Australian
Competition &
Consumer
Commission

Assessment of Vodafone's mobile terminating access service (MTAS) Undertaking

Draft Decision

Public version

December 2005

Contents

Contents ii
Abbreviations vi
Executive summary vii
1. Introduction 1
1.1. Making submissions 2
1.2. Structure of this report 2
2. Background 4
2.1. Declaration and the dispute resolution framework 4
2.2. The declared service (MTAS) 5
2.3. The Commission's Pricing Principles Determination 6
3. Legislative criteria for assessment of an undertaking 8
3.1. Form and contents of an undertaking 8
3.2. Criteria for assessing an undertaking 8
3.2.1. Public process 9
3.2.2. Consistency with the standard access obligations 9
3.2.3. Consistency with Ministerial Pricing Determination 10
3.2.4. Whether the terms and conditions are reasonable 10
3.2.5. Expiry date and Term 14
3.3. Procedural matters 14
3.3.1. Confidentiality 14
3.3.2. Statutory decision making period 15
3.3.3. Use and disclosure of confidential information in this report 17
3.3.4. Documents examined by the Commission 17
4. Summary of the Vodafone Undertaking 19
4.1. Service description 19
4.2. Price terms and conditions 20
4.3. Non-price terms and conditions 21
4.4. Supporting material to Vodafone's undertaking 22
4.4.1. The Vodafone submission 22
4.4.2. The PwC model 23
4.4.3. Weighted Average Cost of Capital (WACC) 23
4.4.4. The Frontier model 24
4.4.5. The 'waterbed' report (Frontier) 24
4.4.6. Response to Commission discussion papers on the MTAS access undertakings lodged by Vodafone and Optus (Frontier) 24
4.4.7. The PwC 2003-04 re-run of the Fully Allocated Cost model 25
4.4.8. Frontier response to AAPT's submission on Ramsey-Boiteux Mark-Ups and Network Externality Effects 25

4.4.9. Vodafone response to Hutchison submission 25
5. Vodafone's MTAS cost estimate 27
5.1. Modelling approach 27
5.1.1. Top-down fully allocated cost model 27
5.1.2. The use of 'Vodafone' as the modelling benchmark 29
5.1.3. The decision to use '2002-03' data 30
5.1.4. The decision to model 2G/2.5G costs 34
5.1.5. The use of a 'tilted annuity' approach 35
5.1.6. Conclusion on model approach 37
5.2. The assessment of the PwC model inputs 37
5.2.1. The estimation of costs 38
5.2.2. Allocation of costs 45
5.2.3. Volumes used in PwC model 50
5.2.4. Conclusion on PwC model inputs 51
5.3. Conclusion on Vodafone's empirical cost estimate 52
6. Vodafone's FTM pass-through safeguard 53
6.1. The pass-through safeguard mechanism 53
6.1.1. The Pass Through Obligation 53
6.1.2. Compliance and pass-through disputes 55
6.1.3. The pass through rebate 55
6.1.4. Transit traffic 56
6.2. The extent of pass-through 58
6.3. The market within which FTM services are provided 60
6.4. The Part XIC access regime and retail price controls 61
6.5. Implementation of the FTM safeguard 64
6.6. Overall conclusion 66
7. The reasonableness of the price terms and conditions 68
7.1. The LTIE 73
7.1.1. Vodafone's submissions 73
7.1.2. Submitters' views 75
7.1.3. The Commission's view 76
7.2. Vodafone's legitimate business interests 89
7.2.1. Vodafone's view 89
7.2.2. Submitters' views 90
7.2.3. The Commission's view 90
7.3. The interests of persons who have the right to use the declared service 93
7.3.1. Vodafone's view 93
7.3.2. Submitters' views 93
7.3.3. The Commission's view 94
7.4. The direct costs of providing access to the declared service 95

7.4.1. Vodafone's view 95
7.4.2. Submitters' views 96
7.4.3. The Commission view 96
7.5. The operational and technical requirements necessary for the safe and reliable operation of the carriage service/telecommunications network/facility 98
7.6. The economically efficient operation of a carriage service/telecommunications network/facility 98
7.6.1. Vodafone's view 98
7.6.2. The Commission's view 99
7.7. Other matters 99
7.8. Conclusions in relation to the price terms and conditions 99
8. The reasonableness of the non-price terms and conditions 101
8.1. Relevant criteria 101
8.1.1. Whether the terms and conditions promote the LTIE 101
8.1.2. Legitimate business interests of the Carrier/CSP and its investment in the facilities used to supply the declared service 101
8.1.3. Interests of the person who have rights to use the declared service 102
8.1.4. Operational and technical requirements necessary for the safe and reliable operation of the carriage service, network or facility 102
8.1.5. Other relevant matters 103
8.2. Assessment of the non-price terms and conditions 103
8.2.1. Vodafone's overall view as to 'reasonableness' 103
8.2.2. Submitters' overall views as to 'reasonableness' 104
8.2.3. Assessment of specific non-price terms and conditions 105
8.3. Conclusion on 'reasonableness of non-price terms and conditions 117
9. Overall conclusion on the reasonableness of Vodafone's terms and conditions 119
10. Consistency with the SAOs 120
10.1. Approach to assessing consistency with the SAOs 120
10.2. Identification of applicable SAOs 120
10.3. Assessment of consistency with each applicable SAO 122
10.3.1. Service to be supplied 122
10.3.2. Technical and operational quality of the service to be supplied 122
10.3.3. Fault detection, handling, rectification and timing of the service to be supplied 123
10.3.4. Interconnection 123
10.3.5. Provision of billing information 124
10.4. Conclusion 125
11. Draft decision on the Vodafone Undertaking 126
Appendix 1: Submissions received to Discussion Paper 127
Appendix 2: Assessment of the Frontier model 128
A2.1 Overview of the Frontier model 128
A2.2 Assessment of Frontier's cost inputs 129

A2.2.1 LRIC estimates 129
A2.2.2 FCC estimates 130
A2.3 Assessment of the R-B mark-up 133
A2.3.1 Normal profit constraint 134
A2.3.2 The conceptual applicability of the model used to derive the R-B prices 136
A2.3.3 Specification of the R-B framework – services included 138
A2.3.4 Credibility of the elasticity estimates used in the Frontier model 139
A2.3.5 The assumption of 'single-part' prices 143
A2.3.6 EPMU v R-B approach 144
A2.3.7 Conclusion on Frontier's R-B framework 147
A2.4 Assessment of the network externality surcharge (NES) 148
A2.4.1 Relevance of network externalities in the Australia mobile market 149
A2.4.2 External effects considered in the Frontier model 151
A2.4.3 To what extent can a subsidy be effectively targeted? 155
A2.4.4 Has the NES been calculated appropriately? 157
A2.4.5 Conclusion on NES mark-ups 159
A2.5 Basic reality test 159
A2.6 Overall conclusion on the Frontier model 160
Appendix 3: Ramsey-Boiteux pricing 162
A3.1 The 'Ramsey-Boiteux' (R-B) pricing rule 162
A3.1.1 Conditions required to ensure the optimality of R-B pricing 163
Appendix 4: Theoretical basis for the 'network externality surcharge' 168
A4.1 Network externalities 168
A4.2 Calling externalities 169
Appendix 5: Note on the 'waterbed' effect 171
A5.1 Frontier's 'waterbed' assumptions 172
A5.2 Submitters' views 172
A5.3 The Commission's view 173

Abbreviations

AAPT	AAPT Limited
Act	*Trade Practices Act 1974*
B-Party	The end-user to whom a telephone call is made
CCC	Competitive Carriers Coalition
Commission	Australian Competition and Consumer Commission
cpm	Cents per minute
CSP	Carriage Service Provider
FTM	Fixed-to-mobile
GQ-AAS	Gibson-Quai-AAS
GSM	Global System for Mobiles
LRIC	Long run incremental cost
LRMC	Long run marginal cost
LTIE	Long-term interests of end-users
MJA	Marsden Jacob Associates
MTAS	Mobile Terminating Access Service
MTM	Mobile-to-mobile
Optus	Optus Mobile Pty Limited and Optus Networks Pty Limited
POI	Point of interconnection
PwC	PricewaterhouseCoopers
RAF	Regulatory Accounting Framework
SAOs	Standard Access Obligations
SIO	Services in operation
Telstra	Telstra Corporation Limited
TSLRIC	Total service long-run incremental cost
TSLRIC+	Total service long-run incremental cost plus a mark-up to account for a proportion of organisational-level costs
Vodafone	Vodafone Network Pty Ltd and Vodafone Australia Limited
WACC	Weighted average cost of capital

Executive summary

RELEVANT BACKGROUND

On 30 June 2004, the Australian Competition and Consumer Commission (the Commission) declared the mobile terminating access service (MTAS) under section 152AL of the *Trade Practices Act 1974* (the Act). The MTAS declaration covers the termination of voice calls on all types of mobile networks (including third generation – or 3G – mobile networks).

At the same time, as required under section 152AQA of the Act, the Commission made a pricing principles determination for the service (the MTAS Pricing Principles Determination). The MTAS Pricing Principles Determination indicated that the price of the MTAS should follow an adjustment path such that there is a closer association of the price and underlying cost of the service. In this regard, the Commission indicated that cost should be estimated in accordance with the 'total service long-run incremental cost' (TSLRIC) cost concept, augmented by a mark-up (or '+') to enable a contribution towards the recovery of organisational-level common costs (estimated according to the so-called 'equi-proportionate mark-up' or EPMU' rule).[1] This was termed a 'TSLRIC+' approach.

In addition, the Commission also specified price-related terms and conditions in the Determination. These (shown in Table 1 below) specified that the price of the MTAS should trend towards 12 cents per minute (cpm) over the 30 month period from 1 July 2004 to 1 January 2007.

Table 1: Price related terms and conditions in the MTAS Pricing Principles Determination

Time period	Price related terms and conditions
I July 2004 – 31 December 2004	21
1 January 2005 – 31 December 2005	18
1 January 2006 – 31 December 2006	15
1 January 2007 – 30 June 2007	12

The 12 cpm 'target price' in the MTAS Pricing Principles Determination was set having regard to the best information the Commission had available to it, at the time of making the Determination, in relation to the TSLRIC+ of providing the MTAS. This included cost information sourced from regulatory accounting data supplied by Optus and Telstra under the Regulatory Accounting Framework (RAF) and international cost benchmarking information. On the basis of this information, the Commission determined that the TSLRIC+ of supplying the MTAS in Australia was likely to fall in the range of 5 − 12 cpm. As a conservative approach, the Commission selected the upper bound of this range (i.e. 12 cpm) for its MTAS Pricing Principles Determination.

Since the release of the MTAS Pricing Principles Determination, both Optus and Vodafone have lodged ordinary access undertakings with the Commission proposing

[1] The EPMU rule is a means of recovering fixed and common costs through the addition of a mark-up on top of incremental costs. The costs to be recovered are allocated across a range of services so that each service is allocated the same mark up as a percentage of its incremental cost.

supply of a subset of the declared MTAS. In addition, 13 MTAS access disputes have been notified involving both Optus and Vodafone (although two have subsequently been withdrawn).

THE VODAFONE UNDERTAKING

On 23 March 2005, Vodafone submitted an ordinary access undertaking with the Commission in respect of the supply of the 'Mobile Terminating Access Service' (MTAS) on its GSM network (the Undertaking).

The Undertaking proposes the *non-price* and *price* terms and conditions on which Vodafone proposes to supply the MTAS. The *non-price* terms and conditions set out the procedures and other obligations that will govern the relationship between an access seeker and Vodafone in relation to the supply of the MTAS. The *price* terms and conditions (shown in Table 2 below) involve an adjustment path towards a 'target' price of 16.15 cpm from 1 January 2007 onwards.

Table 2: Vodafone's proposed price terms

Period	Usage Charge (cpm)
1 July 2004 – 31 December 2004	21.00
1 January 2005 – 31 December 2005	19.38
1 January 2006 – 31 December 2006	17.77
1 January 2007 – 31 December 2007	16.15
Any subsequent validity periods	16.15

An additional element of the price terms and conditions is Vodafone's proposed 'fixed-to-mobile (FTM) pass-through safeguard'. This requires that (where relevant) an access seeker must reduce its average retail price (excluding GST) for FTM calls which terminate on Vodafone's GSM network, for each validity period, according to an adjustment path set out by Vodafone which is shown in Table 3 below.

Table 3: Vodafone's proposed adjustment path for retail FTM prices

Period	Target average retail FTM price (cpm)
1 July 2004 to 31 December 2004	38.50
1 January 2005 to 31 December 2005	32.72
1 January 2006 to 31 December 2006	26.93
1 January 2007 to 30 June 2007	21.15
Any subsequent validity periods	21.15

Where an access seeker fails to comply with the FTM pass-through safeguard for a validity period, the access seeker must pay Vodafone a 'Pass Through Rebate'.

BASIS FOR 16.15 CPM TARGET PRICE

In support of its Undertaking, Vodafone has provided a primary submission, a 'weighted average cost of capital' (WACC) report, and a proposed 'Services Agreement' setting out the non-price terms and conditions of the Undertaking. In addition, Vodafone has submitted six reports prepared on its behalf by expert economic consultants (two by PwC and four by Frontier), as well as a further submission it has prepared in response to Hutchison's submission on the Undertaking.

Notwithstanding the number of submissions, and the analysis contained therein, the Commission notes that the 'target' price of 16.15 cpm shown in Table 2 above is based on one of these expert's reports only – namely, the model prepared on Vodafone's behalf by PwC (the PwC model).

The PwC model

The PwC model is a 'fully allocated top-down cost model' which estimates that the 'forward-looking efficient economic costs' of Vodafone supplying the MTAS is 16.15 cpm based on Vodafone's 2002-03 data.

Based on this model, Vodafone submits that 16.15 cpm is a 'robust' and 'conservative' estimate of the forward-looking efficient economic costs of supplying the MTAS on Vodafone's network, and applies this 'target' price from 1 January 2007 onwards in its Undertaking price terms.[2]

The Frontier model

In addition to the PwC model, Vodafone also submitted a report prepared by Frontier Economics (Frontier). The 'Frontier model' estimates that the 'welfare-maximising' level of MTAS charges lies between 22.32 cpm and 32.73 cpm, depending on certain assumptions.[3]

Notably, as opposed to PwC's estimate, Frontier's 'welfare-maximising' prices contain a mark-up on the 'long-run incremental cost' (LRIC) of the MTAS to effect the recovery of Vodafone's 'fixed and common costs' (FCCs) based on Ramsey-Boiteux (R-B) principles, and to include a 'network externality surcharge' (NES) on the MTAS.[4]

Importantly though, Vodafone has chosen not to adopt the Frontier model outputs for the purposes of determining its Undertaking price terms.[5]

---

2 On 28 October 2005, Vodafone submitted a report by PwC in relation to a 're-run' of the PwC model incorporating data for 2003-04. The 're-run' PwC model also corrects a number of errors in the original PwC model that were detected by submitters and the Commission. Due to its late submission (i.e. approximately seven months after the Undertaking was submitted), the Commission's ability to place weight on this material for its draft decision has been limited, owing to the limited time available the Commission and its consultants to thoroughly assess the material. The Commission has retained Analysys Consulting Ltd (Analysys) to assess and advise on the 2003-04 PwC model 're-run'. Analysys's final report will provide input to the Commission's full discussion/consideration of the 're-run' model in its final decision on the Vodafone Undertaking.

3 Specifically, this depends on the assumption made about the magnitude of Vodafone's 'fixed and common' costs (FCCs), and the relative own-price elasticities of demand for 'mobile subscription', 'mobile outgoing' and 'fixed-to-mobile' (FTM) services. In this regard, Frontier provides six different modelling scenarios which give rise to the range listed above.

4 In this respect, the Frontier estimates are analogous to the 'welfare-maximising' price for the MTAS proposed by Optus (17.0 cpm) for 2004-05) in support of its Undertaking.

5 Vodafone states that this is because it 'wishes to ensure an orderly and timely assessment of the Undertaking by the Commission' and its view that 'the Commission appears to be vigorously opposed to considering or including either mark-up to the point of having pre-determined its position'. However, Vodafone submits that it 'reserves the right to review is position if given the opportunity to present its case on appeal'.

ASSESSMENT OF THE VODAFONE MATERIAL

Release of Discussion paper

On 13 April 2005, the Commission released a Discussion Paper seeking feedback from interested parties on the Undertaking and the supporting material (large sections of which were confidential).

In response to the Commission's deadline of 17 August 2005, the Commission received submissions from five interested parties – Telstra, Hutchison, AAPT, Optus and the Competitive Carriers Coalition (the CCC). Many of these submissions also contained detailed (and multiple) attachments which were prepared by external consultants. The Commission further notes that nine submissions were received after the Commission's deadline – five of which were submitted by Vodafone.

Engagement of consultants

In order to assist the Commission's assessment of Vodafone's supporting material, the Commission engaged two expert economic consultants:

- Analysys Consulting Ltd (Analysys) was engaged on 11 July 2005 to assess the reasonableness of Vodafone's estimate of Vodafone's forward-looking efficient economic cost of supplying the MTAS. Analysys provided a final report on 24 November 2005; and
- WIK Consult (WIK) was engaged on 5 July 2005 to assess the report prepared on Vodafone's behalf by Frontier Economics (and the report prepared by Charles River Associates on Optus's behalf). WIK provided a final report on 4 November 2005.

Public versions of both reports are available on the Commission's website.

Assessment of Vodafone's 16.15 cpm 'target' price

After consideration of the Vodafone material, submissions from interested parties and the report prepared by Analysys, the Commission has reached a view that it has significant concerns with Vodafone's proposed 'target' price of 16.15 cpm.

Specifically, the Commission considers that the conceptual approach adopted by PwC – which includes employing a 'fully-allocated top-down model' based on Vodafone's 2002-03 data and GSM network – is likely to overstate the 'forward-looking efficient costs' of supplying the MTAS in the period to which Vodafone's 'target' price relates. However, even if PwC's conceptual approach was accepted, the Commission has concerns with the inputs and assumptions which underpin the PwC model, and has also identified errors in some of the PwC model calculations. These concerns and errors suggest that 16.15 cpm is likely to significantly overstate Vodafone's 'forward-looking efficient economic costs' of supplying the MTAS on its GSM network.

Assessment of Vodafone's 'pass-through safeguard'

After consideration of Vodafone's proposed 'pass-through safeguard' the Commission has concluded that this mechanism is not necessary, given the likelihood that the pass-through of lower regulated MTAS rates to retail FTM prices will occur, and is likely to increase over time, as a result of a regulated reduction in the MTAS rate alone.

The Commission also believes that, given the nature of the market within which FTM services are provided, the extent of 'price' pass-through is not the only measure of the

extent to which a lower price for the MTAS promotes competition in that market or the LTIE more generally. In this respect, the Commission notes that a reduction in the MTAS rate may promote competition and encourage efficiency by putting in place the pre-conditions for improved competition and efficient use of and investment in infrastructure. This may result in, for example, improvements in the quality of services provided or reductions in the price of other services provided in the bundle of pre-selected fixed line services (i.e. long distance or international call services.

Further, given the market within which FTM services are typically provided (i.e. bundled with other fixed-line services), the Commission believes a more appropriate mechanism to ensure reductions in the MTAS rate are passed through to end-users would be one that is applied to a broad-based basket of services that are supplied within the one market and may be more appropriately exercised at the downstream level in the form of a price control mechanism.

Finally, irrespective of these issues, the Commission has significant reservations regarding the implementation of the specific pass-through safeguard proposed by Vodafone.

LEGISLATIVE TEST FOR AN UNDERTAKING

The Commission's consideration of an ordinary access undertaking comes down to an 'accept' or 'reject' decision.

Section 152BV(2) of the Act outlines that the Commission must not accept the Undertaking unless it is satisfied of a number of matters. This includes that the Commission must be satisfied that the Undertaking:

- is consistent with the standard access obligations (SAOs) set out in section 152AR of the Act;
- expires within three-years after the Undertaking comes into operation; and
- contains terms and conditions which are 'reasonable'.

The Commission's assessment against each of these matters is outlined in turn below.

Is the Undertaking consistent with the SAOs?

The Commission believes that the Undertaking is consistent with the applicable SAOs under section 152AR of the Act.

In making this assessment, the Commission notes that the Undertaking contains a non-discrimination clause which essentially provides that Vodafone will treat the access seeker on a non-discriminatory basis. This will include, but will not be limited to, taking all reasonable steps to ensure the technical and operational quality of the Vodafone MTAS supplied to the access seeker is equivalent to that which Vodafone provides itself. Further, Vodafone will take all reasonable steps to ensure the access seeker receives, in relation to Vodafone, fault detection handling and rectification of a technical and operational quality and timing equivalent to that which Vodafone provides to itself.

A full assessment of whether the Undertaking is consistent with the relevant SAOs is included in Chapter 10 of this report.

Does the Undertaking expire within the required timeframe?

The Commission believes that the Undertaking satisfies the requirement under section 152BV(2)(e) of the Act that its expiry must occur within three years of the date on

which the Undertaking comes into operation. In this regard, the Commission notes that the Undertaking takes legal effect immediately after it is accepted by the Commission and continues for three years from acceptance, withdrawal or termination of the Undertaking by Vodafone in accordance with the Act.

Are the Undertaking terms and conditions reasonable?

In determining whether particular terms and conditions are 'reasonable' under section 152AH of the Act, the Commission must have regard to:

- whether the terms and conditions promote the long-term interests of end-users (LTIE);
- Vodafone's legitimate business interests;
- the interests of persons who have rights to use the declared service;
- the direct costs of providing access to the declared service;
- the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or a facility; and
- the economically efficient operation of a carriage service, a telecommunications network or a facility**.**

Future with or without test

In considering the matters under section 152AH(1), the Commission has applied the 'future with or without test'. This is because the Commission considers the test to be a useful analytical tool for assessing the matters to which the Commission must have regard, particularly where the proposed terms and conditions will apply over a three year period.

This test, however, is relevant to some, but not all, of the above criteria and therefore is only applied where the test facilitates the Commission's analysis. While the 'with or without test' can facilitate the Commission's assessment of the Undertaking, ultimately, the test that the Commission must apply is that under section 152BV(2)(d) of the Act, which requires that in order to accept the Undertaking, the Commission must be satisfied as to the 'reasonableness' of the terms and conditions in the Undertaking.

The 'with' scenario is the terms and conditions contained in the Undertaking that would apply if the Commission accepted the Undertaking. The 'without' scenario is the terms and conditions that would be likely to apply if the Commission rejected the Undertaking. In this regard, some of the analysis in Chapters 7 and 8 of this report is conducted on the basis that, if the Undertaking were rejected, all procedures and protections provided for in Part XIC of the Act in respect of declared services will be available to access seekers who wish to acquire the MTAS from Vodafone.

In addition to the rights conferred under section 152AR of the Act, access seekers will be able to seek a binding resolution by the Commission to any disputes they may have with Vodafone regarding access to the MTAS on Vodafone's mobile telephony network(s). This is available under Division 8 of Part XIC of the Act, which gives the Commission power to arbitrate access disputes. Under Division 8, the Commission

must make a final determination on any matter relating to access by the access seeker to the declared service, which binds both parties to the dispute.[6]

Assessment of the price terms

As noted above, the Commission has significant concerns with Vodafone's estimate of the 'forward-looking efficient economic costs' of providing the MTAS of 16.15 cpm at both a conceptual and empirical level.

Without pre-judging the outcomes of any arbitrations, on the basis of the information before it at this time and based on the analysis contained in Chapter 5 of this report, the Commission believes it would be reasonable to assume that, if it were to make a final determination in an arbitration in the absence of accepting the Undertaking, it would likely set lower prices than those contained in the Undertaking.

In light of this, the Commission also believes it is unlikely that other access seekers that have not currently notified the Commission of an access dispute in relation to the supply of the MTAS by Vodafone would settle for price terms and conditions consistent with those in the Undertaking in commercial negotiations.

