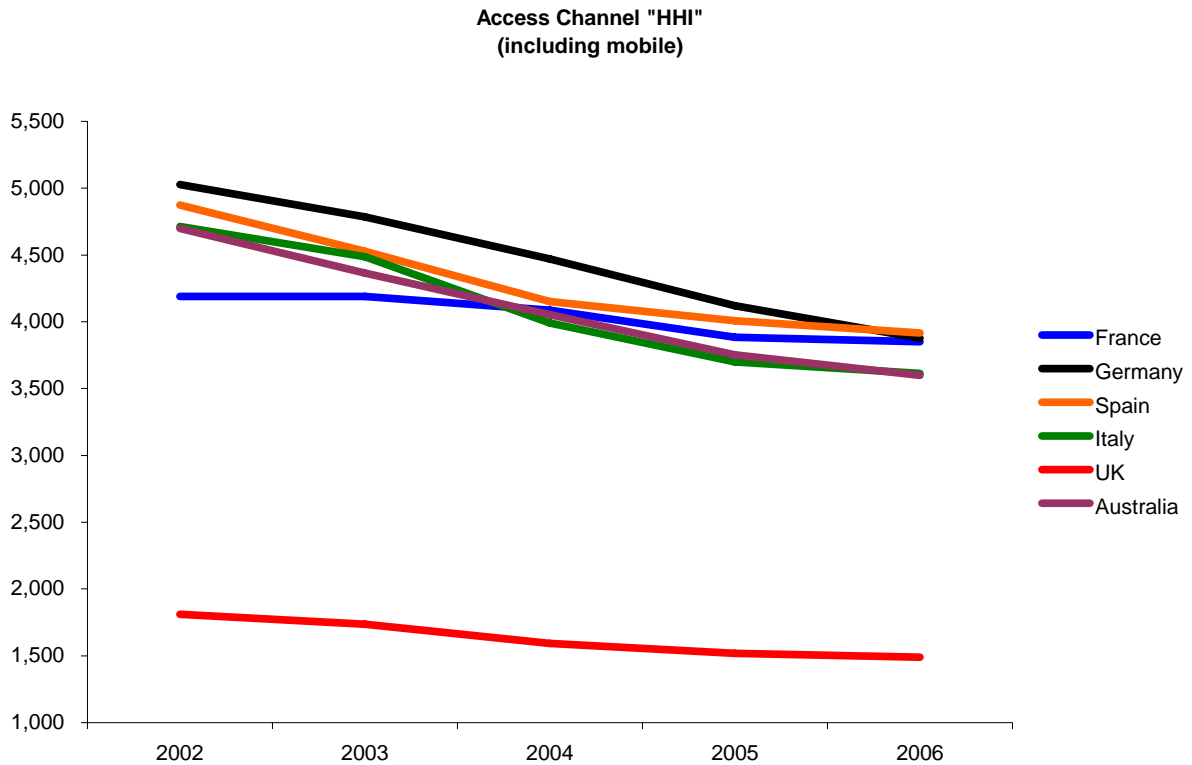
Table 7 Impact of MTAS reductions

<i>Integrated firm</i>	<i>Non-integrated (mobile only) firm</i>
<i>Loss</i> to mobile arm from lower MTAS revenue	<i>Loss</i> to mobile arm from lower MTAS revenue
<i>Gain</i> to mobile arm from waterbed	<i>Gain</i> to mobile arm from waterbed
<i>Gain</i> to fixed arm from lower MTAS and only partial pass through ('windfall')	
<i>Neutral</i> to fixed arm since lower F2M revenues can be offset by other fixed prices within the basket (or by less pass through of non-MTAS cost efficiencies)	

The gains and losses to the integrated firms, particularly Telstra, are the same as those for the non-integrated firm such as Vodafone, with the exception of the partial pass through gain which we demonstrated earlier to be in the order of \$1 billion over the period of MTAS regulation. The impact on long term competition in the Australian mobile and fixed sectors which arises from a regulatory transfer of \$1 billion to the dominant firm is difficult to quantify, but is likely to be substantial. It exceeds, for example, the cumulative capital expenditure undertaken by Vodafone in the Australian market during the same period. If Telstra were to apply these funds to keep mobile prices low, while Vodafone and other non-integrated firms are unable to access similar cross-subsidies, then it would make many mobile customers unprofitable for Vodafone.