Following on from this, the Commission believes that the price terms and conditions contained in the Undertaking are not 'reasonable' when assessed against the relevant statutory criteria in section 152AH of the Act. The Commission's conclusions with respect to each element of the criteria relating to 'reasonableness' are listed below:

- *LTIE*: acceptance of the Undertaking would not promote the LTIE, because, when contrasted with what may occur in the absence of the Undertaking (i.e. the 'without' scenario), the Commission considers that the Undertaking would not promote competition in markets for listed services and/or encourage the economically efficient use of, and investment in the infrastructure for telecommunications services and may possibly compromise the achievement of any-to-any connectivity.
- *Legitimate business interests*: the Commission has formed the view that the Undertaking price terms and conditions, which include an adjustment path towards a target price of 16.15 cpm, are above those required to meet the legitimate business interests of Vodafone and its investment in facilities used to supply the MTAS. Further, the Commission believes that even if 16.15 cpm was an appropriate price for the MTAS in the long term (i.e. 2006-07 and beyond), it would not be necessary for the adjustment path towards that price to be as slow, and involve as many steps, as that specified in the price terms and conditions in the Undertaking. Rather, the Commission believes that Vodafone's legitimate business interests would still be preserved if price reductions for the MTAS were larger than those proposed by Vodafone such that 16.15 cpm was reached earlier than 1 January 2007, as proposed in the Undertaking.

---

[6] In this regard, the Commission notes that it is currently arbitrating access disputes between Optus and four access seekers (Hutchison, PowerTel, AAPT and Telstra). Alternatively, other access seekers may continue to seek to determine terms and conditions of access via commercial negotiation without recourse

- *Interests of persons who have rights to use Vodafone's MTAS service*: The Commission considers that a price for the MTAS equal to the TSLRIC+ of providing the service would be more likely to be in the interests of persons that have a right to use the declared service and, for the reasons set out in Chapter 5 of this report, the pricing options contained in the Undertaking represent pricing options are inconsistent with the TSLRIC+ of providing the MTAS. Further, the Commission believes the pass-through safeguard proposed by Vodafone is not in the interests of persons who have a right to use the declared service. In particular, the Commission believes that more efficient pricing structures are likely to be implemented in the market within which FTM services in the absence of the pass-through safeguard, given the broader nature of the market within which FTM services are provided (i.e. the pre-select bundle of fixed-line services).
- *Direct costs*: as noted above, the Commission has concerns with the PwC model which leads it to believe that it is likely to substantially overstate Vodafone's direct costs of providing the MTAS in the period to which the Undertaking target price applies. In support of this view, the Commission notes that the cost estimates provided by Vodafone are significantly above the analogous cost estimate that can be derived from Optus's MTAS model (i.e. c-i-c cpm). Although it might be reasonable to expect that Optus has a cost advantage over Vodafone due to scale and/or scope economies, the fact that Vodafone's estimate is almost c-i-c Optus's lends weight to the view that the PwC model overstates Vodafone's direct costs. The Commission further notes that the Pass Through Rebate payable by an access seeker for failing to comply with the pass-through safeguard does not appear to be related to the direct costs of providing the MTAS.

The Commission has also considered the 'operational and technical requirements' necessary for the safe and reliable operation of the service and the economically efficient operation of the service.

In conclusion, the Commission is of the view that the price terms and conditions in the Undertaking are not reasonable. Full details of the Commission's assessment against these criteria can be found in Chapter 7 of this report.

Assessment of the non-price terms and conditions

In relation to the non-price terms and conditions in the Undertaking, the Commission has certain concerns with some of the conditions that have been specified by Vodafone. The main area of concern surrounds the broad nature of some of the discretions given to Vodafone. These discretions are based on the subjective assessments of Vodafone and generally apply in the important areas of creditworthiness, suspension and termination of services. Further, there are some issues of concern in relation to the confidentiality provisions and the network conditioning charge arrangements.

The Commission's overall assessment of the non-price terms and conditions is that they tend to seek to protect the legitimate business interests of the access provider more so than what might be considered reasonably necessary. As such, the proposed non-price terms and conditions do not provide the certainty and balance that the Commission believes should be reflected in an ordinary access undertaking.

Full details of the Commission's assessment against these criteria can be found in Chapter 8 of this report.

Conclusion as to reasonableness of the Undertaking

After detailed consideration of the price and non-price terms and conditions contained in Vodafone's Undertaking, the Commission has reached the view that the price terms and conditions are not reasonable, and that there are number of non-price terms and conditions that cause the Commission some concern. Accordingly, the Commission is not satisfied that the terms and conditions specified in the Undertaking are reasonable.

CONCLUSION

Pursuant to section 152BV(2)(a)(i)(ii) of the Act, the Commission has published the Undertaking and invited submissions on it. Further, the submissions received within the time limit specified by the Commission in forming its views on the Undertaking have been considered.

Pursuant to section 152BV(2)(b) of the Act, the Commission is of the view that the Undertaking is consistent with the SAOs that are applicable to Vodafone.

Pursuant to section 152BV(2)(d) of the Act, the Commission is of the view that the terms and conditions specified in the Undertaking are **not** reasonable for the reasons outlined above.

Pursuant to section 152BV(2)(e) of the Act, the Commission notes that the expiry time of the Undertaking occurs within three years of the date on which the Undertaking comes into operation.

Accordingly, as the Commission is not satisfied that the terms and conditions in the Undertaking are reasonable, the Commission's draft decision is that the Undertaking be rejected.

1. Introduction

Vodafone Network Pty Ltd and Vodafone Australia Ltd (together Vodafone) lodged an ordinary access undertaking (the Undertaking), pursuant to Division 5 Part XIC of the *Trade Practices Act 1974* (the Act) with the Australian Competition and Consumer Commission (the Commission) on 23 March 2005.[7] The Undertaking specifies certain price and non-price terms and conditions upon which Vodafone proposes to supply access to the 'mobile terminating access service' (MTAS) on its GSM network in accordance with the applicable standard access obligations (SAOs) under part XIC of the Act.

The Undertaking relates to a subset of the MTAS, which was declared by the Commission pursuant to section 152AL of the Act on 30 June 2004.[8] It specifies the non-price and price terms and conditions under which Vodafone proposes to supply this service.

The Undertaking price terms and conditions (shown in Table 1.1 below) involve an adjustment path towards a 'target' price of 16.15 cents per minute (cpm) from 1 January 2007 onwards.

Table 1.1: Vodafone's proposed price terms

Period	Usage Charge (cpm)
1 July 2004 – 31 December 2004	21.00
1 January 2005 – 31 December 2005	19.38
1 January 2006 – 31 December 2006	17.77
1 January 2007 – 31 December 2007	16.15
Any subsequent validity periods	16.15

Notably, the proposed terms and conditions differ from the Commission's indicative prices for the MTAS which are based on a 'target' price of 12 cpm.

The Undertaking also includes a fixed-to-mobile (FTM) pass-through safeguard (the pass-through safeguard). The pass-through safeguard requires that, as a pre-condition to an access seeker receiving Vodafone's proposed lower prices for the MTAS, an access seeker must reduce the prices they charge end-users for FTM calls to at least the prices specified in a FTM adjustment path included in the Undertaking. The proposed adjustment path for retail FTM prices is shown in Table 1.2 below.

---

[7] Vodafone previously lodged an ordinary access undertaking in relation to the MTAS on 26 November 2004, but following changes to its calculations of usage charges for the service, it withdrew that Undertaking and submitted a new one. This draft decision relates solely to Vodafone's revised Undertaking of 23 March 2005.

[8] That is, the Undertaking relates only to termination of voice calls on Vodafone's GSM network. It does not relate to the termination of voice calls on Vodafone's emerging third-generation (3G) Wideband Code Division Multiple Access network.

Table 1.2: Vodafone's proposed adjustment path for retail FTM prices

Period	Target average retail FTM price (cpm)
1 July 2004 to 31 December 2004	38.50
1 January 2005 to 31 December 2005	32.72
1 January 2006 to 31 December 2006	26.93
1 January 2007 to 30 June 2007	21.15
Any subsequent validity periods	21.15

The Commission's task is to assess whether to accept or reject the Undertaking based on the relevant statutory criteria in part XIC of the Act. The Commission has a six- month statutory timeframe to make its decision.

On 14 April 2005, the Commission issued a Discussion Paper seeking the views of interested parties on the terms and conditions of the Vodafone Undertaking, and the supporting submissions. In response, the Commission received submissions from five interested parties. Some of these submissions contained multiple (and detailed) attachments. A list of the submissions (and attachments) received is at Appendix 1.

This report (the Draft Decision) details the Commission's draft decision to reject the Undertaking submitted by Vodafone and the reasons for it reaching this decision.

1.1. Making submissions

The Commission is seeking submissions from interested parties in relation to this draft decision. The closing date for submissions is 5:00pm (Eastern Daylight Saving Time) 19 January 2005. Any submissions or enquiries in relation to this Draft Decision should be directed to:

Ms Nicole Hardy
Acting Director – Regulatory
Telecommunications
Australian Competition and Consumer Commission
GPO Box 520
MELBOURNE VIC 3000
Email: Nicole.Hardy@accc.gov.au
Fax: (03) 9663 3699

Where submissions contain confidential information, this should be clearly indicated. Non-confidential and confidential versions of submissions should be provided.

1.2. Structure of this report

The remainder of the Draft Report is structured as follows:

- **Chapter 2** provides background on the declaration and the dispute resolution framework set out in the Act. It also contains a summary of the Commission's MTAS Final Report and the MTAS Pricing Principles Determination;
- **Chapter 3** sets out the relevant legislative framework that the Commission is required to work within when assessing an undertaking;

- **Chapter 4** summarises the price and non-price terms and conditions contained in the Undertaking and the supporting material provided by Vodafone;
- **Chapter 5** discusses the empirical cost estimates provided by Vodafone which are based on the PricewaterhouseCoopers (PwC) Report *The Fully Allocated Cost (FAC) of services on Vodafone Australia's GSM network* (Appendix I to the Vodafone Undertaking);
- **Chapter 6** discusses Vodafone's proposed pass-through safeguard;
- **Chapter 7** assesses the reasonableness of the *price* terms and conditions of the Undertaking;
- **Chapter 8** assesses the reasonableness of the *non-price* terms and conditions of the Undertaking;
- **Chapter 9** provides the Commission's overall conclusion on the reasonableness of the terms and conditions proposed by Vodafone
- Chapter 10 assesses the consistency of the Undertaking terms and conditions with the SAOs set out in the Act;
- **Chapter 11** contains the Commission's decision on the Undertaking;
- **Appendix 1** lists the submissions received by the Commission in response to the Discussion paper; and
- **Appendix 2** discusses the Frontier Economics Report *Modelling welfare maximising mobile termination rates* (Appendix III to the Vodafone Undertaking);
- **Appendix 3** contains an explanation of the principles of Ramsey-Boiteux pricing;
- **Appendix 4** outlines the some of the relevant externalities in telecommunications; and
- **Appendix 5** contains discussion of the so-called 'waterbed effect'.

2. Background

2.1. Declaration and the dispute resolution framework

Part XIC of the Act establishes a regime for governing access to certain declared carriage services in the telecommunications industry. Once a service is declared by the Commission, carriers and carriage service providers (CSPs) supplying the declared service to themselves, or others, are subject to the applicable SAOs. These obligations constrain the manner in which those carriers and CSPs can conduct themselves in relation to supply of the declared service.

Section 152AR of the Act sets out the SAOs that apply to those carriers and CSPs who supply a declared service to themselves or to others. In summary, if requested by a service provider (that is, an access seeker), a carrier/CSP is required to:

- supply the declared service;
- take all reasonable steps to ensure that the declared service supplied to the access seeker is of equivalent technical and operational quality as that which the carrier/CSP is supplying to itself;
- take all reasonable steps to ensure that the fault detection, handling and rectification which the access seeker receives in relation to the declared service is of equivalent technical and operational quality as that provided by the carrier/CSP to itself;
- permit interconnection of its facilities with those of the access seeker; and
- provide particular billing information to the access seeker.[9]

The terms and conditions upon which a carrier or CSP is to comply with these obligations are as agreed between the parties. In the event that they cannot agree, one of them can notify the Commission of an access dispute under section 152CM of the Act. Once notified, the Commission can arbitrate and make a determination to resolve the dispute. The Commission's determination need not, however, be limited to the matters specified in the dispute notification. It can deal with any matter relating to access by the service provider to the declared service.[10]

The Act enables a carrier or CSP to meet its access obligations and resolve potentially contentious issues outside the arbitral process. It can do this by giving the Commission an access undertaking setting out the terms and conditions on which it proposes to comply with particular SAOs.

If accepted by the Commission, the undertaking becomes binding on the carrier or CSP. If a carrier or CSP breaches the undertaking, the Federal Court can make an order requiring compliance with the undertaking, the payment of compensation, or any other order that it thinks fit.[11]

---

[9] There are some exceptions to these obligations. These are set out in section 152AR of the Act, and in any exemption issued under section 152AS or 152AT of the Act.

[10] Section 152CP(2) of the Act.

[11] Section 152CD of the Act.

In accepting an undertaking, however, the Commission limits its ability to arbitrate access disputes. This is because once an undertaking is in operation, the Commission cannot make an arbitral determination that is inconsistent with the undertaking.[12]

2.2. The declared service (MTAS)

On 30 June 2004, the Commission decided to allow the existing GSM and CDMA terminating access service declaration to expire, and replaced it with a new declaration under section 152AL of the Act. The new declaration provided an amended description of the mobile terminating access service (or 'MTAS') by adopting a technology neutral approach that included voice services terminating on all digital mobile networks (i.e. GSM, CDMA and third generation or '3G').

The MTAS is a wholesale input, used by providers of calls from fixed-line and mobile networks, in order to complete calls to mobile subscribers connected to other networks.

When a mobile call is made between consumers (or end-users), it will involve two essential elements – 'origination' and 'termination'. Origination refers to the carriage of a call from the end-user who makes, or originates, the call over the network to which this end-user is connected. Termination refers to the carriage of the call to the person receiving the call over the network on which the person receiving the call is connected. Where the person making the call and the person receiving the call are on different networks, a point of interconnection (POI) between these two networks will exist. The main network elements of providing a termination service are illustrated in Figure 2.1 below.

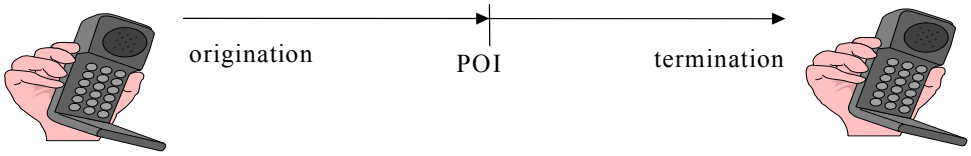


Figure 2.1 – Termination, origination and the POI

Under current commercial arrangements between network owners, the network owner that originates a call to a mobile network will, generally, purchase termination from the network owner that completes the call. The originating network owner will recover these costs, and the costs it incurs from originating the call, through the retail price it charges its directly connected end-user for providing the call. This commercial arrangement is sometimes referred to as the 'calling party pays' (CPP) model.

An example of how the MTAS is used in the provision of a fixed-to-mobile (FTM) call is depicted in Figure 2.2 below. In this example, Telstra purchases access to Optus's MTAS in order to provide a call from a Telstra fixed-line end-user to an

[12] See section 152CQ(5) of the Act.

Optus mobile end-user. Telstra would then bill its directly-connected consumer for providing a FTM call service.

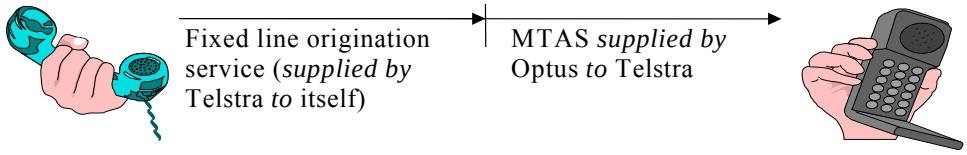


Figure 2.2 - Use of the MTAS to supply a fixed-to-mobile call

The MTAS is therefore an essential input into the provision of calls to mobile phone users where the mobile phone user is on a different network to the individual who originates the call. This is the case irrespective of whether the call terminates on a second generation (2G) GSM or CDMA network, a 2.5G or 3G mobile networks.[13]

2.3. The Commission's Pricing Principles Determination

On 30 June 2004, as required under section 152AQA of the Act, the Commission also released pricing principles for the MTAS (the MTAS Pricing Principles Determination). The MTAS Pricing Principles Determination stipulates that the price of the MTAS should follow an adjustment path such that there is a closer association of the price and underlying cost of the service. In this context, the Commission determined that its preferred cost principle was the 'total service long-run incremental cost' (TSLRIC) of supplying this service plus a mark-up ('+') for the recovery of organisational-level costs based on the equi-proportionate mark-up (EPMU) approach. This was termed a 'TSLRIC+' approach.

Based on the available information at that time, the Commission determined that the TSLRIC+ of supplying the MTAS in Australia was likely fall in the range of 5−12 cpm. As a conservative approach, the Commission selected the upper bound of this range (i.e. 12 cpm) for its MTAS Pricing Principles Determination. Moreover, to protect the legitimate business interests of access providers of the MTAS, the Commission determined a three-year adjustment path to this target price of 12 cpm. The Commission's indicative price related terms and conditions for the MTAS are included in Table 2.1 below.

---

[13] 2G protocols use digital encoding and include GSM and CDMA. 2G networks support high bit rate voice and limited data communications. They are capable of offering auxiliary services such as data, fax and the short messaging service (SMS). 2.5G protocols extend 2G systems to provide additional features, such as packet-switched connection and enhanced data rates. 3G protocols support much higher data rates, measured in megabits per second, intended for applications such as full-motion video, video conferencing and full Internet access.

Table 2.1: Price related terms and conditions in the MTAS Pricing Principles Determination

Time period	Price related terms and conditions (cpm)
I July 2004 – 31 December 2004	21
1 January 2005 – 31 December 2005	18
1 January 2006 – 31 December 2006	15
1 January 2007 – 30 June 2007	12

The Commission noted at the time of its release that the MTAS Pricing Principles Determination (and the price related terms and conditions) was not binding in the event of consideration by the Commission of an access undertaking or arbitration of an access dispute. Rather, the Commission indicated that were it required to make an arbitral determination, or consider an undertaking provided to it in relation to the MTAS, a party may argue against the application of the pricing principles and the indicative price related terms and conditions. In these circumstances, the Commission has indicated that it would have regard to the particular circumstances and the information provided to it at that point in time.

3. Legislative criteria for assessment of an undertaking[14]

This chapter sets out the form and contents that an undertaking is required to take/have before it is assessed by the Commission, the criteria that must be applied in assessing an undertaking, and the procedural matters that apply.

3.1. Form and contents of an undertaking

Section 152BS of the Act provides that an ordinary access undertaking (access undertaking) is a written undertaking given by the relevant carrier or CSP to the Commission under which the carrier or CSP undertakes to comply with the terms and conditions specified in the undertaking in relation to the applicable SAOs. Importantly, however, an undertaking need not specify all the terms and conditions on which the carrier or CSP proposes to supply the declared service.[15]

An undertaking may take one of the following forms:

- an undertaking containing terms and conditions that are specified in the undertaking; or
- an undertaking where the terms and conditions are specified by adopting a set of model terms and conditions set out in the telecommunications access code, as may be in force from time to time.[16]

However, an access undertaking must not adopt a combination of these methods.

The Commission notes that the Undertaking submitted by Vodafone falls within the first category of undertaking.

3.2. Criteria for assessing an undertaking

Section 152BV(2) of the Act sets out the matters of which the Commission must be satisfied of before it can accept an undertaking. This section applies where an access undertaking is given to the Commission that *does not* adopt a set of model terms and conditions set out in the telecommunications access code. As noted above, the Undertaking falls within this category of undertaking.

In this regard, section 152BV(2) of the act specifies that:

> The Commission must not accept the undertaking unless:
>
> (a) the Commission has:
>
> (i) published the undertaking and invited people to make submissions to the Commission on the undertaking; and
>
> (ii) considered any submissions that were received within the time limit specified by the Commission when it published the undertaking; and

---

[14] There are 2 types of undertaking available under Part XIC – a 'special access undertaking' under section 152CBA and an 'ordinary access undertaking' under section 152BV. Vodafone submitted an 'ordinary access undertaking'. The use of the words 'access undertaking' or 'undertaking' in this decision refers to an 'ordinary access undertaking' under section 152BV of the Act.

[15] See Note to section 152BS and section 152AY(2)(b)(ii)

[16] Section 152BS(3) and (4) of the Act.

(b) the Commission is satisfied that the undertaking is consistent with the standard access obligations that are applicable to the carrier or provider; and

(c) if the undertaking deals with a price or a method of ascertaining a price – the Commission is satisfied that the undertaking is consistent with any Ministerial pricing determination; and

(d) the Commission is satisfied that the terms and conditions specified in the undertaking are reasonable; and

(e) the expiry time of the undertaking occurs within 3 years after the date on which the undertaking comes into operation.

The approach of the Commission to assessing each of these matters is considered in turn below.

3.2.1. Public process

Section 152BV(2)(a)(i) and (ii) of the Act require the Commission to publish the undertaking, invite submissions on it and consider any submissions that were received in response to it. On 13 April 2005, the Commission published the Vodafone Undertaking submission, and public versions of the supporting submissions on its website. On the same date, the Commission released a Discussion Paper in relation to the Undertaking and sought interested parties' views on the Undertaking and the supporting submissions. In response, the Commission received submissions from five interested parties. Many of these submissions include multiple appendices. A list of the submissions received is at Appendix 1 to this report.

3.2.2. Consistency with the standard access obligations

Section 152BV(2)(b) of the Act provides that the Commission must not accept an undertaking unless the Commission is satisfied that it is consistent with the SAOs that are applicable to the carrier or provider.

The SAOs are set out in section 152AR of the Act. In summary, if requested by a service provider, an access provider is required to:

- supply an active declared service to the service provider in order that the service provider can provide carriage and/or content services;
- take all reasonable steps to ensure that the technical and operational quality of the service supplied to the service provider is equivalent to that which the access provider is supplying to itself;
- take all reasonable steps to ensure that the service provider receives, in relation to the active declared service supplied to the service provider, fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which the access provider provides to itself;
- permit interconnection of its facilities with the facilities of the service provider for the purpose of enabling the service provider to be supplied with active declared services in order that the service provider can provide carriage and/or content services;
- take all reasonable steps to ensure that the technical operational quality and timing of the interconnection is equivalent to that which the access provider provides to itself;

- if a standard is in force under section 384 of the *Telecommunications Act 1997*, take all reasonable steps to ensure that the interconnection complies with the standard;
- take all reasonable steps to ensure that the service provider receives interconnection fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which the access provider provides to itself;
- provide particular billing information to the service provider; and
- supply additional services in circumstances where a declared service is supplied by means of conditional-access customer equipment.

The assessment of whether the Undertaking is consistent with the applicable SAOs is considered in Chapter 10 of this report.

3.2.3. Consistency with Ministerial Pricing Determination

Division 6 of Part XIC of the Act provides that the Minister may make a written determination setting out the principles dealing with price-related terms and conditions relating to the SAOs.[17]

Section 152BV(2)(c) of the Act provides that the Commission must not accept an undertaking dealing with price or a method of ascertaining price unless the undertaking is consistent with any Ministerial Pricing Determination.

To date, a Ministerial Pricing Determination has not been made in relation to the MTAS. Accordingly, the Commission is not required to assess the Undertaking under this criterion.

3.2.4. Whether the terms and conditions are reasonable

Section 152BV(2)(d) of the Act provides that the Commission must not accept an undertaking unless the Commission is satisfied that the terms and conditions specified in the undertaking are reasonable.

In determining whether the terms and conditions are reasonable, the Commission must have regard to the range of matters set out in section 152AH(1) of the Act. In the context of assessing the Undertaking these are:

- whether the terms and conditions promote the long-term interests of end-users (LTIE) of carriage services or of services supplied by means of carriage services;
- the legitimate business interests of Vodafone, and its investment in facilities used to supply the declared service;
- the interests of all persons who have rights to use the declared service;
- the direct costs of providing access to the declared service;
- the operational and technical requirements necessary for the safe and reliable operation of a carriage service, a telecommunications network or facility; and

[17] Section 152CH of the Act. 'Price-related terms and conditions' means terms and conditions relating to price or a method of ascertaining price.

- the economically efficient operation of a carriage service, a telecommunications network or a facility.

In addition, the Commission may consider any other relevant matter.[18]

Set out below is a summary of the key phrases and words used in the above matters. It should be noted that only some of the criteria have been considered judicially and in other contexts. Accordingly, in taking these matters into account, it is necessary for the Commission to form its own view as to what they mean.

Long-term interests of end-users (LTIE)

The Commission has published a guideline explaining what it understands by the phrase 'long-term interests of end-users' in the context of its declaration responsibilities.[19] The Commission considers that a similar interpretation would seem to be appropriate in the context of assessing an undertaking.

In the Commission's view, particular terms and conditions promote the interests of end-users if they are likely to contribute towards the provision of goods and services at lower prices, higher quality, or towards the provision of greater diversity of goods and services.[20]

To consider the likely impact of particular terms and conditions, the Act requires the Commission to have regard to whether the terms and conditions are likely to result in the achievement of the following objectives:

- the objective of promoting competition in markets for carriage services and services supplied by means of carriage services;
- for carriage services involving communications between end-users, the objective of achieving any-to-any connectivity; and
- the objective of encouraging the economically efficient use of, and economically efficient investment in:
    - the infrastructure by which listed carriage services are supplied; and
    - any other infrastructure by which listed services are, or are likely to become, capable of being supplied.[21]

In the Commission's view, the phrase 'economically efficient use of, and economically efficient investment in ... infrastructure' refers to the concept of economic efficiency. This concept consists of three components:

- *Productive efficiency* – This is achieved where individual firms produce the goods and services that they offer at least cost;

---

18 Section 152AH of the Act does not use the expression 'any other relevant matter'. Rather, section 152AH(2) of the Act states that the matters listed in section 152AH(1) of the Act do not limit the matters to which the Commission may have regard. Thus, the Commission interprets this to mean that it may consider any other relevant matter.

19 Australian Competition and Consumer Commission, *Telecommunications services — Declaration Provisions: A Guide to the Declaration Provisions of Part XIC of the Trade Practices Act*, July 1999.

20 Ibid, pp. 32—33.

21 Section 152AB(2) of the Act.

- *Allocative efficiency* – This is achieved where the prices of resources reflect their underlying costs so that resources are then allocated to their highest valued uses (i.e. those that provided the greatest benefit relative to costs); and
- *Dynamic efficiency* – This reflects the need for industries to make timely changes to technology and products in response to changes in consumer tastes and in productive opportunities.

The Australian Competition Tribunal, in its decision on access to subscription television services, noted in relation to the terms that make up the LTIE that:

> Having regard to the legislation, as well as the guidance provided by the Explanatory Memorandum, it is necessary to take the following matters into account when applying the touchstone – the long-term interests of end-users:
>
> End-users: "end-users include actual and potential (users of the service)
>
> Interests: the interests of the end-users lie in obtaining lower prices (than would otherwise be the case), increased quality of service ad increased diversity and scope of product offerings. This would include access to innovations … in a quicker timeframe than would otherwise be the case
>
> Long-term: the long-term will be the period over which the full effects of the … decision will be felt. This means some years, being sufficient time for all players (being existing and potential competitors…) to adjust to the outcome, make investment decisions and implement growth – as well as entry and/or exit – strategies.[22]

Legitimate business interests and direct costs

The Commission is of the view that the concept of legitimate business interests should be interpreted in a manner consistent with the phrase 'legitimate commercial interests' used elsewhere in Part XIC of the Act. Accordingly, it would cover the carrier/ CSP's interest in earning a normal commercial return on its investment.

This does not, however, extend to receiving compensation for loss of any 'monopoly profits' that occur as a result of increased competition. In this regard, the Explanatory Memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996 states:

> ... the references here to the 'legitimate' business interests of the carrier or carriage service provider and to the 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.[23]

When considering the legitimate business interests of the carrier or CSP in question, the Commission may consider what is necessary to maintain those interests. This can provide a basis for assessing whether particular terms and conditions in the undertaking are necessary (or sufficient) to maintain those interests.

Interests of persons who have rights to use the declared service

Persons who have rights to use a declared service will, in general, use that service as an input to supply carriage services, or a service supplied by means of carriage services, to end-users. In the Commission's view, these persons have an interest in being able to compete for the custom of end-users on the basis of their relative merits.

---

[22] Application by C7 Pty Limited & Seven Network Limited re: Foxtel and Telstra reasons for decision f 23 December 2004 at paragraph 120

[23] Explanatory Memorandum for the *Trade Practices Amendment (Telecommunications) Bill 1996*, p. 44.

Terms and conditions that favour one or more service providers over others and thereby distort the competitive process may prevent this from occurring and consequently harm those interests.

While section 152AH(1)(c) of the Act directs the Commission's attention to those persons who already have rights to use the declared service in question, the Commission can also consider the interests of persons who may wish to use that service. Where appropriate, the interests of these persons may be considered to be 'any other relevant consideration'.

Direct costs

The Commission's Access Pricing Principles note that 'direct costs' are those costs necessarily incurred (caused by) the provision of access. As stated in the Explanatory Memorandum:

> … 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.[24]

The Commission's Access Pricing Principles also note that this requires that the access price should not be inflated to recover any profits the access provider (or any other party) may lose in a dependent market as a result of the provision of access. In particular the Efficient Components Pricing Rule (ECPR) may be inconsistent with this criterion.

Finally, the Commission's Access Pricing Principles notes that this criterion also implies that, at a minimum, an access price should cover the direct incremental costs incurred in providing access. It also implies that the access price should not exceed the 'stand-alone costs of providing the service', where this is defined to mean:

> … costs an access provider will incur in producing a service assuming the access provider produced no other services.[25]

Economically efficient operation of, and investment in, a carriage service

In the Commission's view, the phrase 'economically efficient operation' embodies the concept of economic efficiency set out above. It would not appear to be limited to the operation of carriage services, networks and facilities by the carrier or CSP supplying the declared service, but would seem to include those operated by others (e.g. service providers using the declared service).

To consider this matter in the context of assessing an undertaking, the Commission may consider whether particular terms and conditions enable a carriage service, telecommunications network or facility to be operated in an efficient manner. This may involve, for example, examining whether they allow for the carrier or CSP supplying the declared service to recover the efficient costs of operating and maintaining the infrastructure used to supply the declared service under consideration.

In general, there is likely to be considerable overlap between the matters that the Commission takes into account in considering the LTIE and its consideration of this matter.[26]

---

[24] Explanatory Memorandum for the Trade *Practices Amendment (Telecommunications) Bill 1996*, p. 44.

[25] ACCC, *Access Pricing Principles – Telecommunications: A Guide*, July 1997, p. 10.

3.2.5. Expiry date and Term

Section 152BS(7) of the Act provides that an the undertaking must specify the expiry time of the undertaking. Further, section 152BV(2)(e) provides that the expiry time of the undertaking must be within three years after the date on which the undertaking comes into operation.

The Commission notes that the Undertaking submitted by Vodafone proposes that the terms and conditions would take effect from when the Commission makes a decision to accept the Undertaking, and either:

- any applicable appeal period in relation to the acceptance by the Commission of this Undertaking has expired; or
- if an appeal is lodged, there is a final resolution of that appeal and any subsequent appeals in a way which permits this Undertaking to take effect.

Further, the Undertaking states that it will continue until the earlier of three years from the Commencement Date, the withdrawal or termination of this Undertaking by Vodafone in accordance with the Act or the Commission's acceptance of the Undertaking.

The Commission notes, therefore, that the Undertaking satisfies this criterion.

3.3. Procedural matters

3.3.1. Confidentiality

The Commission recognises that the public consultation and its own decision-making process in relation to the Undertaking should be as transparent as practicable. That said, the Commission is aware if the need to protect certain elements of a provider's information where disclosure of such information may harm that provider's legitimate commercial interests.

The Commission notes, however, that unless it can corroborate commercial-in-confidence information in some way, it is constrained in the weight that it can give to the information. Accordingly, in order to balance the possible harm to a provider from the disclosure of sensitive information and the harm that interested parties may suffer if they are unable to comment on matters affecting their interests, the Commission considers that a more limited form of disclosure of the commercially sensitive information may be appropriate through the use of confidentiality undertakings.

This would allow the confidential information to be disclosed for the purposes of making submissions in this process, but at the same time preserve the confidentiality of the information. On this basis, interested parties should have an opportunity to access confidential information through the use of confidential undertakings.

In certain limited circumstances, in order to allow for confidential information to be independently corroborated, the Commission may supply the information to interested

---

[26] Relevantly, and as noted above, in considering whether particular terms and conditions will promote the LTIE, the Commission must have regard to their likely impact on the economically efficient use of, and the economically efficient investment in, the infrastructure by which listed carriage services are supplied and any other infrastructure by which listed services are, or are likely to become capable of being supplied.

parties so as to allow its scrutiny. Conversely, there may be occasions where the Commission may decide that the disclosure of confidential information in not required.

3.3.2. Statutory decision making period

The Commission has a six-month statutory time frame in which to make a decision to either accept or reject an access undertaking. If the Commission does not make a decision within this six-month statutory timeframe, section 152BU(5) of the Act stipulates that:

> … the Commission is taken to have made, at the end of that 6-month period, a decision under subsection (2) to accept the undertaking.

For the purpose of calculating the six-month time frame, certain periods of time are disregarded. Specifically, section 152BU(6) of the Act states that in calculating the six-month timeframe, the Commission should disregard:

> (a) if the Commission has published the undertaking under paragraph 152BV(2)(a) – a day in the period:
>
> (i) beginning on the date of publication; and
>
> (ii) ending at the end of the time limit specified by the Commission when it published the undertaking; and
>
> (b) if the Commission has requested further information under section 152BT of the Act in relation to the undertaking – a day during any part of which the request, or any part of the request, remains unfulfilled.[27]

Notwithstanding the six-month time limit, and those days which are to be disregarded as outlined above, the Commission notes that section 152BU(7) of the Act states that:

> The Commission may, by written notice given to the carrier or provider, extend or further extend the 6-month period referred to in subsection (5), so long as:
>
> (a) the extension or further extension is for a period of not more than 3 months; and
>
> (b) the notice includes a statement explaining why the Commission has been unable to make a decision on the undertaking within that 6-month period or that 6-month period as previously extended, as the case may be.

The decision-making period in relation to the Undertaking submitted by Vodafone is discussed below.

Calculating the decision-making period for the Undertaking

The Commission received the Undertaking from Vodafone on 23 March 2005.

The Commission has since made three requests for information in relation to the Undertaking under section 152BT of the Act:

- on 5 April 2005, the Commission re-made an earlier information request that related to the first Vodafone Undertaking seeking disaggregation of particular revenue and cost data that Vodafone had submitted to the Commission under the RAF for the financial year ending 31 March 2003. Notwithstanding its

---

[27] In relation to information requests about the undertaking, section 152BT(2) of the Act states that 'the Commission may request the carrier or provider to give the Commission further information about the undertaking, while section 152BU(3) states that 'the Commission may refuse to consider the undertaking until the carrier or provider gives the Commission the information'.

views outlined in a letter dated 12 April 2005, Vodafone provided a response to this information request on 17 November 2005;[28]

- on 17 August 2005, the Commission requested information from Vodafone regarding a number of errors that AAPT had advised the Commission it had found in the cost model generated by PwC on Vodafone's behalf. Although Vodafone has not explicitly provided a response to this information request, on 28 October 2005, Vodafone provided a revised version of the PwC cost model (using 2003-04 financial year data) which corrects the error identified by AAPT;[29] and
- on 3 October 2005, requested clarification on numerous unexplained data inputs and assumptions contained in a report prepared on Vodafone's behalf by PwC. Vodafone provided a response to this information request on 17 October 2005.

Also, on 14 April 2005 the Commission released a Discussion Paper and called for submissions on the Undertaking. The Discussion Paper set a closing date for submissions six weeks after Vodafone made relevant information 'reasonably available' for industry assessment. The reason for stipulating the public consultation period in this manner was because significant portions of Vodafone's supporting submissions were claimed to be 'commercial-in-confidence'. Therefore, this information was only available to interested parties subject to the provision of confidentiality undertakings.

On 29 June 2005, the Commission wrote to Vodafone and interested parties indicating that it believed that Vodafone's confidential information had not yet been made reasonably available. In that letter the Commission gave Vodafone until 6 July 2005 to make its confidential information reasonably available, and set the closing date for submissions at 17 August 2005 (six weeks after 6 July 2005).[30] A note to this effect was placed on the Commission's website.

The Commission now understands that many interested parties have signed confidentiality undertakings with Vodafone in order to view all or aspects of the commercial-in-confidence information that it provided in support of its Undertaking and that Vodafone's confidential information has been made reasonably available.

---

28 In a letter to the Commission dated 12 April 2005, Vodafone indicated that it did not concede that the Commission's request for disaggregation of Vodafone's RAF data is properly the subject of an information request under section 152BT of the Act. On 18 February 2005, the Commission wrote to Vodafone advising Vodafone that it considered that its request in relation to disaggregation of Vodafone's RAF data is 'about' the Undertaking, given that RAF data is collected precisely for the purpose of assisting the Commission in assessing undertakings (among other things), it is Commission practice to seek to cross-check the reasonableness of input data to externally-produced models against other sources and the lack of other audited data relating to Vodafone's Australian-only operations (against which data can be cross-checked).

29 The Commission notes Vodafone's response to this request on 26 August could not be considered to provide the information requested of it by the Commission.

30 In its letter of 29 June 2005, the Commission also indicated that if Vodafone had failed to make its confidential information available by 6 July 2005 it would continue with its assessment of Vodafone's Undertaking. The Commission also indicated that to the extent that Vodafone's failure to make its confidential information reasonably available limits the Commission's ability to efficiently assess Vodafone's contentions in support of its undertaking, the Commission would necessarily be constrained in the weight to which it will be able to attach to those contentions.

On 1 July 2005, Vodafone wrote to the Commission indicating that it believed the appropriate 'reference point' for commencement of the process for concluding confidentiality arrangements with interested parties (for access to Vodafone's confidential information) is 19 May 2005 – the date on which Vodafone received a letter for the Commission outlining a number of potential concerns with Vodafone's proposed confidentiality undertaking identified by interested parties and noting that the Commission would welcome Vodafone engaging in individual negotiations with interested parties directly.

In a reply to Vodafone dated 20 July 2005, the Commission noted that it did not agree with the assessment by Vodafone of the appropriate 'reference point' and, further, indicated that remained of the view that Vodafone's confidential information had not yet been made reasonably available to several interested parties.

In light of these events, the Commission considers that for the purposes of assessing the Undertaking, the following periods could be considered to have 'stopped the clock':

- 5 April 2005 to 17 November 2005, pursuant to section 152BT of the Act;
- 14 April 2005 until 17 August 2005, pursuant to section 152BU (6)(a) of the Act;
- 17 August 2005 to 28 October 2005, pursuant to section 152BT of the Act; and
- 3 October 2005 to 17 October 2005, pursuant to section 152BT of the Act.

Accordingly, and assuming that there are not further information requests made of Vodafone under section 152BU of the Act, staff believes that the Commission has until on or around 6 May 2006 to complete its assessment of the Undertaking.

3.3.3. Use and disclosure of confidential information in this report

In relation to this report, the Commission has relied upon commercially sensitive information supplied by Vodafone and interested parties in arriving at its draft view. The Commission has assessed this sensitive information having regard to its policy on the treatment of information,[31] and where applicable, has determined that this information should not be reproduced in this report.

Accordingly, where information that is commercially sensitive has been relied upon in reaching a conclusion in this report, it has either been aggregated to a level such that it is no longer commercially sensitive or, where this is not possible, it has been masked with the designation **[c-i-c]**. Unless it is otherwise indicated, the information masked with **[c-i-c]** is information provided by Vodafone, or an interested party, over which it as made a confidentiality claim.

3.3.4. Documents examined by the Commission

Under section 152CHA, where the Commission:

- makes a decision under section 152BU(2) accepting or rejecting an access undertaking; and

[31] ACCC, *Collection and Use of Information,* 2000.

- the Commission gives a person a written statement setting out the reasons for the decision;

it must specify the documents that the Commission examined in the course of making the decision.

In its assessment of the Undertaking, the Commission has primarily relied upon the supporting submissions provide by Vodafone, and the further submissions provided by Vodafone in response to the Commission's requests for further information under section 152BT of the Act.

The Commission has also relied upon the submissions provided by interested parties in response to the Discussion Paper.

Further, the Commission has relied upon a specialist consultancy report prepared for the Commission by *Analysys* in relation to the price terms and conditions the Undertaking. Where relevant, other documents relied upon by the Commission are referred to in the body of the report.

The Commission notes it has also had regard to a specialist consultancy report prepared for it by *WIK Consult* in relation to the material prepared by Frontier on Ramsey-Boiteux and network externality pricing issues on Vodafone's behalf and submitted by Vodafone to the Commission with the Undertaking.

As required under section 152CGA of the Act, a complete list of the documents that the Commission examined in the course of making its final decision will be included in the Final Report.

4. Summary of the Vodafone Undertaking

The Undertaking is provided by Vodafone under Division 5 of Part XIC of the Act, as the access provider of a MTAS.[32] It specifies the price and non-price terms and conditions on which Vodafone undertakes to comply with the applicable SAOs in the supply of the MTAS. The Undertaking does not comprehensively set out all the terms and conditions in this context. Specifically, clause 3(b)(i) provides that the Undertaking does not constitute an offer to provide the declared service to access seekers. Rather, additional terms and conditions must be negotiated and agreed between Vodafone and an access seeker or, failing agreement, determined in accordance with sections 152CP or 152CPA of the Act (i.e. by Commission arbitration determination)

Essentially Vodafone undertakes to:

- supply the MTAS to an end-user directly connected to its GSM Vodafone's Network (as described in the Service Schedule);
- at the prices specified in the Service Schedule;
- on the terms specified in the Access Agreement and Service Schedule; and in
- satisfaction of the applicable SAOs specified in the Service Schedule.

The Undertaking is designed to commence from the time the Commission accepts the Undertaking. A summary description of the relevant service (the MTAS on Vodafone's network), the proposed price and non-price terms and conditions, the SAOs considered applicable by Vodafone, and the submissions lodged by Vodafone in support of its Undertaking follows.

4.1. Service description

Vodafone offers to supply the 'Vodafone Domestic Digital Mobile Terminating Access Service' (MTAS) specified in the Service Schedule of the Access Agreement in the Undertaking. The Service Schedule describes the service as:

> … an Access service for the carriage of voice calls from a Point of Interconnection to a B-Party directly connected to the Vodafone Network (the Service).[33]

The Vodafone Network is defined in the Service Schedule to mean:

> …Vodafone's GSM Telecommunications Network used to provide a digital mobile telephone service.[34]

Vodafone submits that it did not include 3G voice termination services in the Undertaking because there is 'some degree of uncertainty surrounding the nature,

---

[32] The body of the Undertaking itself comprises terms and conditions which deal with matters of general application such as commencement and duration of the Undertaking and which seek to reserve Vodafone's legal rights, including in respect of future changes to the Undertaking. Attachment A to the Undertaking (the 'Access Agreement') contains matters of interpretation, commencement, terms and conditions, and other matters of general application. Forming part of the Access Agreement is the Service Schedule which deals with service description, prices, terms and conditions and applicable SAOs.

[33] Vodafone Undertaking, Access Agreement, Service Schedule, Part A, Clause 1, p. 1.

[34] Vodafone Undertaking, Access Agreement, Service Schedule, Attachment A, p. 1.

timing and scope of its 3G investment, and therefore, the forward looking efficient economic cost of providing the MTAS over a 3G network.'[35]

4.2. Price terms and conditions

Part B of the Service Schedule of the Access Agreement specifies the prices at which Vodafone offers to supply the MTAS to access seekers. These were shown in Table 1.1 above. The amount payable to Vodafone for the MTAS would be the 'Usage Charge', for the relevant 'Validity Period', multiplied by the actual number of minutes Vodafone supplied to the access seeker in a particular billing period. An additional part of the price terms and conditions on which Vodafone offers to supply the MTAS is set out in Part C of the Service Schedule.

These terms and conditions apply only in relation to an access seeker complying with the pass-through safeguard. In effect, this is an obligation which requires that the access seeker must reduce its average retail price (excluding GST) for FTM calls which terminate on Vodafone's network, for each validity period, such that the average retail price of its FTM calls is equal to or less than the specified Target Average Retail Price for the relevant validity period.[36] Where a fixed-line provider fails to comply with the pass-through obligation for a validity period, clause 6 provides that the access seeker must pay Vodafone a 'pass-through rebate'.[37] The pass-through rebate is calculated as follows:

Conversation minutes in validity period X	×	(Usage charge for validity period X – Usage charge for last compliant validity period[38])

The stated aim of the pass-through safeguard is:

> … to ensure that end-users who make fixed to mobile calls realise the benefits of reductions in Usage Charges by ensuring those reductions are passed through to end-users or customers in the form of reduced retail rates for fixed to mobile calls.[39]

In relation to the *price* terms and conditions Vodafone submits the Undertaking satisfies the statutory criteria in Part XIC of the Act and should therefore be accepted by the Commission. In this regard, Vodafone submits that the PwC Model, on which Vodafone's MTAS usage charges are based, is the best estimate of the forward-looking efficient economic cost of the MTAS,[40] and that they are consistent with its legitimate business interests.

In relation to the pass-through safeguard, Vodafone submits that it satisfies the statutory criteria in Part XIC because it promotes the LTIE, is consistent with the legitimate business interests of the access seekers and Vodafone;[41] is in the interests of

---

35 Vodafone's Submission to the ACCC, Access Undertaking, Mobile Terminating Access Service, p. 15.

36 See the Undertaking, Access Agreement, Service Schedule, Part C, clause 2, p. 2.

37 Clause 7 provides that the Pass-through Safeguard also applies to transit traffic if the total transit traffic exceeds 750,000 minutes a month. Transit traffic is defined in clause 7.1 to be traffic which the access seeker terminates on Vodafone's network but for which the retail price is not set by the access seeker.

38 Compliant validity period is the last validity period in which the Access Seeker's average retail price for FTM services was less than the Target Average Retail Price for the validity period.

39 Vodafone Undertaking, Access Agreement, Service Schedule, Part C, Clause 1, p. 1.

40 Vodafone submission, pp. i to ii.

41 Vodafone submission, pp. 34 to 36.

those who have rights to use the declared service;[42] is consistent with operational and technical requirements for safety and reliability; [43] and promotes the economically efficient operation of a carriage service, telecommunications network or facility.[44]

4.3. Non-price terms and conditions

Clause 3(a) of the Undertaking specifies that Vodafone will undertake to comply with the terms and conditions specified in Attachment A in relation to the SAOs applicable to Vodafone in respect of the declared service.

Clause 3(b)(i) of the Undertaking makes it clear that the Undertaking does not purport to specify all the terms and conditions that are applicable to Vodafone in respect of the declared service, but only some of them. Additional terms and conditions not covered by the Undertaking would presumably need to be negotiated and agreed between Vodafone and an access seeker or, failing agreement, determined by Commission arbitration.

Clause 3(b)(iii) notes that the Undertaking only applies to the supply of the declared service in respect of voice calls on Vodafone's GSM network.

Clause 2 deals with the commencement and duration of the Undertaking. The Undertaking will become effective immediately after the Undertaking is accepted by the Commission and will continue until the earlier of three years from the commencement date or it is withdrawn or terminated in accordance with Part XIC.

The Agreement appears to contain the majority of the non-price terms and conditions of access to Vodafone's MTAS service. The Agreement provides terms and conditions in relation to:

- duty to provide the service, including interconnection and co-location;
- quality of service including non-discrimination in the provision of services;
- charges, including billing procedures and payment;
- credit management and security;
- network protection, safety and security including management and use of networks;
- confidentiality, including obligations, permitted uses and disclosure;
- liability and indemnity;
- suspension and termination of service arising from breaches of the Access Agreement, including consequences of termination; and
- general provisions including force majeure, notices, intervening legislation and other rights and obligations.

Part A of the Service Schedule to the Access Agreement provides the service description for the Vodafone MTAS service.

---

42 Vodafone submission, pp. 36 to38.
43 Vodafone submission, p. 38.
44 Vodafone submission, pp. 39 to 39.

Part B of the Service Schedule contains the Price List for the Usage Charge and the Network Conditioning Charge. The Usage Charge is discussed in more detail in Chapter 5. The Network Conditioning Charge is discussed below.

Part C of the Schedule deals with the pass-through safeguard and the compliance and dispute resolution measures associated therewith. The pass-through safeguard and its associated processes are dealt with in detail in Chapter 6.

Annexure 1 will contain the terms and conditions for ordering and provisioning. This part of the Agreement has been deliberately left blank as the terms and conditions relating to ordering and provisioning are to be agreed between Vodafone and the access seeker.

Annexure 2 contains the non-price terms and conditions in relation to billing and payment.

Annexure 3 will contain the terms and conditions pertaining to the Interconnection Manual. Again, this part of the Agreement has been deliberately left blank.

Annexure 4 will contain the terms and conditions pertaining to dispute resolution procedures. This part of the Agreement has been deliberately left blank.

Annexure 5 will contain the terms and conditions pertaining to network operation and fault management. This part of the Agreement has been deliberately left blank.

Annexure 6 will contain the terms and conditions pertaining to access to facilities. This part of the Agreement has also been deliberately left blank.

4.4. Supporting material to Vodafone's undertaking

4.4.1. The Vodafone submission

Vodafone has provided multiple submissions (excluding submissions made pursuant to a section 152BT request for information) in support of its Undertaking. These are

- Vodafone's primary submission to the ACCC on the Undertaking (the Vodafone submission);
- Appendix 1 – PricewaterhouseCoopers (PwC) *The Fully Allocated Cost (FAC) of services on Vodafone Australia's GSM network*, 22 March 2005;
- Appendix 2 - *Weighted Average Cost of Capital*;
- Appendix 3 – Report of Frontier Economics (Frontier) *Modelling Welfare-maximising Mobile Termination Rates,* March 2005;
- Report of Frontier *The Waterbed Effect*, July 2005;
- Report of Frontier, *Response to ACCC discussion papers on the access undertakings lodged by Vodafone and Optus*, September 2005;
- Report of PwC *The Fully Allocated Cost (FAC) of services on Vodafone Australia's GSM network – Model update incorporating data for the financial year ended 31 March 2004*, 20 October 2005; and
- Report of Frontier *Response to AAPT's submission to the ACCC 'Estimates of Ramsey-Boiteux Mark-Ups and Network Externality Effects'*, November 2005.

- Vodafone submission in response to Hutchison submissions on Vodafone's Undertaking, November 2005.[45]

4.4.2. The PwC model

As Appendix I to the Undertaking, Vodafone submitted a report by PricewaterhouseCoopers titled *The Fully Allocated Cost (FAC) of Services on Vodafone Australia's GSM network* (the PwC Report). It is based on a fully allocated top-down cost model (the 'PwC model') which is built from Vodafone's (unaudited) 2002-03 accounting and operational data. The model is also described as 'forward-looking' as Vodafone re-valued its network assets in 'current cost' terms.[46]

The PwC model is specified to estimate the 'forward-looking efficient economic costs' for six services; mobile subscription, mobile outgoing, mobile incoming (MTAS), mobile on-net, SMS messages and GPRS megabytes. Costs are allocated either 'directly' to these services, or 'indirectly' across these services via an equi-proportionate mark-up (EPMU) type approach.

Vodafone's network asset costs were allocated directly to services with the use of routing factors which were provided by Vodafone.[47] A 'tilted annuity formula' was applied to these network assets to calculate an annualised depreciation charge for these assets for 2002-03. This required an estimation of the expected forward-looking annual input price change of those assets and a 'cost of capital' (WACC) estimate.

Based on its model, PwC calculates that the forward-looking efficient economic cost of Vodafone supplying the MTAS on its GSM network is 16.15 cpm in 2002-03. Vodafone submits that this is an appropriate estimate for the MTAS for the period 2006-07 and beyond.

The PwC Report and the underlying model are discussed further in Chapter 5 of this report.

4.4.3. Weighted Average Cost of Capital (WACC)

As Appendix II to the Undertaking, Vodafone submitted the basis for the Weighted Average Cost of Capital (WACC).

Vodafone notes that specific WACC parameter values have been developed from analysis for comparable Australian and overseas companies providing similar services to the MTAS. Vodafone's approach to calculating the WACC in this context involves applying the post-tax nominal WACC formula developed by R.R. Officer (the 'Officer Formula').[48] The pre-tax nominal WACC is used in determining the cost component return on capital, within the projected costs of the MTAS contained in the cost model.

---

45 The Commission notes it was unable to access this document for the purposes of reaching its draft decision.

46 Owing to the granularity of some Vodafone data, however, PwC used its experience in other jurisdictions (specifically, information from costing modelling undertaken for Vodafone in the UK) and estimates provided by Vodafone to adjust certain data for its model.

47 Direct costs allocated to 'Subscription' were not based on 'route factored' volumes since they are not considered 'network conveyance costs' in the PwC model.

48 Officer R. R., 'The Cost of Capital of a Company under an Imputation Tax System', *Accounting and Finance*, 34 (1), May 1994.

Vodafone's WACC calculation is discussed further in Chapter 5

4.4.4. The Frontier model

As Appendix III to the Undertaking, Vodafone submitted a report by Frontier titled *Modelling Welfare Maximising Mobile Termination Rates* (the Frontier Report, March 2005). The Frontier model estimates that the 'welfare-maximising' prices for the MTAS lies between 22.32 and 32.73 cpm, depending on the relevant assumptions about the magnitude of Vodafone's 'fixed and common costs' (FCCs) and the choice of own-price elasticity combinations. The 'welfare-maximising' estimates include two mark-ups above the 'long-run incremental cost' (LRIC) of the MTAS to account for the recovery of 'fixed and common' (FCCs) costs based on Ramsey-Boiteux (R-B) principles; and the inclusion of a 'network externality surcharge' (NES).

Vodafone considers that R-B pricing and the inclusion of a mark-up to reflect a NES is the approach which is most consistent with the relevant statutory criteria as it produces 'efficient, welfare-maximising prices'. Vodafone also notes that its current pricing structures (including its pricing of the MTAS) are implicitly based on R-B principles. However, Vodafone does not include the outputs of the Frontier Report in proposing its Undertaking price terms. It argues that this is to ensure an orderly and timely assessment of the Undertaking by the Commission. That said, Vodafone submits that it reserves its right to review its position on this issue if given the opportunity to present its case on appeal.[49]

The Commission's assessment of the Frontier model is considered in Appendix 2 to this report.

4.4.5. The 'waterbed' report (Frontier)

On 8 July 2005, Vodafone submitted a report to the Commission (prepared on its behalf by Frontier), in relation to the Commission's assessment of both the Optus and Vodafone undertakings, and by Frontier titled 'The Waterbed Effect' (hereafter referred to as 'the Waterbed Report'). This report addresses the issue of whether there will be any adjustments to prices of other mobile services flowing from a change in the MTAS price and involves analysing 'supply and demand' factors operating in the mobile industry. This report is considered, in detail, in Appendix 6 to this report.

4.4.6. Response to Commission discussion papers on the MTAS access undertakings lodged by Vodafone and Optus (Frontier)

On 14 September 2005, Vodafone submitted to the Commission a report prepared by Frontier titled 'Response to ACCC discussion papers on the access undertakings lodged by Optus and Vodafone' (hereafter referred to as the Frontier Discussion Paper Response'). The report primarily responds to questions raised in the Commission's Discussion Paper on Optus's MTAS access undertaking (in respect of which a draft decision was released by the Commission on 8 November 2005). However, Vodafone noted that the information and analysis contained in this report were also relevant to its Undertaking and the Commission's assessment of the reasonableness of the Undertaking.

---

[49] Vodafone submission, pp.iii-iv.

The Frontier Discussion Paper Response essentially compares the approaches to R-B and Network Externality pricing adopted by Vodafone's and Optus's respective consultants, in modelling 'welfare-maximising' MTAS prices. Frontier concludes that:

> The results of this analysis suggest that the welfare-maximising level of the MTAS charges estimated by CRA would appear to be within a reasonable range based on our application of CRA's inputs to the Frontier model.[50]

4.4.7. The PwC 2003-04 re-run of the Fully Allocated Cost model

On 28 October 2005, Vodafone submitted, as 'further corroborative evidence that the undertaking target price of 16.15 cpm is reasonable and conservative' a report by PwC titled 'The Fully Allocated Cost (FAC) of services on Vodafone Australia's GSM network – Model update incorporating data for the financial year ended 31 March 2004' (hereafter referred to as 'The PwC Model Re-run Report'). This report was received some seven months after initial submission of the Undertaking (and most of its supporting material), and more than two months after the final date the Commission had set for submissions in response to the Discussion Paper.

As could reasonably be expected in the circumstances, the Commission was considerably advanced in its assessment of both the Undertaking and the submissions made by all interested parties in relation to it at the time it received the PwC Model Re-run Report. Further, the report prepared by the Commission's external consultant, Analysys Consulting Ltd (Analysys), in relation to the PwC model was extremely close to completion. As such, the Commission's ability to assess this 're-run' report and the underlying model and model inputs has been compromised. Accordingly, the weight the Commission has been able to place on this information in forming its draft view on the Undertaking has necessarily been limited. The Commission notes that it expects to be able to conduct a more thorough analysis of this material in reaching a final view on the Undertaking.

4.4.8. Frontier response to AAPT's submission on Ramsey-Boiteux Mark-Ups and Network Externality Effects

On 17 November 2005, Vodafone submitted a report by Frontier titled 'Response to AAPT's submission to the ACCC 'Estimates of Ramsey-Boiteux Mark-Ups & Network Externality Effects' (hereafter referred to as the 'Frontier Response to AAPT'). This report responds to a submission from AAPT of 21 October 2005 in relation to the analysis conducted by Frontier, and its reports on Ramsey-Boiteux mark-ups, network externalities and the 'waterbed' effect.

The Commission notes that late submission of this paper. However, as opposed to the PwC model 're-run' this paper does not specifically relate to issues which were considered in the report prepared for the Commission by Analysys. Therefore, the Commission has been able to have regard to this Frontier report in reaching its draft decision.

4.4.9. Vodafone response to Hutchison submission

Vodafone has also submitted a response to Hutchison's submission on the Undertaking. However, due to the late submission of this response the Commission's

---

[50] Frontier Discussion Paper Response, p. 10.

ability to assess it has been considerably compromised. Accordingly, the weight the Commission has been able to place on this information in forming its draft view on the Undertaking has necessarily been limited. The Commission notes that it expects to be able to conduct a more thorough analysis of this material in reaching a final view on the Undertaking.

5. Vodafone's MTAS cost estimate

As noted previously, the target price of 16.15 cpm in the Vodafone Undertaking price terms is based on the results of a cost model developed on Vodafone's behalf by PwC (the PwC model).[51] Section 5.1 considers the conceptual modelling approach employed by PwC, while section 5.2 considers the model inputs.

5.1. Modelling approach

5.1.1. Top-down fully allocated cost model

The PwC model is a 'top-down fully allocated cost' (FAC) model based on Vodafone's 2002-03 data.. Costs are allocated across six services ('subscription', 'outgoing calls', 'on-net calls', 'incoming calls' (MTAS)[52], 'SMS messages and 'GPRS') via, in the first instance, direct cost allocations, and subsequently, indirect cost-mark-ups.[53] This is shown below in figure 5.1.

Figure 5.1: Cost allocations in the PwC model.

[c-i-c]

This method of allocating indirect costs is broadly equivalent to a multi-stage equi-proportionate mark-up (EPMU) approach.[54] PwC notes that a 'fully allocated cost' model differs from an incremental cost (i.e. TSLRIC) model because 'it does not distinguish between costs that are incremental to the services being modelled and costs that are common to services'.[55]

Vodafone submits that a 'first best' approach to determining forward-looking efficient economic costs is likely to be a TSLRIC+ model calculated on a 'bottom-up' basis and then reconciled with top-down accounting data, but notes this was not possible given 'time, cost and data' constraints.[56] Vodafone also submits that, given the competitiveness in the Australian mobiles market, there is unlikely to be a material difference between the results of its model and the forward-looking efficient costs of a

---

51 Vodafone originally submitted the PwC model on 26 November 2005, and it generated an estimate of c-i-c cpm for the MTAS. However, after being alerted to a mistake in the model by the Commission, Vodafone re-submitted its Undertaking in March 2005 with the revised PwC model which yields a price for the MTAS of 16.15 cpm. Further, on 20 October 2005, Vodafone provided a further update of the PwC model that is based on its 2003-04 data.

52 The costs allocated to the MTAS are then divided by the MTAS traffic volumes (i.e. incoming minutes on Vodafone's GSM mobile network) to derive a per-unit MTAS estimate of 16.15 cpm.

53 Costs are allocated directly to services. In the case of network asset costs, these are allocated directly to services with the use of routing factors. Indirect costs are allocated on the basis of the proportions of direct costs allocated to the relevant services. In simple terms, this means that if each service was attributed 33 per cent of total direct costs, then each service would subsequently be attributed 33 per cent of total indirect costs.

54 Notably, an EPMU approach was considered the Commission's preferred approach to the recovery of 'organisational-level' common costs in making the MTAS Pricing Principles Determination.

55 The PwC Report, p. 4. Notwithstanding this, Vodafone has conducted a separate high-level analysis on the magnitude of its 'fixed and common costs' (FCCs) which suggests they represent c-i-c to c-i-c per cent of its annualised costs. These estimates are used in the model developed on Vodafone's behalf by Frontier Economics, which is considered in Appendix 2 of this report.

56 Vodafone submission, p. ii.

hypothetical MNO with an efficient and optimised network architecture.[57] Moreover, Vodafone submits that the PwC model represents a 'far more robust proxy' than the Commission's target price of 12 cpm in the MTAS Pricing Principles Determination.[58]

Submitters' views

Telstra submits that, while 'bottom up' costing of the network of an efficient MNO would be the optimal approach to determining efficient MTAS prices, for mobile networks an actual network is likely to provide reasonable approximation of these costs. Telstra also recognises the substantial effort, cost and time required to develop a bottom-up model. It also considers that there are significant benefits associated with a top-down approach, including that it is grounded in reality, and hence, captures costs that are necessarily incurred in providing the service at issue.

The consultants engaged on behalf of the CCC (Charles Chambers and Professor Cave) have reservations about the fitness for purpose of the top-down model provided by Vodafone. Due to these reservations, Cave and Chambers submit that it would be dangerous for the Commission to rely upon this model without significant further analysis (possibly an audit) and without supplementation by a bottom-up model.[59]

Hutchison submits that the modelling approach adopted by PwC is inappropriate for estimating the forward-looking efficient economic costs of providing the MTAS on Vodafone's network. In this regard, Hutchison notes and adopts the view of its consultant, Marsden Jacob Associates (MJA), which submits that a bottom-up TSLRIC model is the most appropriate method for estimating such costs and that the FAC approach adopted by Vodafone will tend to 'err on the side of overstating the economic costs of providing the MTAS' and is in fact inappropriate in this context.[60]

The Commission's view

The Commission considers that, ideally, the most appropriate method for estimating the 'efficient costs' of an MNO providing the MTAS is via a 'bottom-up' model. Moreover, the Commission considers that the reconciliation of a bottom-up model with a top-down model is likely to further strengthen the credibility of the model results, provided that the reconciliation is performed in a transparent and reasonable manner. However, the Commission acknowledges that the development of a bottom-up model is likely to be a relatively costly and time consuming exercise.[61] .

Accordingly, for the purposes of its MTAS Pricing Principles Determination, the Commission sought to estimate the TSLRIC+ of providing the MTAS using reasonable cost estimates that were available to it. This included information from overseas jurisdictions on the cost of supplying the MTAS and the information provided to the Commission under the RAF. Based on this information, the

---

57 Vodafone submission, p. 9.
58 Vodafone submission, p. ii.
59 Cave and Chambers, p. 5.
60 Marsden Jacob Associates, p. 17.
61 In the MTAS Final Report the Commission noted (p.210-211) that the estimation of a TSLRIC+ model would be 'costly and time-consuming' to implement.

Commission determined that the TSLRIC+ of supplying the MTAS in Australia was likely to fall within the range of 5 – 12 cpm.[62] .

In the Commission's view, a properly specified top-down model populated with reasonable inputs would provide an estimate of the TSLRIC+ of providing the MTAS no less reasonable than that relied upon by the Commission when making its MTAS Pricing Principles Determination. The Commission also considers that the reliance on a top-down cost model in this context could also be strengthened if considered in conjunction with other sources of information about the TSLRIC+ of providing the MTAS – such as appropriate benchmarking analysis from overseas jurisdictions.

The Commission considers that the use of a top-down FAC approach which is based on Vodafone's GSM network is likely to tend toward overstating the 'forward-looking efficient economic costs' of providing the MTAS. This is because a top-down FAC approach specifies that *all* costs incurred by an operator be allocated across services, whether they are incurred efficiently or not. Indeed, PwC itself appeared to recognise the potential for top-down models to include inefficiencies when it made the general statement that:

> … it is possible that the observed costs of an operator may include a level of inefficiency which the regulator may wish to exclude for the purpose of setting interconnection prices. Since inefficiencies are asymmetric there is a natural tendency for top-down models to overstate rather than understate costs.[63]

In the Commission's view, there is certainty that Vodafone's 2002-03 accounting and operational information would necessarily reflect the costs that would be incurred in the long-run by an 'efficient' operator in the supply of the MTAS. This is particularly so given the Commission's previously expressed view that the development and operation of Vodafone's GSM network has not occurred within an effectively competitive market structure.

For these reasons, while the Commission considers that a properly specified top-down FAC model can be used to inform the costs of providing the MTAS in Australia, this type of approach would, at best, tend to suggest an upper bound on the efficient costs of service provision.

5.1.2. The use of 'Vodafone' as the modelling benchmark

One of the key initial modelling decisions to be made was the benchmark upon which to base the cost estimates. The PwC model is based on Vodafone's actual accounting and operational data for the year ended 31 March 2003 (the 2002-03 financial year). On this issue, Vodafone submits that the Commission should assume that Vodafone's current network architecture is efficient since there is:

> … no basis on which to presume – in the face of long-standing competitive pressure – that Vodafone's network architecture and operating expenditure are not efficient.[64]

---

62 The Commission notes that the MTAS Pricing Principles Determination specifies that the adjustment path of prices for the MTAS should have an end price set at the upper end of the range of reasonable estimates of the TSLRIC+ of supplying the service that are currently available.

63 PricewaterhouseCoopers, *TSLRIC Conference*, 16-17 July 2003, p. 22.

64 Vodafone submission, p. 8.

Submitters' views

Telstra supports a modelling approach that applies the 'efficient network operator' standard, where this means a market share that is achievable by all MNOs. Telstra considers that efficiencies achieved by MNOs with a larger market share than this standard are legitimate and should not be reflected in an access charge. However, Telstra also recognises the difficulties, effort and time associated with building an efficient network model for this purpose. Accordingly, it is not opposed to the use of Vodafone as the relevant benchmark so long as the appropriate adjustments are made and the approach is taken into account when interpreting the results of the costing study.[65]

Hutchison submits that the benchmark used in the PwC model is inappropriate. In the first instance, Hutchison submits that Vodafone's cost inputs are not an appropriate basis for modelling the cost of providing the MTAS. In support of this position, Hutchison notes and adopts the views of its consultant, Gibson Quai-AAS (GQ-AAS), that Vodafone's network has not achieved the efficiencies of scale of Telstra's and Optus's GSM networks and it is not representative of the network of an efficient operator. GQ-AAS also submits that Vodafone's spectrum costs will be higher per service in operation (SIO), leading to higher MTAS call costs per minute due to its smaller customer base.

Hutchison regards an appropriate costing benchmark to be that of an industry average measured by a hypothetical new entrant to the market. This position is also supported by its consultant, MJA.

The Commission's view

In the Commission's view, the most appropriate benchmark to model the costs of the MTAS is that of the 'most efficient operator' in the market. That said, on the basis of the available information it is not clear to the Commission what the 'most efficient Australian operator' is. That is, it is not clear whether the most efficient benchmark is a smaller, larger or some 'average' sized MNO, and, moreover, whether it is an integrated fixed-line and mobile operator.

On the use of Vodafone as the relevant benchmark, the Commission notes that views of submitters that, compared to MNOs such as Telstra and Optus, Vodafone would have higher per-unit costs of supplying the MTAS due to its relatively smaller market share, and therefore, its inability to enjoy comparable economies of scale. To the extent that this is the case, the Commission considers that the estimates generated based on Vodafone's data cannot be considered the most efficient benchmark available. This would therefore suggest that any cost estimates based on Vodafone's data will likely overstate the 'forward-looking efficient economic costs' of supplying the MTAS according to the benchmark considered relevant by the Commission.

5.1.3. The decision to use '2002-03' data

The PwC model is based on 2002-03 data as Vodafone notes that 2003-04 data were not available at the time the modelling exercise commenced. These data are used to generate a 'target' price of 16.15 cpm for the MTAS which Vodafone proposes to apply – via an adjustment path – from 1 January 2007 (i.e. half-way through 2006-07 financial year) onwards.

---

[65] Telstra submission, p. 20.

In this regard, Vodafone acknowledges that since it is proposing an adjustment path to this target price, 'it may be considered appropriate to adjust these costs for both forecast inflation and any efficiency gains that might be expected to be achieved'.[66] However, Vodafone concluded that making such adjustments would be complex and time consuming and that, in any case, 'there is no basis on which it can be presumed that any forward-looking efficiency gains are likely to exceed or even match inflation forecasts'.[67]

Moreover, on 20 October 2005, almost seven months after submitting its Undertaking, Vodafone submitted an updated version of the PwC model based on its 2003-04 data. This model generates an estimate for the MTAS of c-i-c cpm – c-i-c per cent c-i-c than the original 2002-03 model. The revised model was not only based on more recent data, but also included some model corrections and adjustment for certain model inputs. In summary, however, this c-i-c estimate results from Vodafone's cost/traffic volume ratio being c-i-c than in its original 2002-03 model. This result is summarised in Table 5.1 below.

Table 5.1: Costs and Volumes associated with Vodafone's MTAS

	2002-03	2003-04	Percentage change
Total costs ($)	c-i-c	c-i-c	c-i-c
Total traffic (mins)	c-i-c	c-i-c	c-i-c
Per-unit cost (cpm)	16.15	c-i-c	c-i-c
Working capital allocated to MTAS ($)	c-i-c	c-i-c	c-i-c
Final per-unit estimate (cpm)	16.15	c-i-c	c-i-c

Submitters' views

Telstra submits that 'cost estimates should be based on the most recently available information at the time of modelling'. In this regard, Telstra submits that 'information for the year ending 31 March 2003 does not appear to be that timely' and that 'more recent data should have been used'.[68]

The consultants engaged by Hutchison appear to be concerned by the way in which the PwC model uses 2002-03 data to derive a target price of 16.15 cpm for a future period. In this regard, MJA submits that it would be 'surprised if 2002-03 unit costs were an appropriate reflection of the cost of 2007', and that, international experience from the UK and Sweden[69] 'clearly suggests' that MTAS costs will decrease over time.[70] Given the 'top-down' FAC approach' adopted by PwC, MJA also submits that the model could have been forecast forward to derive a cost for 2007 which reflects, among other things, 'falling equipment prices' and 'increased traffic volumes'.[71]

---

66 Vodafone submission, p. 24.
67 Vodafone submission, p. 24.
68 Telstra submission, p. 21.
69 MJA does not have access to data to make such an adjustment, however, based on its examination of the Swedish LRIC model, suggest that costs may be reduced by 10 per cent by 2007.
70 Marsden Jacob Associates, p. 20.
71 Marsden Jacob Associates, pp. 20-21.

GQ-AAS submits that the use of 2002-03 data to estimate future MTAS costs is 'possible' but requires appropriate adjustments, including for changes in the price of network elements, network capacity and utilisation, changes in improvements of operations and changes in traffic/subscriber volumes.[72] Specifically, GQ-AAS submits that the PwC model must be recalibrated to reflect *capital* and *operating* costs during the periods of the Undertaking (i.e. 2005 to 2007) because since 2002-03 'substantial price and technology changes have occurred, leading to reduction in the capital and operating costs of GSM mobile networks in the order of 5 to 10 per cent per annum.

AAPT has concerns with the use of Vodafone's historic 2002-03 data for a 2007-08 estimate due to evidence of falling equipment prices and increased traffic volumes.[73]

Analysys's view

Analysys has concerns about using 2002-03 data to arrive at a proposed cost-based price for the MTAS in 2007-08 without appropriate adjustments for the period to which the estimate will apply.

[c-i-c][74] [75].[76]

Analysys notes that, instead, Vodafone uses the 2002-03 data for its 2007-08 estimate and submits that there is insufficient data and time to conduct an analysis of how efficiency gains and inflation may affect costs going forward, and the lack of a basis to assume that forward-looking efficiency gains are likely to exceed – or even match – inflation forecasts.[77]

[c-i-c][78] Analysys notes that an MTAS price extracted from a later year from the tilted annuity formula would therefore be lower, although also notes that cumulative inflation would need to be applied to develop a nominal target charge.[79]

[c-i-c]

The Commission's view

The Commission notes Vodafone's submission that 'audited data for 2003-04 were not available at the time the modelling exercise commenced'. Although the Commission accepts Vodafone's submission in this regard, it is not clear why the model could not have been populated with 2003-04 data prior to the completion of the modelling exercise, particularly since the model would appear to have been completed

---

72 GQ-AAS considers that network operating costs should also be decreasing over time due to 'improved productivity generally and within the GSM mobile industry'.

73 AAPT, August 2005, p. 6.

74 Vodafone, Letter to the Commission, 17 October 2005, p. 2.

75 Analysys, p. 17.

76 Analysys, p. 14.

77 Analysys, p. 17.

78 For example, Analysys notes MJA's view that a trend could be established by using the PwC model to produce costs estimates in different years for which historic data is available. MJA also cites the Swedish LRIC model, suggesting costs could fall by 10 per cent by 2007.

79 Analysys, p. 7.

well after the relevant statutory and RAF deadlines[80] for the submission of Vodafone's 2003-04 results.[81]

In any case, the Commission notes that the PwC model is based on 2002-03 data, and that this estimate is applied as a 'target' price from 1 January 2007, without any apparent adjustment to capture relevant cost/volume trends which might operate during the period 2002-03 to 2006-07 and beyond. The Commission also notes that submitters to this inquiry, and Analysys, have raised concerns with this approach, and therefore, the extent to which the PwC model can be relied on to generate an accurate estimate for the costs of supplying the MTAS from 1 January 2007.

The Commission considers that the approach applied by PwC to extract a per-unit MTAS estimate from 2002-03 data is unlikely to provide a credible estimate of the costs facing an MNO from 1 January 2007. Rather, in the Commission's view, the likelihood of declining GSM network asset costs coupled with increasing traffic volumes (among other factors) suggests that the per-unit costs of providing the MTAS on a GSM network are likely to be lower in 2007 and beyond (even once inflation is factored in), as compared to 2002-03.

In support of this view, the Commission notes that audited data provided by Vodafone under the RAF appears to show that the costs it attributed to its 'External Wholesale' business in aggregate c-i-c over the period 2002-03 to 2004-05, while traffic volumes c-i-c per cent. Also, data provided by Telstra under its RAF shows that total costs associated with its External Wholesale GSM originating/terminating business c-i-c over this period, while traffic volumes c-i-c per cent. Both these pieces of information would tend to support the view that per unit MTAS costs are likely to be lower in 2004-05 (and if the trend is extrapolated, 2006-07) as compared to 2002-03. Moreover, as noted by MJA, this trend is consistent with the Swedish LRIC model which estimated that MTAS cost may be reduced by 10 per cent by 2007.

The Commission notes Vodafone's view that 'there is no basis on which it can be presumed that any forward-looking efficiency gains are likely to exceed or even match inflation forecasts'. However, as pointed out by Analysys, Vodafone itself has assumed that around c-i-c per cent of its 'network assets' (or around c-i-c per cent of total network asset gross replacement costs) will c-i-c in price by c-i-c to c-i-c per cent per annum from 2002-03 onwards. In contrast, Vodafone assumed that c-i-c per cent of its network assets (or around c-i-c per cent of total network asset gross replacement costs) would c-i-c by c-i-c per cent per annum from 2002-03 onwards, while the rest would trend at c-i-c per cent per annum. This evidence is potentially significant since 'network asset' costs represent over c-i-c per cent of the total cost attributed to the MTAS in 2002-03. Moreover, it would also appear to support the view that, on balance, the value of Vodafone's network assets will decline between

---

[80] In this regard, the Commission understands that the statutory and RAF deadlines for Vodafone's 2003-04 information (which are both audited externally), fell in July/August 2004.

[81] The Commission notes that on 20 October 2005, Vodafone submitted an updated version of the PwC model based on its 2003-04 data (almost seven months after the submission of its Undertaking). Notably, this model yields a c-i-c estimate for the MTAS of c-i-c cpm, due to both revisions and corrections to the 2002-03 model, as well as the use of new data. As noted in section 4.4.7 above, however, due to the late submission of this model, and the fact that the Commission's consultant has had limited time to assess this version, limited weight has been able to placed on this information in forming its draft view on the Undertaking. The Commission expects to be able to conduct a more thorough analysis of this material in reaching a final view on the Undertaking.

the period 2002-03 to2006-07, and therefore, a lower per-unit cost estimate will apply in 2006-07.

5.1.4. The decision to model 2G/2.5G costs

Another decision for Vodafone/PwC was to determine the technology that would form the basis for the 'forward looking efficient economic cost' estimate. Vodafone currently owns and operates two mobile networks. The first is a GSM network (2G/2.5G technology) with coverage of approximately 94.5 per cent of the Australian population. The second is a wideband-CDMA (3G) network which it continues to build in conjunction with Optus. In relative terms, Vodafone's 3G network is in its formative stage. Vodafone and PwC would therefore appear to have had at least three options when determining the network technology that would form the basis of its cost estimates; namely Vodafone's 2G/2.5G network, Vodafone's 3G network or a combination of the two.

The PwC model is based on the first option. In explaining this choice, Vodafone submits that there is some degree of uncertainty surrounding the nature, timing and scope of its 3G investment, and therefore, the forward-looking efficient economic cost of providing the MTAS over a 3G network. Vodafone also submits that 3G MTAS traffic is not expected to be significant over the term of the Undertaking,[82] and in any case, the 'TSLRIC+ for the MTAS on a 3G mobile technologies is likely to be significantly higher than for 2G'.[83]

Submitters' views

The CCC's consultants (Cave and Chambers) have questioned the Undertaking service description in light of the Commission's broader service description for the MTAS. Cave and Chambers submit that because a calling party has no control or foreknowledge of what technology will be used to terminate a call when the MNO has more than one technology (i.e. combined 2G/3G operator), a combined voice call MTAS rate should also be used.[84] Cave and Chambers also cite evidence that while a 3G site may cost 20 to 40 per cent more than a 2G site, it could support as much as 10 times more traffic.

Hutchison (based on advice from both GQ-AAS and MJA) submits that Vodafone's price terms are not based on the most efficient forward-looking technology (3G). In this regard, MJA submits that a '2G only network would not represent the best-in-use technology', and that a 3G network is likely to lead to lower cost estimates (one source cited suggests a fully loaded 3G network would be 25 per cent cheaper than a GSM network).[85] MJA concludes that a cost model based purely on 2G technology would provide a 'cost ceiling' in this context. Similarly, GQ-AAS submits that the appropriate 'forward-looking' technology to use in this model would have been 3G technology. Based on this advice, Hutchison submits that the approach adopted by PwC will 'result in a higher estimate of the cost of the MTAS'.[86]

---

82 Vodafone submission, p. 15.

83 Vodafone submission, footnote 26, p. 16.

84 Cave and Chambers, p. 2.

85 Marsden Jacob Associates, p. 14. In this context, MJA also submits (p. 13) that it would seem unlikely that MNOs would make the transition from 2G to 3G if it did not provide a lower cost in the long-run.

86 Hutchison submission, p. 16.

The Commission's view

In the first instance, the Commission notes that Vodafone's proposed service description is narrower than that specified in the MTAS Pricing Principles Determination. That said, under section 152BS of the Act, the Commission notes that a carrier is legitimately within its rights to lodge an ordinary access undertaking for a subset of a declared service. Although the CCC's consultants are correct that a calling party does not control (or necessarily have knowledge of) which technology will be used to terminate a call, the Commission notes that the MTAS on Vodafone's 3G network remains a declared service. Therefore, even though the Undertaking does not cover this element of the declared service, access seekers will still have the opportunity to negotiate access to this service on commercially agreeable terms. Failing that, access seekers will have the option of seeking recourse via the arbitration process available under Part XIC of the Act. In this context, the Commission notes that acceptance of the Undertaking with respect to the MTAS on Vodafone's 2G network would not constitute acceptance of these terms and conditions with respect to the MTAS on Vodafone's 3G network.

On the subject of whether a 'forward-looking' per-unit cost estimate for the MTAS should be based on 2G, 3G costs, or some combination of the two, the Commission considers that an estimate of the efficient forward-looking costs of providing the MTAS should, ideally, be based on the most efficient technology available. In the Commission's view, such an approach is likely to promote efficient build/buy choices for MNOs, and provide incentives that would promote productive and dynamic efficiencies. In this regard, and in contrast to Vodafone's position, the Commission considers that 3G is likely to result in lower per-unit MTAS costs over the longer-term. Therefore, it could reasonably be considered the 'most efficient' and best-in use technology currently available to MNOs.[87] .

That said, [c-i-c] the Commission considers that, at this time, it is not practical or desirable for an MNO such as Vodafone to derive long-run 3G network costs from its own top-down cost data, and that c-i-c.[88] Therefore, in this respect, Vodafone's approach appears appropriate for the proposed Undertaking period. Having said this, the Commission agrees with the view that Vodafone's 2G/2.5G costs should be considered a 'ceiling' to the forward-looking efficient costs of an efficient operator providing the MTAS.

5.1.5. The use of a 'tilted annuity' approach

PwC converted Vodafone's 'network asset' costs into annualised costs using a 'tilted annuity' formula which reflects 'changes in the value of assets over time'.[89] PwC submits that the use of an alternative 'economic depreciation approach'[90] could result in a higher per-unit estimate for the MTAS.[91]

---

87 This is based on the likelihood that a 3G site will support much greater traffic volumes and will facilitate a wider suite of services (i.e. voice and high-speed data) over which costs can be recovered and Analysys's advice (p. 14) that '3G will result in lower average unit costs than 2G' as well as evidence provided by submitters to this effect.

88 Analysys, p. 11.

89 PwC Report, p. 5

90 PwC notes that 'economic depreciation' is defined as the change in the value of an asset from one period to the next, and is the theoretically appropriate basis for determining the annualised costs of

In contrast, PwC employs a 'straight-line accounting depreciation' approach for Vodafone's non-network assets. PwC submits that the use of a tilted annuity approach is not possible for these assets because of unavailable data on replacement costs and useful lives. That said, PwC does not expect the different approaches used to represent a 'material distortion … because the net book value of network assets is approximately c-i-c % of total assets'.[92]

Submitters' view

On behalf of Hutchison, MJA submits that, from a theoretical point of view, the correct depreciation approach is 'economic depreciation' and that while 'it may be argued that a tilted annuity approach gives a reasonable proxy to the results of economic depreciation, this may not always be the case'.[93] Moreover, while MJA does not reject PwC's observations that use of a tilted annuity approach will *understate* annualised capital costs compared to an economic depreciation approach, it does point out that tilted annuities may also *overstate* the annualised capital costs.[94] It considers that the key point to note is that at any point in time annualisation profiles will differ. That said, it considers that international experience suggests that Vodafone is broadly on a point on the cost recovery path where the annualisation charge derived from tilted annuities and economic depreciation would be 'fairly similar'.[95]

The Commission's view

The Commission notes PwC's view that its use of a tilted annuity formula is likely to understate annualised capital costs compared to if it used an economic depreciation approach. The Commission also notes MJA's observations that this will not necessarily be the case and depends on where the relevant assets are on their respective cost recovery paths.

Based on the available evidence, the Commission notes that it is theoretically possible for the use of a tilted annuity approach to either *overstate* or *understate* annualised network asset costs compared to an economic depreciation approach. Moreover, PwC has not provided detailed supporting evidence to substantiate its claim that its approach is necessarily conservative. For this reason, the Commission is inclined to broadly agree with the view expressed by MJA that the use of a tilted annuity approach does not overstate or understate annualised network asset costs, given Vodafone's current position with respect to cost recovery.

The Commission also notes that there is an inconsistency in the PwC model in that it adopts a straight-line depreciation approach to calculate annualised costs associated with non-network assets which are valued in historical cost terms. Based on the advice of Analysys, however, the Commission agrees with Vodafone that the use of

---

service provision. PwC notes that this approach was used in models in Sweden and Greece although it is extremely data intensive.

91 In this regard, PwC notes (p. 5) that experience in the UK suggests that the adopted tilted annuity approach may, other things equal, understate the annual capital costs in current and future years when compared to an 'economic depreciation approach' (which is also termed a 'cash-flow based approach' in the PwC Report)

92 PwC Report, p. 11.

93 Marsden Jacob Associates, p. 26

94 Marsden Jacob Associates, p. 28.

95 Marsden Jacob Associates, p. 28.

different depreciation profiles in this context is c-i-c.[96] The actual calculations made by PwC in using its tilted annuity formula are considered in section 5.2.1 below.

5.1.6. Conclusion on model approach

Overall, the Commission considers that PwC's approach to modelling the costs of supplying the MTAS in Australia is likely to tend towards overstating the 'efficient' costs of providing the MTAS in Australia. The reasons for the Commission reaching this view are that:

- the use of a top-down FAC approach based on Vodafone's data is likely to tend toward overstating the 'forward-looking efficient economic costs' of providing the MTAS. This is because, in the absence of any adjustments, a top down FAC model allocates *all* costs incurred by an operator, whether they are incurred efficiently or not;
- in its view, the most appropriate benchmark for modelling 'forward-looking efficient MTAS cost is that of the 'most efficient operator'. Based on the available information, the Commission cannot reach a definitive view on the size and/or structure of the most efficient provider of the MTAS. However, to the extent that Vodafone is not the most efficient MNO in the Australian market, the Commission considers that cost estimates based on its GSM network are likely to tend towards overstating the forward-looking efficient economic costs of providing the MTAS in Australia;
- the PwC model uses Vodafone's 2002-03 data to estimate the 'forward-looking efficient costs' of providing the MTAS, and without any adjustments, applies this estimate (16.15 cpm) to the period 1 January 2007 onwards. In this Commission's view, this approach likely to overstate, significantly, the costs of providing the MTAS for the period to which the target price of 16.15 cpm relates; and
- PwC's estimate is based on 2G/2.5G technology. Although it was not practical for Vodafone to have modelled its per unit 3G costs, the Commission considers it likely that per-unit 3G costs for providing the MTAS will be lower in the long-run than per-unit 2G/2.5G costs. Therefore, the Commission agrees with its consultant, Analysys, that in this regard PwC's estimate should be considered a c-i-c to the 'forward-looking efficient economic costs' of providing the MTAS.

5.2. The assessment of the PwC model inputs

This section assesses some of the PwC model inputs, which are based on Vodafone's 2002-03 data.[97] There were multiple steps involved in PwC deriving its 16.15 cpm estimate for the MTAS. While this section is not intended to provide an exhaustive

---

[96] Analysys, p. 15.

[97] As noted previously, the PwC model allocates Vodafone's costs to the following six services: 'subscription', 'outgoing calls', 'on-net calls', 'incoming calls', 'SMS messages and 'GPRS'. Costs are allocated either directly via 'routing' or 'usage' factors, or indirectly through equi-proportionate allocations. In addition, the relevant traffic volumes are determined for each service (on a per minute basis) in order to derive a per-minute estimate – including the 16.15 cpm estimate for Vodafone's 'incoming' service – that is, the 'MTAS'.

discussion in this regard, it will consider some of the key steps, including the estimation of costs for the 2002-03 financial year, the allocation of costs to the relevant services and the estimation of traffic volumes for each relevant service.

5.2.1. The estimation of costs

There are two broad types of costs in the PwC model – *network* and *non-network* costs. Within these categories, both *capital* and *operating* costs are identified separately. The different cost categories are shown in Table 5.2 below.

Table 5.2: Cost categories and method for determining/sourcing these costs

	Network	Non-network
Capital (Asset)	Vodafone's network capital (asset) costs were re-valued on a current cost or 'gross replacement cost' (GRC) basis. They were then 'annualised for 2002-03 using a 'tilted annuity approach'.	Vodafone's non-network capital costs are provided as an input into the PwC model without further explanation. However, in contrast to 'network capital cost' they are annualised using a 'straight-line depreciation approach'.
Operating	Vodafone's operating costs for 2002-03 were sourced directly from Vodafone's general ledger and were split between 'network' and 'non-network' cost categories.	Vodafone's operating costs for 2002-03 were sourced directly from Vodafone's general ledger and were split between 'network' and 'non-network' cost categories.

Some of the key steps/issues involved in the derivation and/or estimation of these cost categories are considered below.

Network capital asset costs – converted to 'current costs'

Vodafone's network capital assets are revalued on a 'current cost' or 'gross replacement cost' (GRC) basis. Vodafone submits that the PwC model:

> … is underpinned by current cost valuation principles to ensure a closer approximation of forward-looking efficient economic costs … This asset valuation has been conducted on the basis of Vodafone's current network architecture… [98]

PwC submits that 'the current cost valuation is based upon the actual deployment of Vodafone's network (in terms of existing equipment quantities in the network)'.[99] PwC also submits that such an approach – 'where the outputs from an 'optimised' model are reconciled to actual operational data – is consistent with the approaches being adopted by other regulators (for example, the PTS in Sweden) in arriving at estimates of the efficient costs of service provision'.[100]

The 'current cost' or GRC of each network capital asset was determined by the following equation; '*number of units in operation* x *unit cost'*.

With respect to the 'number of units in operation', Vodafone has indicated that these values represent the 'average' number of units in 2002-03.

The 'unit cost' of each asset relates to the 2002-03 financial year.[101] They are stated to be 'consistent with Vodafone's Global Price Book'.[102] An analysis of the underlying PwC model material[103] indicates that c-i-c.[104]

---

98 Vodafone submission, pp. 8-9.
99 PwC Report, p. 5.
100 PwC Report, p. 5.
101 This was confirmed by Optus in a letter to the Commission dated 17 October 2005.

Submitters' views

The consultant engaged by Hutchison, MJA, submits that it is surprised at PwC's claim that its approach is 'consistent with approaches being adopted by NRAs (for example the PTS in Sweden)'. MJA submits that, clearly, 'PwC has not taken an approach even similar to that adopted by the NRA in Sweden' (where a bottom-up model was reconciled with actual operational data), nor with similar approaches in other jurisdictions. In MJA's view, the approach taken by PwC 'will only in exceptional circumstances reflect efficient forward-looking costs'.[105]

Based on the advice of its consultant, GQ-AAS, Hutchison submits that the estimated GRC of establishing a 'Picocell site' and the 'spectrum costs' appear excessive. In addition, Hutchison submits that Vodafone operates fewer base stations sites (or BTSs) than the number adopted in the PwC model.[106]

AAPT submits that adjusting the Vodafone model to reflect the effect of asset price changes over a further two years (i.e. 2003-04 and 2004-05) would have the effect of reducing the MTAS estimate to 15.13 cpm.[107]

Analysys's view

On the 'number of units in operation', Analysys notes that no information is provided to justify whether these figures are efficient for the given volume of traffic, or whether any adjustments have been made to the actual number of units deployed by Vodafone.

On the 'unit cost' determined for each asset in 2003, Analysys notes that this is purported to represent the inclusion of 'c-i-c'.

The Commission's view

On the basis of the available information, the Commission is not satisfied that the approach adopted by Vodafone to revalue its network assets necessarily generates an appropriate reflection of the current costs of acquiring these network assets today. Rather, in the absence of further detail on these calculations, the approach used by Vodafone would appear more akin with a type of 'accumulated historic cost' methodology, rather than a robust examination of the current forward-looking replacement cost of Vodafone's network assets. On this issue, the Commission notes Analysys's view that 'c-i-c'.[108] While the Commission broadly agrees with this statement, it also notes the possibility that some of the capital expenditure factored into the PwC model, based on Vodafone's specific network architecture may not be efficient. In the absence of more detailed information, however, it is not possible to fully assess the merits of the PwC approach in this regard.

---

102 PwC Report, p. 11.

103 PwC model, underlying spreadsheet titled '*assets_network*' worksheet.

104 Vodafone's network asset GRC amounts to $c-i-c million. A comparison with the historical Gross Book Value (GBV) of Vodafone's assets was provided by Vodafone, in a letter to the Commission dated 10 February 2005. In this letter, Vodafone indicated that the current cost revaluation c-i-c.

105 Marsden Jacob Associates, p. 6.

106 Specifically, GQ-AAS estimates (p. 15) that as at June 2003 Vodafone operated c-i-c base stations, compared to the c-i-c assumed in the PwC model.

107 Moreover, AAPT submits (p. 5) that this is not a full reflection of the effects as there would be other relevant price changes in both capital and operating expenditure.

108 See Analysys, p. 24.

In a letter to the Commission dated 10 February 2005, Vodafone indicated that the revaluation of its network assets c-i-c Vodafone's total GBV for 2002-03 by c-i-c per cent. Notwithstanding the Commission's concerns with the methodology applied by Vodafone, this result would appear to accord with empirical evidence which suggests that the replacement cost of GSM network assets is likely to be c-i-c than their historic cost. That said, the Commission considers that even if the results of Vodafone's 'current cost' adjustments appear to accord with other empirical information, the fact that it is based on 2002-03 data suggests that it is likely to overstate an appropriate measure of replacement cost for the period to which the Undertaking target price of 16.15 cpm relates. In the Commission's view, a more robust modelling approach would have sought to generate an estimate for the relevant year to which Vodafone's target price relates, rather than simply using an estimate based on 2002-03 data and applying this to a future time period. This issue was discussed above in section 5.1.3.

The estimation of a 'cost of capital' (WACC)

A weighted average cost of capital (WACC) was estimated by Vodafone for the purposes of PwC's modelling exercise. Vodafone estimated a nominal pre-tax WACC of c-i-c per cent, which translates to a post-tax nominal WACC of c-i-c per cent. Vodafone submits that it has calculated this WACC 'based on established regulatory and financial market principles and practices', and that specific parameters 'have been developed from analysis of comparable Australian and overseas companies providing similar services to the MTAS.[109] The specific WACC parameters used by Vodafone are shown in Table 5.3 below, alongside the parameters (where relevant) used by Optus in its undertaking with respect to its DGTA Service.

Table 5.3: Vodafone's WACC parameters

Parameter	Vodafone estimate	Optus estimate
Debt Ratio	c-i-c	c-i-c
Risk-free rate	c-i-c	c-i-c
Asset beta	c-i-c	c-i-c
Equity beta	c-i-c	c-i-c
Market risk premium	c-i-c	c-i-c
Effective tax rate	c-i-c	c-i-c
Imputation factor	c-i-c	c-i-c
Cost of equity	c-i-c	c-i-c
Debt premium	c-i-c	c-i-c
Pre-tax cost of debt	c-i-c	c-i-c
Corporate tax rate	c-i-c	c-i-c
Pre-tax nominal WACC	c-i-c	c-i-c
Post-tax nominal WACC	c-i-c	c-i-c

Notably, Vodafone has indicated that the asset beta of c-i-c was determined by reviewing international precedents where regulators have required an asset beta in

[109] Appendix 2 to the Vodafone Undertaking, p. 1.

order to set cost-reflective mobile termination rates, and its own analysis of the beta of quoted businesses (sample of 19 companies) which own mobile networks.

Submitters' views

Based on the advice of its consultant, MJA, Hutchison submits that the WACC for a mobile business as a whole is not the appropriate discount rate to apply when attempting to estimate the forward-looking efficient costs of providing the MTAS. Rather, risk-dependent parameters should be reviewed in light of the lower risk level posed by providing the MTAS as opposed to mobile services at large. On the actual WACC used in the PwC model, MJA's own analysis of the appropriate parameters yields a vanilla WACC of 9.24 per cent and a post-tax nominal WACC of 7.91 per cent. Notably, MJA recommends that a reasonable range for the asset beta is 0.7 to 1.1, and proposes a value of 0.7 for the MTAS. Other notable differences from the Vodafone estimate include MJA's recommendation of a 5 per cent market risk premium and a risk-free rate of 5.5 per cent.[110]

Telstra submits that establishing the appropriate return on capital for an MNO is difficult, largely because mobile telecommunications is a relatively new area of business and therefore has relatively higher risk than the PSTN. Telstra further submits that the approach applied by Vodafone to estimate its WACC is 'generally appropriate'.[111] That said, Telstra notes that it has not assessed the specific parameter values that Vodafone has employed.

The Commission's view

In the Commission's view, and on the advice of Analysys, the parameters that Vodafone has used to estimate the WACC all take values that c-i-c.[112] Further, the Commission notes that most of the WACC parameters applied by Vodafone appear mostly consistent with the Commission's approach to estimating the relevant WACC parameters. Notably, Vodafone has proposed a c-i-c asset beta than the Commission has previously accepted in relation to decisions with respect to Telstra's PSTN. The Commission considers that there may be intuitive reasons why an MNO would have a more risky profile than a fixed-line operator, particularly an MNO that is not also a fixed-line operator. The Commission also notes Analysys's view that c-i-c.[113] Based on this advice, the Commission notes that it does not have concerns with the value of this parameter at this stage.

Price trends for network assets

For the purposes of its model, *nominal* forward-looking asset price trends for Vodafone's 'network assets' were determined by Vodafone's procurement team. In the PwC report, it is noted that these reflect past price trends and expectations looking forward. An analysis of the underlying PwC model reveals that four different price trends were assumed (c-i-c per cent, c-i-c per cent, c-i-c per cent and c-i-c per cent per annum) for the following network asset categories shown in Table 5.4.

---

110 Marsden Jacob Associates, p. 55.
111 Telstra submission, p. 26.
112 In Analysys's view, c-i-c.
113 Analysys, p. 32.

Table 5.4: Forward-looking price trends used in PwC model

Price trend applied	Network asset category
c-i-c per cent per annum	- Radio site acquisition, preparation and lease - Switching site acquisition, preparation and lease - Indirect customisation, integration and OSS assets
c-i-c per cent per annum	- Backhaul microwave links - Switch software - Switch ports - Home Line Register (HLR) - PCU - GSM License Fee - Various indirect assets
c-i-c per cent per annum	- Repeater site acquisition, preparation and lease - Base Transceiver Station (BTS) equipment - STP, MMS, GSNs and Live! Platform - Digital cross connect (DXX) and SDH transmission - Various indirect asset hardware
c-i-c per cent per annum	- TRX - Base Station Controller (BSC) base unit - Mobile Switching Centre (MSC) base unit - Voicemail, IN, Wireless Access Protocol (WAP), Short Message Service Centre (SMSC)

Submitters' views

On behalf of Hutchison, GQ-AAS considers that the estimated price trends of c-i-c per cent for most radio and transmission equipment is 'relatively high' which would lead to higher annual costs of supplying the MTAS.[114] In addition, in relation to base station costs, MJA notes that it is unclear whether Vodafone has taken into account cost differences between 'installation' and 'equipment' costs.

The Commission's view

On the c-i-c, the Commission does not have any concerns at this stage with the price trends used in the PwC model.[115]

Asset lifetimes

For the purposes of its model, Vodafone also estimated a useful economic lifetime for each relevant network asset. These estimates can be summarised as:

- c-i-c years for major network assets such as sites, BTS, BSC, MSC, software and transmission;
- c-i-c years for non-voice and data service switches;
- c-i-c years for NMSC and indirect network elements; and
- c-i-c years for the GSM licence fee.

Submitters' views

In it report for Hutchison, GQ-AAS notes its view that the economic lives estimated by Vodafone for a number of the asset classes are much lower than it would expect, and considerably lower than economic lives used in other jurisdictions.[116]

---

[114] GQ-AAS submission, p. 15.
[115] See Analysys, pp. 26-27.
[116] GQ-AAS submission, p. 15.

Specifically, it considers that economic lives for 'base transceiver stations' (BTSs) and 'buildings' (i.e. such as switch buildings) should be c-i-c years and not c-i-c as proposed in the PwC model.[117] Moreover, MJA submits that its comparison of the asset lives in the PwC model with those in publicly available models indicates those proposed by Vodafone are 'too short' and will 'tend to overstate annualised costs'.[118]

Analysys's view

In Analysys's view, the economic lifetimes assumed by Vodafone are 'for the majority, broadly reasonable, though they lie at the low end of expected ranges'.[119] However, Analysys queried the c-i-c year life for 'radio site and other network buildings' and the c-i-c year life for the 'GSM licence fee' with Vodafone.[120]

On the c-i-c year life attributed to radio site and other network buildings, Vodafone indicated that this represents an c-i-c and has been confirmed by its independent auditors as appropriate. Vodafone also indicated that this overall figure of c-i-c years is effectively an average of c-i-c years for the average c-i-c. In addition, Vodafone also cites various risks to long-term site deployments. In reply, Analysys firstly notes that it would expect that:

> [c-i-c].[121]

Analysys also notes that:

> [c-i-c].[122]

Finally, Analysys observes that c-i-c.

With respect to the c-i-c year life attributed to the GSM licence fee, Analysys considers the approach to estimating this is 'reasonable', although the weighted average of these assets is actually c-i-c years as opposed to c-i-c.[123]

The Commission's view

On the advice of Analysys, the Commission considers that while most of the asset lifetimes used in the PwC model appear appropriate, those attributed to 'radio site and other network buildings' appear too short and should more properly be in the region of c-i-c years. The Commission notes that the adjustment of these asset lifetimes would, other things equal, reduce the annual depreciation costs associated with these assets. This is because these network asset costs would be spread over a longer period. Moreover, the adjustment of these asset lifetimes in the manner suggested above would also, other things equal, lead to a reduction in the per-unit estimate of the MTAS in the PwC model. Analysys estimates that this reduction in per-unit MTAS costs could be in the order of 4 per cent.[124]

---

117 GQ-AAS notes (p. 16) that its estimate is consistent with the economic lives used in the Swedish MTAS cost model.

118 Marsden Jacob Associates, p. 27.

119 Analysys, p. 28.

120 Clarification was sought on these points in a letter from the Commission to Vodafone on 3 October 2005. Vodafone responded to this letter on 17 October 2005.

121 Analysys, p. 29.

122 Analysys, p. 29.

123 Analysys, p. 29.

124 Analysys, p. 7.

Use of a 'tilted annuity approach' to generate annualised network capital costs

As noted above, to convert the GRC network asset values into annual depreciation costs, PwC applied a 'tilted annuity'. This required a number of inputs, including the GRC of each network asset, the WACC, forward-looking price trends, useful lives and the period from time of payment to commencement of productive services (assumed to be c-i-c for each asset). The Commission has already expressed certain concerns with some of these inputs. To avoid repetition, however, these concerns are not repeated or referred to in this section.

Submitters' views

AAPT submits that PwC's use of a tilted annuity contains a coding error which has a 'significant' effect in the conversion of the GRC assets values into annualised costs for 2002-03. AAPT further submits that there is a coding error in the allocation of Vodafone's 'indirect costs. AAPT notes that the effect of correcting for these two apparent errors is to reduce the per unit MTAS estimate from 16.15 cpm to 15.52 cpm.[125] AAPT considers that these errors alone 'are a sufficient basis to reject the Vodafone undertaking'.[126]

Analysys's view

Analysys observes that the calculation used in the PwC model to estimate the tilted annuity does not correspond to the formula PwC claims to have used. Analysys further observes that, assuming that all the other parameters in the model are correct and/or 'reasonable', correcting for this apparent error would, all other things equal (and correct), reduce the MTAS charge by almost 6 per cent.[127]

In relation to the 'period to commencement' input of c-i-c for each asset, Analysys notes that it would expect this delay to be non-existent for some assets and longer for other assets. That said, Analysys considers that an exercise to calculate time-to-service delays for each asset class is 'unlikely to significantly change the final results'.[128]

The Commission's view

The Commission notes that the tilted annuity in the PwC model appears to contain a coding error which results in the overstatement of Vodafone's network capital costs for 2002-03. The Commission also notes that, on the advice of Analysys, the correction of this error appears to reduce Vodafone's per-unit estimate for the MTAS by 6 per cent. Since the original lodgement of its Undertaking, Vodafone has provided the Commission with a revised version of the PwC model based on 2003-04 data. Although this revised model has not been assessed in detail for the purposes of this draft report, notably, it corrects the original error in the tilted annuity formula.

Other cost categories

Non-network asset costs

Vodafone provides no supporting information of 'non-network asset costs' to allow the assessment of whether the level of costs incurred for each category is efficient. To

---

125 AAPT submission, August 2005, p. 4.
126 AAPT submission, August 2005, p. 6.
127 Analysys, p. 7.
128 Analysys, p. 34.

generate annualised non-network asset costs, the PwC model adopts a 'straight-line' depreciation approach. Analysys notes that this differs from a tilted approach (applied for network asset costs) because there is no revaluation of GBV in GRC terms and different timing of annualised cost recovery.

For non-network assets, however, Analysys expects real-term price trends in the region of c-i-c per cent per annum. Therefore, Analysys expects that the failure to revalue in GRC terms will only make a small difference, provided GBV refers only to assets in current use. On the second difference, Analysys notes that to understand the implications requires comparison of accounting and economic depreciation methods, however its own analysis appears to indicate that the difference may not be significant.

Operating costs

Vodafone's *network* and *non-network* operating expenditures for 2002-03 are provided as inputs to the PwC model without supporting information to determine whether these costs have been efficiently incurred. With respect to *network* operating costs, Analysys submit that the 'level and categorisation' of these costs c-i-c.[129] It does not comment explicitly on the magnitude of these costs.

The Commission's view

The Commission notes that these costs are provided as inputs to the PwC model without any supporting evidence that they reflect those that would be incurred by an efficient MNO. Rather, Vodafone provides the caveat that its data should be considered 'efficient' in this context due to competitive pressures in the mobile industry in Australia. However, this assertion would appear inconsistent with evidence that Vodafone (based on the PwC model) is less efficient than at least one other MNO in Australia (Optus – based on the model prepared by CRA) in the supply of the MTAS on its GSM network. In the Commission's view, on the basis of the available information, it cannot conclude that Vodafone's costs necessarily reflect those that would be incurred by an efficient MNO, which is the appropriate basis for comparison in this context.

5.2.2. Allocation of costs

In the PwC model, costs are allocated either *directly* or *indirectly*. Where costs can be attributed to a particular service, they are allocated on a direct basis. Where they cannot, they are allocated on an indirect basis via a multi-stage EPMU approach.[130] This was illustrated in Figure 5.1 above. Some of the key issues surrounding the allocation of these costs are discussed below.

Direct allocation of network asset costs using routing factors

In the PwC model, Vodafone's network capital asset costs total approximately $c-i-c million. Those allocated *directly* ($c-i-c million) were allocated via the use of routing

---

[129] Analysys, p. 46.

[130] First, indirectly allocated *network* costs are allocated to Vodafone's network services (i.e. all service except 'subscription') based on the proportion of directly allocated network capital costs allocated to each service in the first instance. Second, indirectly allocated *non-network* costs are allocated across all six services in the PwC model based on the proportion of total network costs previously allocated to each service.

factors.[131] These, based on engineering measurements drawn from Vodafone's actual network, are shown in Table 5.5 below.[132]

Table 5.5: Routing factors used in PwC model

Network infrastructure category	Outgoing (off-net)	Outgoing (on-net)	SMS	GPRS	Incoming
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
c-i-c	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c

The application of these routing factors results in relatively more of Vodafone's network capital costs being allocated to the 'incoming' service – otherwise termed the 'MTAS'.[133]

Submitters' views

GQ-AAS notes that some GSM network routing factors are 'universal' (i.e. such as BSC) while others depend on the 'particular network architecture and technology' (i.e. such as MSC and backbone transmission).

On Vodafone's routing factors for its 'incoming' service, GQ-AAS notes that those attributed to c-i-c could be c-i-c to reflect that a proportion of calls do not reach a mobile handset. In GQ-AAS's view, it would not be unreasonable to assume that more than c-i-c per cent of incoming calls are not answered and therefore that, as a 'conservative' estimate the relevant routing factors could be c-i-c. GQ-AAS submits that this alteration would reduce the cost of the MTAS 'substantially'.[134]

In addition, GQ-AAS submits that Vodafone's GSM technology is less traffic efficient than other forward-looking technologies and that, therefore, more traffic elements on BTSs are required to handle the traffic. Furthermore, GQ-AAS notes that significant decreases in the cost of optic fibre and digital microwave transmission has changed network routing architectures of efficient networks 'dramatically'.[135]

---

131 Routing factors are used to reflect the notion that various services will use Vodafone's GSM network elements with varying intensity.

132 In the PwC Report it is further noted (p. 8) that where the necessary network engineering data have not been available, the figures have been estimated by Vodafone's network engineers.

133 Notably, the total of the costs allocated to the MTAS (approximately $c-i-c million) does not reconcile with the $c-i-c million figure cited above. This is because the PwC model appears to erroneously allocate $c-i-c costs associated with the Short Message Service Centre (SMSC) as a 'network indirect' cost, rather than as a direct cost to the SMS service. Vodafone confirmed this error in a letter to the Commission dated 10 June 2005. The correction of this error would appear to result in a reduction (i.e. 16.15 to 16.08 cpm) to the per-unit estimate of the MTAS for 2002-03.

134 GQ-AAS submission, p. 29.

135 For example, GQ-AAS notes (p. 30) that older networks are often designed with a large number of base station controllers so that the transmission distance between the base stations and the base station controllers is minimised. This network design is a balance between base station controllers and transmission costs. However, as the cost of transmission has fallen, the equation for the design

GQ-AAS concludes that the routing factors used in the PwC model are derived from a network than was operational in 2002-03, and is most likely different in traffic routing architecture from a forward-looking efficient network.[136]

Telstra considers that the use of routing factors is appropriate and has itself used this approach in relation to the PSTN. Telstra is of the view that Vodafone's approach is 'sensible' and a 'reasonable' way to reflect network usage, although it has not assessed the specific routing factors and 'at this stage cannot comment on their reasonableness'.[137]

Analysys's view

Analysys considers that the routing factors provided by Vodafone appear 'broadly reasonable' and 'consistent' with its expectations of mobile network routing factors. That said, Analysys identified some concerns with some of the routing factors used in the PwC model. Specifically, Analysys noted that:

c-i-c

A clarification on these issues was sought from Vodafone on 3 October 2005.

Vodafone reply[138]

Vodafone agreed that the routing factor attributed to on-net c-i-c should have been c-i-c instead of c-i-c.[139] In relation to the c-i-c routing factors, Vodafone notes that for voicemail messages it offers its customers a call back option (RingAlert) which is free. Therefore, Vodafone considers that c-i-c.[140] c-i-c Moreover, it is not aware of any other cost model (i.e. UK, Sweden, Greece, Israel, Tanzania) adjusting radio routing factors for this effect.[141]

The Commission's view

The application of the set of routing factors supplied by Vodafone results in relatively more network capital costs being allocated to the MTAS than to mobile 'outgoing' services. While not a concern *per se*, this highlights the importance of ascertaining whether the routing factors applied in the PwC model are appropriate. The Commission considers that there are four reasons which would tend to suggest that these routing factors will overstate MTAS costs.

Firstly, the Commission agrees with the proposition that an appropriate set of routing factors would take into account the fact that some proportion of incoming calls (estimated at c-i-c per cent by GQ-AAS) would not be answered, and would therefore not use network elements associated with the BSC and BTS (together sometimes referred to as the Base Station Sub-system (BSS)). Given that Vodafone's set of routing factors c-i-c the costs attributed to the MTAS are likely to be overstated. On this issue, Vodafone suggests that its mobile subscribers receive some proportion of their voicemail messages automatically for free, and that therefore c-i-c. However,

---

of an efficient network has changed and an efficient forward-looking network could be designed with fewer base station controllers and longer transmission links between the network switches.

136 GQ-AAS submission, p. 31.

137 Telstra submission, p. 22.

138 Vodafone, Letter to the Commission, 17 October 2005.

139 Vodafone, Letter to the Commission, 17 October 2005, p. 7.

140 Vodafone, Letter to the Commission, 17 October 2005, p. 7.

141 Vodafone, Letter to the Commission, 17 October 2005, p. 7.

some Vodafone subscribers will opt to retrieve their voicemail messages at their own discretion, and therefore, via an additional payment. Moreover, Vodafone's explanation does not account for the fact that some incoming calls that are diverted to voicemail will occur without the deposit of a voicemail message by the calling party.

Secondly, Vodafone's admission that a routing factor of c-i-c, rather than c-i-c, should be used for the c-i-c would, other things being equal, suggest that the network capital costs allocated to the MTAS will be overstated. This is because, in relative terms, this adjustment would mean that relatively fewer costs would be attributed to the MTAS ('incoming' service).

Thirdly, in relation to the c-i-c network element, the Commission considers that it is not immediately clear from the information provided by Vodafone as to why the routing factor for 'incoming' (c-i-c) is greater than the one estimated for origination (c-i-c). The Commission acknowledges that, to some extent, there are likely to be greater network costs associated with an incoming versus an outgoing call because the former needs to locate the called party via use of the Home Line Register (HLR). However, the Commission notes that this effect is captured by c-i-c. To the extent that this discrepancy cannot be satisfactorily explained, the Commission considers it a further reason to conclude that network capital costs allocated to the MTAS have been overstated.

For these reasons outlined above, the Commission considers that the magnitude of network capital costs allocated to the MTAS in the PwC model are likely to be overstated, although without further information the empirical significance of this overstatement is unclear.

Other cost allocations

Allocation of network operating costs

In the PwC model, network operating costs are allocated to service categories as shown in Table 5.6 below.

Table 5.6: Network operating costs

Operating expenditure	Service allocation
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c
c-i-c	c-i-c

In Analysys's view, these allocations are logical, although 'a more accurate unit cost could be achieved by breaking down the last four categories (accounting for c-i-c of network operating expenditures) into more detailed service categories.[142]

[142] Analysys, p. 40.

Split of non-network 'asset costs

Non-network capital asset costs of $c-i-c million are identified in the PwC model and are allocated either to the 'subscription' service or as a non-network indirect cost (EPMU mark-up). Some of the non-network asset classes are split further as shown in Table 5.7 below.

Table 5.7: Non-network asset allocations

Category	Retail	Non-network
Furniture and fittings	c-i-c	c-i-c
Computers	c-i-c	c-i-c
Billing	c-i-c	c-i-c

In effect, this split determines those costs which are included in the PwC model (i.e. those allocated to 'non-network') and those which are excluded from the PwC model (i.e. 'retail'). Therefore, the allocations can be an important determinant of the MTAS estimate.

Analysys notes that the c-i-c per cent of billing costs identified as non-network is stated as a non-Australian Vodafone benchmark. Analysys further notes that it is evident from the classifications provided by Vodafone that 'explicit business overhead wages account for only c-i-c % of non-network staff costs'. Based on this, Analysys questions the allocation of c-i-c per cent and c-i-c per cent of Furniture and Fittings (F&F) and computers, respectively, to network indirect costs (the equivalent of business overheads in the subsequent allocations). In this regard, Analysys believes that it would be more accurate for Vodafone to identify a proportion of the c-i-c per cent and c-i-c per cent factors that relate specifically to business overhead activities compared to retail activities. Analysys considers that this refinement would include Vodafone sub-dividing the activities of the staff categorised as 'non-network staff' in order to identify the staff time or headcount dedicated to 'business overhead activities' (legal, regulatory, government affairs, human resources, Ericsson JV, wholesale activities) and 'retail activities' (retail customer care, retail sales and retail marketing).

Split of non-network operating costs

Non-network operating costs of $c-i-c million are identified in the PwC model and allocated either to the 'subscription' service (direct) or as a non-network indirect cost (EPMU mark-up). Two categories of non-network operating costs are split further:

- non-network (IT, buildings, fixtures) staff: c-i-c per cent retail, c-i-c per cent non-network; and
- other operating expenditure: c-i-c per cent retail, c-i-c per cent non-network.

The non-network allocation for IT, buildings and fixtures is the same as in the previous section and is based on estimates used by Vodafone in the UK. Analysys notes that the split of non-network staff is in the same proportion as it questioned in the section above. In Analysys's view, it should be possible to more accurately separate the non-network staff cost into its component activities – in particular identifying business overhead activities separately from retail-related activities.

The Commission's view

The Commission notes Analysys's view that it should have been possible for PwC to more accurately separate out those non-network costs which relate to business overheads, and those that relate to retail activities. Moreover, the Commission notes

Analysys's conclusion that making this adjustment to the PwC model could yield up to a 15 per cent reduction in the per-unit cost of the MTAS if significant costs are allocated to retail activities. Based on this advice, the Commission believes that the current allocations of non-network costs in the PwC model would tend to suggest that the per-unit estimate of the MTAS has been overstated, although the magnitude of this overstatement is unclear without further information.

5.2.3. Volumes used in PwC model

The service volumes used in the PwC model are based on Vodafone's 'average' volumes for 2002-03. They are shown in Table 5.8 below in comparison with service volumes provided by Vodafone for 2002-03 under the RAF.

Table 5.8: Service volumes used in the PwC model compared to RAF data

	Subscribers	Outgoing (mins)	On-net (mins)	SMS & GPRS (mins equivalent)	Incoming (mins)
PwC model	c-i-c	c-i-c	c-i-c	c-i-c	c-i-c
Vodafone RAF data for 2002-03	c-i-c	c-i-c*	c-i-c*	N/A	c-i-c**

* These have been split between 'outgoing' and 'on-net' based on the proportion assumed in the PwC model

** This reported figure is stated to include c-i-c.

Service volumes associated with SMS (number of messages) and GPRS (number of megabytes) were converted into 'minute' equivalents and then combined. In the PwC Report, it is noted that this was achieved 'using the standard conversion calculation'[143] that has been used in costing models in the UK, Sweden and Greece.[144]

Submitters' views

Hutchison submits that the conversion equations used for SMS and GPRS are reasonable given the lack of publicly available data on average SMS message length and GPRS megabyte usage. However, Hutchison further submits that because the use and length of these mobile data services is likely to increase in the future, so will the proportion of costs attributable to these services, thereby reducing the costs of providing the MTAS.

On behalf of Hutchison, GQ-AAS submits that it does not believe that the model suitably compensates for the fact that investment in network elements required to carry SMS and GPRS traffic will be substantially less than the investment in network elements required to carry voice.[145]

Analysys's view

In its report prepared for the Commission, Analysys notes that the conversion factors used by PwC were developed by Analysys in 2001 for (then) Oftel's LRIC model in the UK. However, Analysys notes that Vodafone should be in a position to supply more accurate information on how its network support SMS and GPRS traffic and, in

---

143 In the PwC Report, it is noted that (p. 8) the use of these equations yields the result that one minute of a voice call is equivalent to 144 SMS messages or 0.095 megabytes of GPRS data.

144 PwC Report, p. 7.

145 GQ-AAS, p. 18.

particular, whether SMS and GPRS traffic is carried over specific (dynamic or static) channel reservations. Analysys concludes that some refinement could be made to the application of SMS and GPRS conversion for traffic versus event specific network element loading.[146]

The Commission's view

As shown in the Table 5.10 above, the service volumes used in the revised PwC model do not reconcile with those provided to the Commission under the RAF. However, when the appropriate adjustments are made to these data it is not clear that these discrepancies will materially impact on the per unit estimate for the MTAS. That said, it is important to reiterate in this context that the PwC model is based on 2002-03 data, and does not attempt to adjust these data forward to the point when its undertaking is proposed to commence (1 January 2005), let alone to the period to which its 'target' price will apply. This is an important issue given empirical evidence that service volumes are likely to grow relatively faster than costs over the relevant period.

On the conversion factors used by PwC for SMS and GPRS, the Commission notes Analysys's advice that these are consistent with those used in Analysys's own modelling. However, the Commission also notes Analysys's advice that Vodafone 'should be in a position to supply more accurate information on how its network support SMS and GPRS traffic and, in particular, whether SMS and GPRS traffic is carried over specific (dynamic or static) channel reservations'. Notwithstanding this, the Commission is not able to reach any definitive conclusions on how these refinements would impact on the MTAS estimate.

5.2.4. Conclusion on PwC model inputs

Even if PwC's conceptual approach were to be considered appropriate, the Commission considers the model is populated with certain inputs, assumptions and errors which suggest that 16.15 cpm significantly overstates the 'forward-looking efficient economic costs' of supplying the MTAS on Vodafone's GSM network. These include:

- notwithstanding the Commission's concerns with the methodology employed to revalue network assets in 'current cost' terms, the PwC model fails to account for whether these estimates are likely to be appropriate for 2006-07-and beyond. To the extent that per-unit asset costs are likely to be relatively less in later years (most of the asset price trends assumed by Vodafone would tend to lend weight to this view) this suggests that PwC's estimates have been overstated;
- the asset lifetimes for 'radio site equipment and buildings' of c-i-c years appears too short and should more appropriately be c-i-c years. The use of more appropriate asset lives for these assets would reduce the per-unit MTAS estimate by 4 per cent;
- an error in the 'tilted annuity' equations performed by PwC suggests that the per-unit MTAS cost has been overstated by 6 per cent;

[146] Analysys, p. 6.

- the non-network asset costs and operating (network and non-network) costs used as inputs into the PwC model are based on Vodafone's historical cost data, and there has been no attempt to remove any elements of inefficiency from these data. Moreover, there is no supporting evidence that these costs are necessarily those that would be incurred by an efficient operator;
- the routing factors used in the PwC model would tend to suggest that relatively too many capital network costs have been allocated to the MTAS, implying that the per-unit MTAS estimate is overstated;
- the incorrect allocation of SMSC costs suggest that the per-unit MTAS estimate has been marginally overstated (i.e. by 0.43 per cent);
- Analysys's view that a more accurate separation of 'retail' and 'business overhead' non-network costs could yield as much as a 15 per cent reduction in the MTAS estimate if significant costs are allocated to retail activities.

5.3. Conclusion on Vodafone's empirical cost estimate

The Commission is of the view that the conceptual approach adopted by PwC to model Vodafone's MTAS costs is likely to err on the side of overstating the forward-looking efficient costs of supplying the MTAS in Australia. That said, even if the conceptual approach applied by PwC is considered appropriate, the Commission has concerns with a number of the model inputs and assumptions in the CRA model, and has also identified errors in particular calculations. These concerns, assumptions and errors all tend to suggest that even if the Commission's reservations about the conceptual approach were overcome, 16.15 cpm is likely to very substantially overstate the 'forward-looking efficient economic costs' of supplying the MTAS in Australia.

6. Vodafone's FTM pass-through safeguard

As noted in Chapter 1, the Vodafone Undertaking terms and conditions include a 'pass-through safeguard'. This requires that, as a pre-condition to an access seeker receiving Vodafone's proposed lower prices for the MTAS, an access seeker must reduce the prices it charges end-users for FTM calls to at least the prices specified in a 'retail FTM price adjustment path' included in the Undertaking (and shown in Table 1.2 of this report). If an access seeker does not reduce its FTM prices in accordance with this retail FTM adjustment path, it is required to pay Vodafone a rebate.

This chapter details the nature of this 'pass-through safeguard', assesses the extent of pass-through that is likely to occur without the safeguard, considers the nature of the market within which FTM services are provided, considers the appropriateness of the inclusion of such a mechanism in a Part XIC access undertaking and also has regard to the practicalities of implementing the specific FTM safeguard proposed in the Undertaking.

6.1. The pass-through safeguard mechanism

As outlined in Chapter 4, Part C of the Service Schedule to the Access Agreement deals with what is referred to by Vodafone as the 'pass through principle'. This part of the Service Schedule outlines that:

> The aim of this Part C is to ensure that end-users who make fixed to mobile calls realise the benefits of reductions in Usage Charges by ensuring those reductions are passed through to end-users or customers in the form of reduced retail rates for fixed to mobile calls. This benefits end-users or customers of fixed to mobile calls, since they will enjoy price reductions, as well as providers of fixed to mobile calls and providers of mobile termination services, since the volume of originated and terminated calls is likely to increase if the retail price falls (**Pass Through Principle**).

Vodafone states that the pass-through safeguard involves the following:

- setting out an adjustment path to the target Usage Charge for the MTAS price over the term of the Undertaking;
- a FTM retail price path calculated using an estimate of the current average FTM price in the market as the starting point and with a target price equal to the service target Usage Charge for the MTAS plus a 'conservative estimate' of the cost of fixed origination and termination; and
- linking proposed reductions in Usage Charges for the service to an access seeker gradually reducing its average retail FTM prices to 'competitive levels.' According to Vodafone, if access seekers are offering FTM retail prices at competitive levels, they are likely to be pricing the FTM service well below the pass-through safeguard price path and thus the pass-through safeguard would have no effect.

6.1.1. The Pass Through Obligation

Clause 2 of the Service Agreement sets out the 'Pass Through Obligation'. This obligation provides that access seekers must reduce their Average Retail Price (excluding GST) for calls which terminate on the Vodafone (GSM) Network during each Validity Period so that it is equal to or less than the Target Average Retail Price specified in Table 6.1 below. In other words, as a result of Vodafone reducing its

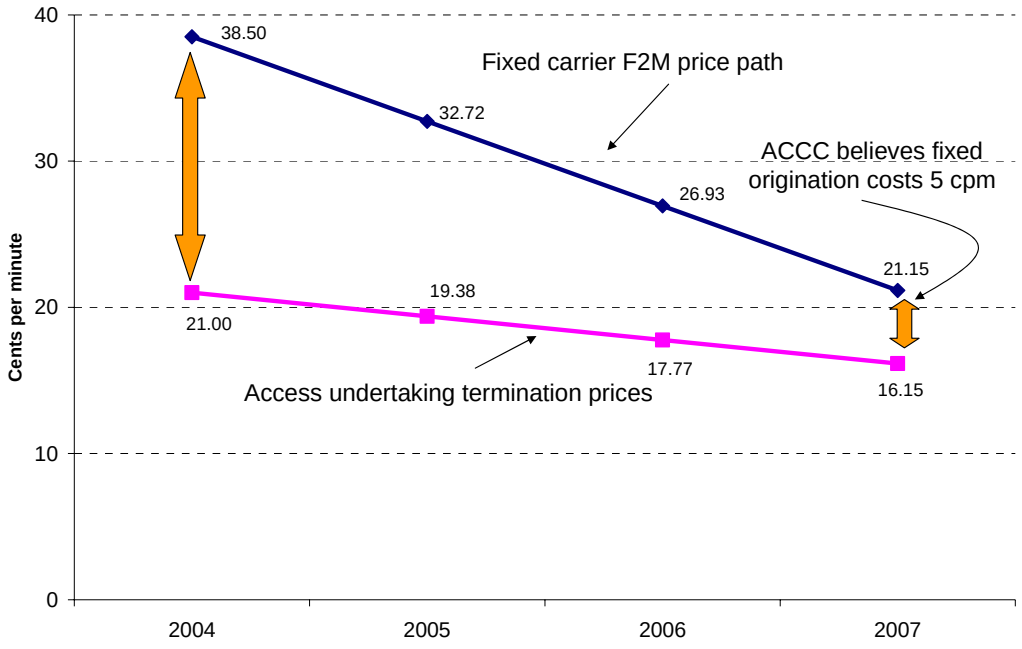
terminating access charge to fixed-line network operators as provided for in the undertaking, Vodafone has built into its undertaking a requirement that access seekers must reduce their retail FTM call charges (a measure to 'pass-through' the reduction in the MTAS price). A similar obligation does not apply to MNOs in respect of the retail prices charged to their mobile subscribers for calls to end users on Vodafone's network.

Table 6.1 Target average retail FTM price, Vodafone Undertaking

Period	Target average retail FTM price (cpm)
1 July 2004 to 31 December 2004	38.50 cpm
1 January 2005 to 31 December 2005	32.72 cpm
1 January 2006 to 31 December 2006	26.93 cpm
1 January 2007 to 30 June 2007	21.15 cpm
Any subsequent validity periods	21.15 cpm

The proposed Usage Charges for the service mapped alongside the pass-through safeguard price path is illustrated below in Diagram 6.1.

Diagram 6.1 Target MTAS price path and target average FTM retail prices



Source: Vodafone submission, p. 28.

According to Vodafone, the pass-through safeguard prices have been designed in the following manner:

- a starting FTM retail price for 2004 of 38.5 cents per minute has been established. This is sourced from the Commission's Final Decision and is an estimate of Telstra's average FTM price during 2003;[147]

[147] The Commission notes that this price does not accord with Optus's current retail price of 40.8 cpm for FTM calls.

- a target FTM retail price for calendar year 2007 has been established by 'conservatively approximating' the cost of providing a FTM call. This has been done by summing Vodafone's target Usage Charge for the Service of 16.15 cents per minute and the Commission's conservative estimate of the cost of fixed origination and transmission of 5 cents per minute. The target FTM retail price is therefore 21.15 cents per minute; and
- three equal annual decrements of 5.78 cents per minute from 2004 to 2007.

6.1.2. Compliance and pass-through disputes

The pass-through safeguard also includes a dispute resolution process. Clause 4.1 to Part C of the Service Schedule sets out that an access seeker must provide written notice to Vodafone within 20 days Business Days of the end of a Validity Period (ie. at the end of each six month period) stating whether and how the access seeker has complied with the Pass Through Obligation. Under the terms of this clause, the written notice must be signed by a Director of the access seeker.

Under 4.2, Vodafone may notify an access seeker within two months of the end of a Validity Period of a dispute, if Vodafone 'reasonably considers' that the Access Seeker has not complied with the Pass Through Obligation (the Pass Through Dispute Notice).

Clause 4.3 of the Access Agreement provides that, upon receipt of a Pass Through Dispute Notice, Vodafone and the access seeker must use reasonable endeavours to resolve the dispute. However, if they are unable to agree within 10 Business Days of the Pass Through Dispute notice then either party may refer the dispute for expert determination under clause 5 of the Access Agreement.

Vodafone describes the process as follows:

> If Vodafone reasonably considers that an Access Seeker's retail prices are above competitive levels, Vodafone may require an independent expert to verify compliance under the Expert Determination Rules of the Australian Commercial Disputes Centre (ACDC). If the expert verifies that the Access Seeker has not complied, a retrospective adjustment would be made to Usage Charges for the Service for the relevant Date Period to ensure that the Usage Charge was appropriate given the prevailing F2M retail price.[148]

The Commission also notes that, in the event the expert cannot determine the average retail price of FTM calls that terminated on Vodafone's GSM network, then it will be deemed to be the average of the access seeker's FTM calls to *all* mobile networks, as determined by the expert.

6.1.3. The pass through rebate

As Vodafone points out in its submission to the Commission, if the appointed expert under clause 5 of Part C of the Service Schedule finds that the access seeker has not complied with the FTM Pass Through Obligation then a retrospective adjustment is made to the Usage Charges (that is, the MTAS rate) for the relevant period.

This arrangement is set out in clause 6 of the Access Agreement, which provides for a 'Pass Through Rebate'. The pass through rebate is calculated as follows:

---

[148] Vodafone submission at page 28. See also Part C of the Service Schedule to the Agreement.

Conversation minutes in validity period X	×	(Usage charge for validity period X – Usage charge for last compliant validity period[149])

If the access seeker does not provide sufficient information to the expert when requested, the validity period for determining the access seeker's average retail price is validity period 1. This means that the access seeker would effectively be required to pay a rate of 21 cpm for the MTAS for the relevant period.

Accordingly, the net effect of this proposed arrangement is that, were the Commission to accept the undertaking and it became operative, Vodafone would be obliged to supply the MTAS in accordance with the terms and conditions of its Undertaking.

Vodafone would charge access seekers the Usage Charges in Table 1. Fixed-line access seekers, however, would be required to supply FTM services to their customers in accordance with the target average retail prices in Table 2 for the relevant periods. A failure by an access seeker to meet the target retail FTM prices would result in an access seeker having to pay Vodafone a pass-through rebate for the relevant period.

6.1.4. Transit traffic

Clause 7 of Part C of the Service Schedule seeks to extend the operation of the Pass Through Obligation to carriage service providers that use the access seeker to carry FTM calls that terminate with Vodafone (Transit Traffic).

For example, Primus may provide wholesale FTM carriage services for another carriage service provider (who are resellers of Primus services). Some FTM calls of that carriage service provider, for whom Primus supplies the carriage service, will terminate on Vodafone's network. Under clause 7, Primus would be obliged to ensure that each carriage service provider is also subject to the obligation to comply with the Pass Through Obligation. In effect, this extends the pass-through obligation to not only the immediate access seeker whose calls terminate with Vodafone, but also to any other carriage service provider that uses Primus carriage services and whose fixed-line calls terminate with Vodafone.

The Commission notes that under the terms of clause 7, the access seeker must provide a separate 'Certification of Pass Through' for each of its transit carriage service providers, which:

- identifies each relevant carriage service provider; and
- specifies the volume of transit traffic of each carriage service provider.

Further, the Commission notes that clause 7.4 of Part C provides that if the access seeker cannot or does not comply with clause 7, then the access seeker must not send any transit traffic to Vodafone for termination.

Vodafone's submission

Vodafone's proposal is consistent with the views it expressed during the Mobile Services Review. It considered that declaration of the MTAS would not provide any meaningful benefits to end-users unless the issue of FTM pass-through was addressed.

---

[149] Compliant validity period is the last validity period in which the Access Seeker's average retail price for FTM services was less than the Target Average Retail Price for the validity period.

With respect to its Undertaking terms and conditions, Vodafone submits that the pass-through safeguard has been designed to provide an incentive to suppliers of a FTM retail service to gradually reduce their retail FTM prices to competitive levels. In Vodafone's view:

> This will result in a net increase in welfare and economic efficiency through an associated reduction in retail prices for F2M calls. This is in the interests of consumers as well as originating and terminating operators since it would result in an efficient volume of calls to mobiles that originate on fixed networks.[150]

Vodafone notes that the Commission considered the issue of 'pass-through' as part of the Mobile Services Review, and specifically, proposals by two submitters (Vodafone and Hutchison) on the adoption of mechanisms to ensure the pass-through of lower MTAS prices to lower retail FTM prices.

Vodafone also notes that, in the MTAS Final Report, the Commission outlined its reasons for not including a pass through mechanism in its MTAS Pricing Principles Determination. However, Vodafone submits that it does not accept the Commission's view that declaration of the MTAS and the application of the MTAS Pricing Principles Determination will promote competition in the market within which FTM services are provided. In Vodafone's view, promoting competition is more to do with the structure of the market, the barriers to entry and exit, product differentiation, and the number of buyers and sellers. In its view, the MTAS Final Report did not alter the structure of the market so as to create the conditions for improved competition within this market.

Submitters' views

Hutchison submits that, while it agrees in principle with the concept of a pass-through safeguard, it has a number of concerns about the likely effect of the one proposed by Vodafone. Firstly, Hutchison considers it is unclear what the proposed FTM retail rates are benchmarked against and notes that Vodafone has provided no evidence that the proposed rates accurately reflect the weighted-average FTM prices of fixed-line carriers. Secondly, Hutchison submits that any FTM retail rate benchmark should be based only on mobile traffic that is 'off net'. In the case of Telstra and Optus, this would exclude traffic from their fixed-line services to their mobile networks. Further, Hutchison submits that, without some form of regulated reporting by fixed-line carriers and ongoing monitoring of retail movements, disputes regarding compliance with the pass-through safeguard will 'abound'.

Optus does not support the inclusion of a pass-through safeguard in the Undertaking terms and conditions, believing that it goes beyond the scope of the access undertakings process, does not meet the reasonableness criteria in section 152BV of the Act and is likely to be administratively difficult to effectively implement and monitor.[151] Optus also submits that the Government has 'intentionally elected not to control FTM retail prices via its retail price control regime, nor through any specific Ministerial Direction', rather these services are included within a broader basket of call services. Moreover, Optus submits that, in any case, economic theory suggests that regulation of lower MTAS prices will, to some degree, be passed through to lower retail FTM prices.

---

[150] Vodafone submission, p. 25.
[151] Optus submission, p. 3.

Telstra expresses the following concerns about Vodafone's proposed pass-through safeguard:

- it is not appropriate for, and contrary to the purpose of, an access undertaking to seek to regulate retail prices. If such prices require regulation (which Telstra does not accept), that regulation is properly the function of the responsible Minister, not an access undertaking;
- it is premature for the Commission to consider the issue of FTM regulation at this time;
- even if the Commission was to assess FTM regulation at this time, it should be cautious about accepting Vodafone's proposal as being indicative of the 'competitive benchmark';
- it follows from the previous point that the Commission's acceptance of Vodafone's undertaking could significantly restrict fixed network service providers' ability to recover common costs in the least distorting manner;
- Vodafone's Undertaking has inconsistent approaches to the recovery of common costs for mobile and fixed operators;
- the Commission's acceptance of Vodafone's Undertaking would likely result in gaming by fixed providers and otherwise distort commercial decision-making;
- the Commission's acceptance of Vodafone's Undertaking would create a further unnecessary layer of regulation; and
- the pass-through safeguard is, from a practical perspective, unworkable.[152]

In particular, Telstra expressed concern that the compliance verifications procedures are unreasonable and that the transit traffic arrangements are wholly unreasonable in providing for the provision of commercially sensitive information to Vodafone and the prohibition on sending transit traffic to Vodafone in certain circumstances.[153]

AAPT is also opposed to the FTM safeguard.

6.2. The extent of pass-through

The Commission considers that the imposition of a pass-through safeguard, as proposed in Vodafone's Undertaking price terms, is not necessary to ensure the pass-through of lower MTAS rates to lower prices for retail FTM (and possibly other fixed-line) services.

As the Commission outlined in significant detail in the MTAS Final Report, one of the key reasons for its decision to declare the MTAS, and to accompany this with a cost-based pricing principle, was its view that this would establish the pre-conditions for improved competition in the market within which FTM services are provided. Specifically, the Commission considered that declaration of the MTAS combined with a reduction in the price of this service towards its underlying cost would allow current and prospective FTM providers to purchase this input at more cost-reflective prices. This, in turn, should ensure that equally or more efficient carriage service

[152] Telstra submission, pp.5-6.
[153] Telstra submission, Appendix 1.

providers were able to place competitive pressure on vertically-integrated providers of FTM services to improve their own efficiency and reduce prices paid by consumers of FTM (and possibly national long-distance and international call) services. The Commission accepted that partial pass-through of MTAS price reductions could be expected in the short term. However, in its view, over the longer term, reducing MTAS prices should improve competition in the market within which FTM services are provided, leading to a closer association of FTM price with their underlying cost of provision. Moreover, the Commission noted that given that the price of FTM services appeared to be further above cost in absolute terms than the price of the MTAS, this suggests that the price of FTM calls may fall by even more than the reduction in the cost of the MTAS in the long-term.

On this issue, as noted above, Vodafone 'does not accept' that declaration of the MTAS and the accompanying MTAS Pricing Principles Determination will promote competition. In explaining its position in this regard, Vodafone's contends that:

> Promoting competition is more to do with the structure of the market, the barriers to entry and exit, product differentiation, and the number of buyers and sellers [and that the Commission's decision] did not alter the structure of the market so as to create the conditions for improved competition within this market.[154]

The Commission disagrees with Vodafone's views in this regard. The MTAS is a direct input cost for any fixed-line carrier that wishes to provide a FTM service. For this reason, the ability and incentive of MNOs to price the MTAS significantly above its underlying cost acts as a serious impediment to the development of effective competition in the market, particularly with respect to those providers of FTM services that only operate a fixed-line network. Moreover, significantly above-cost MTAS rates may also act as a barrier to entry for providers considering entry into the market within which FTM services are supplied. Therefore, contrary to Vodafone's view, the Commission considers that lowering the price of the MTAS towards its underlying cost of production is likely to promote competition in the market within which FTM (and potentially other fixed-line) services are provided, particularly over the longer term, and therefore could have a very important bearing on the structure of the market.

During the Mobile Services Review, the Commission considered the issues of 'pass-through' both in principle and empirically and, based on available information at the time, reached the following conclusions:

- partial pass-through has occurred when considered over the whole period (i.e. 1997-98 to 2002-03) under analysis. This appears to be in accord with economic theory which suggests that only partial pass-through is likely to occur where there is less than effective competition in downstream markets;
- FTM pass-through appears to have declined in the most recent period of analysis. However, this coincides with a period of only minor reductions in the price of the mobile termination service; and
- while Telstra's average per-minute retail price for FTM calls has partially decreased in line with reductions in termination charges, there is some evidence that not all categories of end-users have enjoyed the same extent of

[154] Vodafone submission, p. 26.

pass-through. In particular, price reductions have been more pronounced for on-net FTM calls in the corporate segment of the market.[155]

These empirical observations suggest that, when access seekers are faced with lower prices for the MTAS, this leads to some pass-through of these cost-savings to end-users – even if the extent of pass through is partial or not evenly distributed across all end-users. Hence, the Commission considers it likely that some level of FTM pass-through would be likely to occur as a result of lower prices for the MTAS, that is, without a 'pass-through safeguard' mechanism.

The Commission also notes that more recent evidence suggests that Telstra's FTM yield fell from 37.79 cpm to 35.79 cpm between 2003-04 and 2004-05, which is consistent with the Commission's expectation that lower MTAS rates would be passed-through (at least to some extent) to end-users in the form of lower retail FTM prices for 2004-2005.[156]

Further, as the Commission noted in its MTAS Final Report, reducing the price of the MTAS towards its underlying cost of production should, by improving the state of competition in the market within which FTM services are provided, help to ensure the level of FTM pass-through increases over time. In this regard, the Commission notes that, as competition in the market within which FTM services are provided improves, it is possible that reductions in the price of the MTAS could lead to even greater absolute reductions in the price of FTM (and other fixed-line services) call minutes than in the MTAS price itself.[157]

For the reasons outlined above, the submissions provided by Vodafone in support of its Undertaking do not alter any of the Commission's views with respect to the likely impact that lower MTAS rates will have on competition in the market within which FTM services are provided. For this reason, the Commission does not consider that the imposition of Vodafone's proposed pass-through safeguard is necessary to ensure the pass-through of lower MTAS rates.

6.3. The market within which FTM services are provided

As the Commission noted in the MTAS Final Report, under current preselection arrangements, end-users must choose a single service provider for all of national long-distance, international and FTM calls. Whilst over-ride codes continue to enable end-users to choose different service providers for each of these services on a call-by-call basis, the Commission understands that such over-ride codes are not widely known by end-users and are not frequently used.

Accordingly, the Commission expressed the view that, on balance, competitive forces on long-distance and international calls may have some impact on the provision of FTM calls. Therefore, it is important to consider the inter-relationships between these services when considering the impact of MTAS prices on the provision of FTM calls. While the Commission was not required to form a definitive view on the boundaries of the market within which FTM calls are provided for the purposes of the MTAS

---

155 ACCC, MTAS Final Report, pp. 104, 105.

156 Telstra Corporation Limited, *Full Year End Results and Operations Review: Year ended 30 June 2005*, 11 August 2005, pp. 15-16.

157 ACCC, MTAS Final Report, p. xii.

declaration inquiry, it decided to treat FTM calls as if they were being provided in the same market as national long-distance and international calls in this instance.

Overall, the Commission continues to believe the relevant market is likely to be a national market for the provision of the pre-selected bundle of FTM, national long-distance and international calls at the retail level. It is noted that the FTM service is provided in a downstream market of the MTAS markets, and is likely to be provided in the same market as national long-distance and international calls.

As it did in the MTAS Final Report, the Commission notes, however, that these services are not considered to be part of the same bundle due to substitutability between them. Rather, they are considered to be part of the same bundle of services because of complementarities in their provision and because they are offered as a bundle in pre-selection offerings by carriers.

Similarly, as it concluded in the MTAS Report, the Commission considers an approach such as that proposed by Vodafone, which links MTAS prices to the prices charged in the FTM retail market, could involve considerable complexity. This is because retail pricing practices in the FTM market usually involve different retail prices for different customer groups (i.e., residential, small business, other business) and for different time periods (i.e., peak, off-peak). This practice implies that MTAS prices could have a number of different levels according to the characteristics of the end-user making the call and the time at which it is made, even though the underlying cost of providing the MTAS is likely to remain unchanged.

Further, the Commission does not believe that the extent of FTM pass-through should be seen as the only measure of the extent to which a lower price for the MTAS promotes competition in the market within which FTM services are provided, or the LTIE more generally. In the first instance, the LTIE test under section 152AB of the Act requires consideration of the extent to which an action, *inter alia*, promotes competition and encourages efficiency. A reduction in the MTAS rate alone might put in place necessary preconditions for improved competition and efficient use of and investment in infrastructure. Putting into place those preconditions can itself be in the LTIE, even if there is no certainty that the necessary preconditions will be taken advantage of.

Secondly, to the extent that such preconditions are taken advantage of, improved competition can manifest itself in many forms other than just price reductions. In particular, improved competition may be associated with improvements in the quality of services provided (which may increase the cost of providing FTM call services). Further, lower input costs may be passed-through in the form of reductions in the price of other services provided in the bundle of pre-selected fixed line services. Hence, while FTM call prices may not fall by the same amount as the price of the MTAS in the short-term, the LTIE can still be promoted if there are reductions in the price of national long-distance and international call services as a result of lowering input costs for competitors in the market within which FTM services are provided.

6.4. The Part XIC access regime and retail price controls

As noted in Chapter 1 of this report, Part XIC of the Act establishes a regime for governing access to certain declared carriage services in the telecommunications industry. The object of part XIC is to promote the long-term interests of end-users of carriage services or of services provided by means of carriage service. As the

Commission outlined in its Access Pricing Principles,[158] this is achieved, in part, through establishing the rights of third parties to gain access to services necessary for competitive services to be supplied to end-users. The Access Pricing Principles note that:

> In addition to promoting the economically efficient use of, and investment in, infrastructure, the access regime established by Part XIC attempts to open up to competition markets which are potentially competitive but where the scope for competition depends on the services of bottleneck facilities. The access price should allow more efficient sources of supply to displace less efficient sources within these potentially competitive markets. However, the access price should also allow vertically integrated firms to exploit economies of scale and scope to deliver services to end-users at least cost.
>
> Further, access prices and the processes of competition which Part XIC harnesses should encourage suppliers to produce the kinds of services most highly valued by end-users, improve customer choice of services and service quality, and supply services in the least-cost way.[159]

A separate regulatory regime imposes price control arrangements in relation to retail services. Retail price controls are considered to be a key telecommunications consumer safeguard. Price control arrangements have been aimed at promoting efficient pricing outcomes in telecommunications markets as well as achieving certain social policy/equity objectives. These arrangements apply exclusively to Telstra.

They are applied to Telstra to ensure that efficiency improvements are passed through to consumers as lower prices for telecommunications services in markets where competition is not yet fully developed. The government has commissioned periodic reviews of the price control arrangements.

Price control arrangements were first introduced in 1989. Since that time, Telstra (or its predecessors, Telecom and the Overseas Telecommunications Corporation) has been subject to price controls on a range of telephony services.

Specifically, under Part 9 of the *Telecommunications (Consumer Protection and Service Standards) Act 1999*, the Minister for Communications, Information Technology and the Arts (the Minister) may determine that specified services supplied by Telstra are subject to price control arrangements. The *Telstra Carrier Charges—Price Control Arrangements, Notifications and Disallowance Determination no. 1 of 2002*, provides that certain of Telstra's retail services are subject to price control arrangements ('the Price Control Determination').

The stated objectives of the 2002 Price Control Determination were to:

(a) promote efficiency in markets not yet effectively competitive and pass on the benefits to consumers;

(b) protect low-income consumers from any adverse effects of line rental increases;

(c) ensure rural and remote customers share in benefits from greater competition;

(d) allow Telstra to gradually rebalance line rentals; and

---

158 ACCC, *Access Pricing Principles, Telecommunications—a guide*, July 1997, p.3.
159 ACCC, *Access Pricing Principles, Telecommunications—a guide*, July 1997, p.5.

(e) meet other equity objectives.[160]

In April 2004, the Commission was directed by the Minister to undertake a review of the price control arrangements that apply to Telstra under the Price Control Determination. The direction required the Commission to hold a public inquiry about the price control arrangements, and the arrangements that should apply after the expiry of the Price Control Determination.

The Commission's final report on the 2002 price control arrangements was provided to the Minister on 8 February 2005 and recommended, among other things, line rental, local calls, domestic and international long-distance calls, and FTM calls should be included in a broad price cap basket, with a price cap requiring a reduction in the cost of this basket of the consumer price index (CPI) less 4 per cent, each year.

On 29 June 2005, the Minister extended the operation of the 2002 price control arrangements to 31 December 2005. Under these arrangements, FTM calls are a component service within the basket of call services which is subject to a price cap of CPI less 4.5 per cent.

The Commission sees some merit in the respective submissions of Optus and Telstra that acceptance of a pass-through safeguard as proposed by Vodafone goes beyond the intended scope of Part XIC and is not an appropriate way to regulate retail prices.[161]

The Commission notes the view it expressed in relation to the 2002 price control arrangements, that:

> The ACCC has a general preference for broad based baskets. There are two main reasons for this preference.
>
> Firstly, broad baskets provide a greater scope for Telstra to be flexible in its pricing, which is likely to be more efficient than individual price-caps on each service.
>
> …
>
> Secondly, productivity improvements—on which real price reductions are based—can be anticipated with greater confidence, meaning it is more likely that the price controls would be specified at an appropriate level.
>
> The ACCC also notes that as sub-caps impose additional restrictions on the movement of the price of services within a broader basket, it considers that they should generally be avoided unless there is good reason to do so otherwise.[162]

In this regard, the Commission is of the view that any mechanism that influences the extent of pass-through of a reduction in the MTAS rate to retail services would best be implemented in a broad based basket that applies to a number of services – in this case those that are supplied in the market within which FTM services are provided.

The Commission considers that any mechanism that seeks to directly influence downstream retail prices may be more appropriately dealt with through specific price control measures, such as those imposed on Telstra under the Price Control Determination.

---

[160] Commonwealth of Australia, Telstra Carrier Charges—Price Control Arrangements…—Regulation Impact Statement, p. 4.

[161] Optus submission, pp.4-5 and Telstra submission, p. 6.

[162] ACCC, *Review of Price Control Arrangements—An ACCC Report*, February 2005, p. 46.

6.5. Implementation of the FTM safeguard

In addition to the issues discussed in sections 1.2 to 1.4 above, the Commission considers that the implementation of Vodafone's pass-through safeguard raises issues regarding the proportionality of the burdens on access seekers and Vodafone (as the access provider, confidentiality issues between carriers, is likely to be (broadly) administratively burdensome and could lead to access seekers facing increased costs in the event of frequent and protracted disputes about whether the FTM safeguard provisions have been satisfied.

As noted above, the pass-through safeguard proposed by Vodafone in its Undertaking comprises several components, of which the following raise implementation concerns for the Commission:

- the Pass Through Obligation;
- compliance and Pass Through Disputes; and
- the transit traffic arrangements.

The Pass Through Obligation

The Commission notes that Optus has expressed concern at Vodafone's use of the Commission's estimate of 5 cpm for FTM origination, transmission and retail costs; and the extent of the price reductions imposed by the pass-through safeguard compared to those Vodafone will undertake in relation to the price of the MTAS.[163] In this regard, the Commission also notes Hutchison's concern that it is unclear what the proposed FTM retail rates are benchmarked against, noting that Vodafone has provided no evidence that the proposed rates accurately reflect the weighted average FTM prices of fixed line carriers.[164]

Whilst the Commission continues to believe that the conservatively estimated TSLRIC+ of providing the elements of a FTM call other than MTAS is likely to be in the order of 5 cents per minute,[165] it notes that (other things aside) reductions in FTM retail prices of 15, 18 and 21 per cent per annum appear disproportionate to the magnitude of price reductions Vodafone itself undertakes to make to the MTAS (approximately 7.7, 8.3 and 9.1 per cent per annum).

Compliance and Pass Through Disputes

The Commission notes that the operation of the pass-through safeguard will require access seekers to regularly provide Vodafone with highly-disaggregated, and potentially confidential, information about the *price* and *quantity* of fixed calls terminating on Vodafone's GSM network. In this regard, the Commission notes that a fixed-line carrier might typically provide a variety of different FTM products (i.e. retail, small business, corporate, peak and off-peak) as well as FTM services sold as part of a broader fixed-line bundle. The Commission notes that Vodafone, as a mobile-only operator, would not appear to be a direct competitor to providers that offer FTM services. However, there is still some question as to whether access seekers would be amenable to providing this type of highly-disaggregated data to an external party. In this regard, the Commission notes Telstra's view that:

---

163 Optus submission, pp. 13-14.
164 Hutchison submission, pp. 14-15.
165 See for example MTAS Final Report, pp. 101 and 153.

> … information concerning the identity of an access-seeker's customers (i.e. the Transit Carriage Service Providers) and the amount of custom received from those customers is obviously information that is commercially sensitive to the access seeker which Vodafone has no basis to request.[166]

The Commission considers that, not only will the regular collection and provision of this information likely prove an administrative burden for an access seeker, it may also impose additional costs on the access seeker in collecting further information in the event of frequent and/or protracted access disputes with Vodafone in respect of its compliance with the pass-through safeguard.

The Commission notes that Clause 4 of the Access Agreement contains an obligation on the access seeker to demonstrate whether, and how, it has complied with the pass-through safeguard by submitting information to Vodafone proving that it has complied. As outlined above, if Vodafone considers the access seeker has not complied with the Pass Through Obligation then Vodafone can notify a Pass Through Dispute, and parties must then use 'reasonable endeavours' to resolve the dispute. Failing resolution, either party may then refer the dispute for expert determination – which is final and binding on the parties.

There are two important observations to arise from this dispute resolution process. Firstly, it is incumbent on the access seeker to show that it is meeting the average retail FTM price targets for each Validity Period. In other words, the access seeker must submit whatever information it takes to convince Vodafone that it has complied with the pass through safeguard. Therefore, in order to avoid a dispute over pass through, an access seeker will be obliged to maintain sufficiently detailed records evidencing its compliance with the applicable target average FTM retail price.

Secondly, the question of whether there has been compliance, which is potentially a complex assessment, given the multi-part pricing strategies that are likely apply to FTM services at the retail level, is initially in the hands of Vodafone. Further, the test that Vodafone applies in determining whether a dispute might be notified (whether it '*reasonably considers*' that the access seeker has not complied) is subjectively based, and would therefore appear to leave a broad discretion in the hands of Vodafone to determine whether or not the dispute resolution processes are triggered. The fact that the onus will remain on an access seeker to prove compliance, and the possibility of multiple disputes over separate periods, suggests that the pass-through safeguard will be a potentially costly and time consuming obligation for an access seeker.

The Commission also considers there may be some merit to Telstra's submission that:

> it is not commercially acceptable from a corporate governance standpoint for a director to be required to certify - including in respect of third parties - all the matters required by the … Undertaking.[167]

Transit traffic arrangements

As noted above, clause 7 of the Service Schedule extends the operation of the Pass Through Obligation to re-sellers of an access seekers FTM call services and obliges the access seeker to ensure, and report on, each of its re-sellers' compliance with the Pass Through Obligation.

---

[166] Telstra submission, Appendix 1.
[167] Telstra submission, Appendix 1.

In addition to Telstra's concerns regarding the provision of confidential information in demonstrating a re-seller's compliance with the Pass Through Obligation discussed above, Telstra also argues that such a requirement to ensure re-seller compliance is administratively burdensome. Further, Telstra argues that the 'prohibition' on all transit traffic, in the event that a single re-seller of an access seeker fails to comply with the Pass Through Obligation, will – unreasonably – restrict competitive behaviour in the relevant market for FTM services, noting its broad application in respect of all re-sellers and all transit traffic (including voice and data calls and perhaps even MTM calls and SMS).

On its face, clause 7.4 states that an access seeker must not send any transit traffic to Vodafone for termination in the event that the access seeker cannot ensure that each transit carriage service provider complies with the Pass Through Obligation. In this regard, the Commission is concerned that the consequences for an access seeker, due to non-compliance with the Pass Through Obligation by a single transit carriage service provider, appears to be disproportionate to the contravention itself.

It is difficult for the Commission to speculate whether clause 7.4 would, in practice, be strictly applied by Vodafone. If it were, then the inability for an access seeker to send transit traffic for termination to Vodafone could cause unwarranted disruption to the market in which FTM services are supplied. It is possible that a failure by an access seeker to comply with clause 7 was intended, rather, to result in the access seeker having to pay a rebate to Vodafone in line with clause 6 of the Service Schedule. However, this is far from certain and, if Vodafone intended that the ultimate effect of clause 7 related to the price of the MTAS paid by an access seeker rather than a prohibition on transit traffic, then it appears that the Undertaking is not currently expressed in those terms.

Conclusion on implementation issues

The Commission's concerns regarding the relative price reductions imposed on access seekers compared to Vodafone, the provision of confidential information to Vodafone in respect of compliance reporting, the extent of the compliance reporting required of access seekers, the broad discretion Vodafone has in respect of Pass Through Disputes and the proportionality of the consequences of non-compliance with the Pass Through Obligation in respect of transit traffic arrangements are such that the Commission has significant reservations about accepting an undertaking which contains a pass-through safeguard of the form set out in Vodafone's Undertaking.

6.6. Overall conclusion

The Commission's view is that the pass-through safeguard proposed by Vodafone is not necessary, given the likelihood that pass-through will occur, and is likely to increase over time as a result of a reduction in the MTAS rate alone.

Further, the Commission believes that, given the nature of the market within which FTM services are provided, the extent of pass-through is not the only measure of the extent to which a lower price for the MTAS promotes competition in that market or the LTIE more generally. The Commission notes that a reduction in the MTAS rate alone may itself put in place the pre-conditions for improved competition and efficient use of and investment in infrastructure, which may result in, for example, improvements in the quality of services provided or reductions in the price of other

services provided in the bundle of pre-selected fixed line services – that is the promotion of the LTIE.

Finally, given the market within which FTM services are provided, the Commission believes a more appropriate mechanism to ensure reductions in the MTAS rate are passed through to end-users would be one that is applied to a broad based basket of services that are supplied within the one market. In this regard, the Commission believes that such influence is perhaps more appropriately exercised at the downstream level, in the form of price control mechanisms rather than through an access regime which is designed to ensure access to 'bottleneck' services (or facilities) which are generally at the wholesale level.

Even if the Commission were to be convinced that it would be in the LTIE to implement a pass-through mechanism in respect of FTM retail prices, the Commission has significant reservations regarding the practical implementation of the pass-through safeguard proposed in the Undertaking.

7. The reasonableness of the price terms and conditions

The Commission must not accept an undertaking unless it is satisfied that the terms and conditions are reasonable. This chapter considers the reasonableness of the price terms and conditions in the Undertaking lodged by Vodafone. In forming a view about whether these price terms and conditions are reasonable, the Commission must have regard to the range of matters set out in section 152AH(1) of the Act. These were summarised in Chapter 4 of this report. It is also noted that the Commission is not limited in the matters to which regard may be had, as set out in section 152AH(2) of the Act.

The with or without test

In considering the matters under section 152AH(1), the Commission will apply the 'future with and without' test expressed in the Sydney Airports case.[168] The Commission considers the test to be a useful analytical tool for assessing the matters to which the Commission must have regard, essentially because it enables the Commission to benchmark the Undertaking against other potential outcomes. This is particularly important because the Commission must assess the Undertaking in terms of its reasonableness over the life of Undertaking and not just according to the present circumstances. The Undertaking, if accepted would operate for a term of approximately three years. Accordingly, the Commission must take a short and longer term view as to the possible effects of the Undertaking. The Commission believes that a consideration of the counterfactual circumstances through the application of the 'future with and without' test assists in its assessment.

The Commission notes that in the Seven Network Ltd case,[169] the Australian Competition Tribunal (the Tribunal) was of the view that the 'future with and without' approach provides helpful guidance in applying the LTIE test. Similarly, the Commission considers it an appropriate analytical tool in applying the reasonableness criteria set out in section 152AH(1) of the Act (which includes the LTIE test).

Having said that, the Commission notes that the 'future with or without' test lends itself to application in considering some, but not all, of the relevant considerations in section 152AH(1). Accordingly, in applying the 'with or without' test, the Commission will only apply the test to some of the criteria where it facilitates the Commission's analysis toward the Commission ultimately determining the reasonableness of the terms and conditions.

Accordingly, in having regard to the reasonableness criteria in relation to the price terms and conditions contained in the Undertaking, the Commission will compare the following two situations:

1. the pricing options available under the Undertaking; and
2. the pricing outcomes the Commission believes are likely to otherwise occur – having regard to the procedures and protections for access seekers that arise under Part XIC of the Act.

Each of these alternatives is described in greater detail below.

---

168 *Sydney Airports Corporation Ltd* (2000) 156 FLR 10.
169 *Seven Network Ltd* [2004] ACompT 11.

Ultimately, however, the test that the Commission must apply is that in section 152BV(2)(d) of the Act which requires that in order for the Commission to accept the Undertaking, it must be satisfied as to the reasonableness of the terms and conditions specified in the Undertaking. This would appear to necessitate a balancing and evaluation of the relative weight of the matters to which the Commission must have regard in section 152AH of the Act.

Pricing options set out in the Undertaking

The price terms and conditions specified in the Undertaking have been described in considerable detail elsewhere in this report and shown in Table 1.1 on page 1 of this report. In summary, the Undertaking specifies that the prices for the MTAS should trend towards a 'target' price of 16.15 cpm over the Undertaking period. As indicated in detail throughout this report, the pricing options proposed in the Undertaking are based on the cost model developed by PwC. The Commission's assessment of the PwC model has been considered in Chapter 5 of this report.

In addition to these usage charges, the Undertaking specifies that the access seeker acquiring the MTAS must pay Vodafone a network conditioning charge.

In addition to the PwC modelling, Vodafone also engaged Frontier to estimate the 'welfare-maximising' price for the MTAS over the Undertaking period. This includes the forward-looking long-run incremental cost supplying the MTAS augmented by two mark-ups to account for:

- recovery of fixed and common costs according to Ramsey-Boiteux (R-B) principles; and
- a network externality surcharge (NES).

Based on its model, Frontier estimates that the 'welfare-maximising' price for the MTAS is between 23.32 and 32.73 cpm, depending on the assumptions made about the magnitude of Vodafone's FCCs and the relevant elasticities.

However, for the reasons outlined elsewhere in this report, Vodafone does not rely on these estimates for its proposed Undertaking prices.

Further, the price terms and conditions in the Undertaking set out specific terms on which the Undertaking pricing options for the MTAS are available to access seekers who operate fixed-line services. In summary, the prices at which Vodafone undertakes to supply the MTAS are only available to fixed-line operators if they agree to comply with the pass-through safeguard described in detail in Chapter 6 of this report. That is, as a pre-condition to an access seeker receiving Vodafone's proposed lower prices for the MTAS, the access seeker must reduce the prices it charges end-users for FTM calls to at least the prices specified in a 'retail FTM price adjustment path' included in the Undertaking (and shown in Table 1.2 of this report). If an access seeker does not reduce its FTM prices in accordance with this retail FTM adjustment path, it is required to pay Vodafone a rebate. The Commission's assessment of the pass-through safeguard has been considered in Chapter 6 of this report.

Other pricing outcomes

In the event that the Commission decided not to accept the Undertaking, a number of alternative pricing outcomes might arise. In the first instance, in the absence of the Commission accepting the Undertaking, all procedures and protections provided for

in Part XIC in respect of declared services will be available to access seekers who wish to acquire the MTAS from Vodafone.

In addition to the rights conferred under section 152AR of the Act, access seekers are able to seek a binding resolution by the Commission to any disputes they may have with Vodafone regarding access to the MTAS on Vodafone's mobile telephony network(s). This is available under Division 8 of Part XIC of the Act, which gives the Commission power to arbitrate access disputes. Under Division 8, the Commission must make a final determination on any matter relating to access by the access seeker to the declared service, which binds both parties to the dispute.

As noted in the Discussion Paper on the Undertaking, the Commission has been notified of a number of access disputes in relation to supply of the MTAS by Vodafone. As detailed on the Commission's website (www.accc.gov.au), the Commission is currently arbitrating access disputes between Vodafone and PowerTel, Hutchison, AAPT and Primus.

Alternatively, access seekers may continue to seek to determine terms and conditions of access via commercial negotiation without recourse to arbitration of an access dispute. In this regard, the Commission notes there are some access seekers that have currently not notified the Commission of an access dispute in relation to the supply of the MTAS by Vodafone.

The Commission appreciates that, given commercial imperatives for certainty and the costs involved with pursuing a regulatory outcome, an access seeker will in some instances negotiate an access price higher than it believed could be obtained using regulatory means. However, based on the behaviour of some access seekers to date (in availing themselves of their arbitral rights under Part XIC of the Act in respect of Vodafone's supply of the MTAS), the Commission believes it likely that, in the event the Undertaking were rejected, some parties would continue to avail themselves of their arbitral rights under Part XIC with respect to supply of the MTAS in future periods.

Without seeking to prejudge the outcome of these arbitral disputes, the Commission notes that a number of outcomes could be possible in relation to those access disputes that are ongoing in relation to the supply of the MTAS by Vodafone. In this regard, the Commission notes that it released its MTAS Pricing Principles Determination on 30 June 2004. A key element of this pricing principle was that the Commission indicated it believed the price of the MTAS should follow an adjustment path such that there is a closer association of the price and its underlying cost of the service. In this regard, the Commission indicated it believed the appropriate cost concept to apply for the purposes of this pricing principle was the total service long-run incremental cost (or 'TSLRIC') concept. The Commission indicated in its pricing principle that it believed it would be appropriate to augment TSLRIC to include a mark-up to make a contribution to organisational-level costs. The Commission indicated it believed this mark-up should be estimated having regard to an EPMU rule. This pricing principle is often referred to as TSLRIC+.

The Commission also indicated in its MTAS Pricing Principles Determination that the adjustment path that the price of the MTAS should follow as it approached TSLRIC+ should have the following characteristics:

- the starting price should be set at the lowest price at which the service is being supplied;

- the end price should be set at the upper end of the range of reasonable estimates of TSLRIC+ of supplying the service that are currently available;
- the adjustment path should commence on 1 July 2004 and conclude on 1 January 2007;
- decrements should initially be made on a six monthly basis then, as prices become more proximate to TSLRIC+, be made on an annual basis; and
- each decrement between the start price and end price should be of equal amount.

As part of this MTAS Pricing Principles Determination, the Commission also specified price-related terms and conditions of access to the MTAS. These are at Appendix D in the MTAS Final Report. These price-related terms and conditions set out indicative prices that the Commission believed should apply with respect to the MTAS for the period 1 July 2004 to 30 June 2007. These are shown in Table 7.1 below.

Table 7.1: Commission indicative prices for the MTAS

Time period	Indicative price for the MTAS (cpm)
1 July 2004 – 31 December 2004	21
1 January 2005 - 31 December 2005	18
1 January 2006 - 31 December 2006	15
1 January 2007 – 30 June 2007	12

The price-related terms and conditions were estimated having regard to a range of reasonable estimates of the TSLRIC+ of supplying the MTAS that were available to the Commission at the time of making its MTAS Pricing Principle Determination. This included estimates of the TSLRIC+ of the MTAS made in overseas jurisdictions and accounting data provided to the Commission by Telstra and Optus under the RAF. As the Commission noted at the time:

> The principles specified in such a determination are indicative of the approach that the Commission would likely take should it be required to arbitrate a dispute relating to the price of access. Although a party may still argue against the application of those principles to its case, determining pricing principles will guide commercial negotiation of access by providing greater certainty as to the Commission's views on reasonable access prices.[170]

Whilst the Commission does not comment publicly on specific arbitrations, it notes that, under section 152AQA(6) of the Act, it is required to have regard to any pricing principles determination in arbitrating an access dispute in relation to the declared service. That said, the Commission emphasises that it should by no means be assumed that the Commission would necessarily set prices equal to those in the MTAS Pricing Principles Determination in a final determination in an access dispute. This could be for a number of reasons, including that:

---

[170] See Final MTAS Report, p. 185 and Commonwealth, *Trade Practices Amendment (Telecommunications) Bill* 2001, pp. 10, 18.

- access disputes are generally bi-lateral in nature such that it may be appropriate to specify different terms and conditions in final determinations in different disputes; and/or
- new material may be put before the Commission in an arbitration that suggests either the TSLRIC+ principle, on which the MTAS Pricing Principles Determination is based, or the 12 cpm target price contained within it, are not appropriate.

As outlined in Chapter 5 of this report, the Vodafone price terms are based on the model developed on its behalf by PwC. Specifically, based on Vodafone's 2002-03 data, PwC has developed a fully-allocated top-down cost model to estimate the forward-looking efficient economic costs of providing the MTAS on Vodafone's GSM network.

Based on the information currently before it (including the analysis outlined in Chapter 5 of this report), however, the Commission is of the view that it would be likely that price terms and conditions lower than those in the Undertaking would otherwise emerge if it were to reject the Undertaking. This is because:

- the Commission has concerns with the conceptual approach adopted by PwC to generate this estimate, which would tend to suggest that it is likely to overstate the forward-looking efficient economic costs of supplying the MTAS in Australia; and
- even if the conceptual approach was considered appropriate, the Commission has concerns with some of the inputs PwC has chosen to populate its model when estimating the 'forward-looking efficient economic costs of providing the MTAS on