This is not mere speculation. As Graph 2 below shows, when we consider Herfindahl-Hirschman Index (HHI) across 'all channels' that an incumbent operator might control (i.e. fixed, mobile and broadband combined) Telstra remains as dominant across most sectors of the Australian telecommunications market as, for example, Telecom Italia in Italy (where Telecom Italia's F2M pass through is directly regulated).

Graph 2 Herfindahl-Hirschman Index (HHI)



Source: Vodafone analysis

The Commission claims that mobile operators are profitable and therefore do not appear to be suffering adverse consequences of MTAS reductions⁵². Vodafone disagrees with this simplistic view.

We note that Vodafone's Australian operations remain relatively unprofitable compared to similar operations in other markets where Vodafone has been present for more than 5 years (and many where Vodafone is a more recent entrant). Vodafone Australia's most recent results suggest an EBITDA margin of [cic]. This is about [cic] the average Vodafone Group EBITDA margin of [cic] for the year 2006/7. At a minimum, this suggests that competing with integrated carriers in the Australian environment is particularly challenging relative to other markets where Vodafone undertakes operations which are otherwise very similar. The foregoing analysis of MTAS regulation begins to explain why this might be the case.

There is, in short, no evidence to suggest that a further reduction in MTAS will promote competition in the Australian market and every reason to suppose that the position of the integrated fixed-mobile operators will be further strengthened relative to their mobile-only competitors.

⁵² Ibid., pp.52-4.

5. Network externalities

The previous section considered the impact of the Commission's proposals on LTIE, assuming that those proposals had no impact upon the number of Australian mobile and fixed telephone users but that it changed the prices that they paid for the services that they consume. As such, the arguments presented in the previous section are not dependent upon the Commission's approach to NES.

On the other hand, it is also clear that the Commission's position on waterbed – that it does not exist – may have led the Commission to assume that NES could also be disregarded.

Vodafone accepts that if there is zero waterbed then there is no case for NES. However, Vodafone has illustrated above that the Commission is incorrect to assume a zero waterbed and that a waterbed of at least 50% is the more plausible assumption. In these circumstances, the Commission must give the NES serious consideration.

5.1. The Tribunal accepts that the case for NES is an empirical matter

The Commission has rejected NES in the past and does so again in the draft pricing principle⁵³ for two reasons:

- doubt that the benefits from subsidising marginal subscribers in order to keep them on the network are very large – either because there are few marginal customers or because the externalities they generate are small or both; and
- doubt whether, even if the benefits are keeping marginal customers are significant, these benefits should be accessed through an NES – as opposed to some other form of subsidy.

The Tribunal accepted that externalities might validly be taken into account, but noted the lack of empirical data which might allow them to do so with any degree of confidence. Vodafone is disappointed that the Commission has made no attempt to gather any data to validate its assertion that the benefits of marginal subscribers are modest. Vodafone has therefore done so and presents the results below.

5.2. The Commission assumes there is no case for NES – its assumptions are unfounded and refuted by the available evidence

The Commission is mistaken to believe that the waterbed only exists if mobile prices rise in absolute terms and it is also mistaken to suggest that marginal customers do not exist in markets which have high levels of mobile penetration. As we show below, and as the Tribunal emphasised, the existence or otherwise of marginal subscribers is an empirical matter.

The most robust time-series data presented on this issue has been provided in the UK⁵⁴. In 2002, with mobile penetration in the UK at 68%, the Competition Commission found that 34% of existing mobile subscribers were marginal and that 23% of non-subscribers were marginal⁵⁵.

⁵³ Op cit., pp.17-8.

⁵⁴ Although the New Zealand Commerce Commission also recognised that mobile customers would leave the network if MTAS were reduced in its welfare modelling.

⁵⁵ See Annex 8.1 and 8.2 at http://www.competition-commission.gov.uk/rep_pub/reports/2003/fulltext/475a8.1.pdf

In 2006, with mobile penetration at 81% in the UK (higher than Australia at that time), Ofcom found 34% of existing subscribers and 14% of non-subscribers to be marginal. There is no reason to assume, as the Commission does, that marginal subscribers disappear in markets with high levels of mobile or fixed penetration.

If we accept this, the Commission might reply that the loss of a potentially large number of marginal fixed subscribers arising from higher MTAS would counterbalance any gain from retaining marginal mobile subscribers on the network. Vodafone does not accept that there is any intuitive reason to suppose that fixed subscribers are more or less sensitive to subscription price changes than mobile subscribers, but in any event the Commission must take into account the fact that the positive network externalities of marginal fixed subscribers are already captured in the Universal Service Obligation – for which Telstra receives a subsidy of circa \$150 million per year.

Finally, the Commission suggests that the positive externalities can be captured without any NES on MTAS, either by internalisation on the part of subscribers themselves (e.g. by other subscribers buying handsets for marginal customers⁵⁶) or by 'targeting' on the part of the operators. Whilst Vodafone does not dispute that these effects might moderate the case for an NES and need for the NES to be taken into account (as they are by Ofcom when modelling 'leakage'), the Commission has no grounds at all for assuming that these factors render the case for an NES null and void.

5.3 Estimating the number of marginal mobile subscribers in Australia

Vodafone engaged a market research firm to estimate mobile subscribers' willingness to pay for a replacement handset – either to renew contract, or to replace broken or stolen handset. Vodafone engaged a market research firm to estimate mobile subscribers' willingness to pay for a replacement handset – either to renew contract, or to replace broken or stolen handset. The report is attached at Annex C.

An online interview approach was used for this study. To ensure robustness and the ability to explore the results by carrier a sample size of 1,000 interviews was undertaken. Quotas were set to ensure the sample is nationally representative in terms of:

- Age;
- Gender;
- State;
- Socio-economic class;
- Network; and
- Pre-pay vs post pay.

The quotas were floors rather than being definitive – to allow refinement by weighting, if required. The data was post weighted to age, gender, state, socio-economic class, network and pre-paid vs post paid to ensure a representative base sample for decision and forecasting purposes.

⁵⁶ Although UK's Competition Commission found that only 3.6% of the population had a mobile bought for them – whilst around ten times (34%) that number were marginal – see para 8.117.

A mobile subscriber is defined as someone who selected the mobile phone network *and* purchased the mobile handset. It does not include users whose employer selected the network or the mobile phone.

The interview contained questions regarding current usage patterns, current spend on mobile phones (including usage), attitudes towards replacing the current phone – including the price subscribers' are willing to pay.

For assessing the NES, a marginal subscriber is someone who is not willing to pay for the total cost of a standard handset. That is, without subsidised entry to the network, the subscribers would not renew or continue membership.

The results of the survey indicate that the *most* mobile subscribers would be willing to pay for a replacement handset is \$178. This varies for age groups, with 18-24 year olds willing to spend twice as much as 55-65 year olds.

The survey results show that 44% of mobile subscribers would not be willing to pay more than \$110 to replace their current handset. And 61% would not be willing to pay more than \$150.

Vodafone notes that Ofcom defined as marginal, subscribers who were not willing to pay more than £70 – equating to \$166 at current rates. As noted above, Ofcom found 34% of subscribers unwilling to pay that much. The Australian research shows that 61% would be unwilling to pay that much. This implies that there are more marginal subscribers in the Australian market than in the UK mobile market today.

This empirical work shows that there is a significant proportion of marginal subscribers to mobile networks – and lower MTAS rates is likely to result in fewer mobile subscribers. Vodafone submits that there are clear welfare benefits from the introduction of a NES in Australia (and large risks of not doing so).

Annex A – Analysys review of WIK model
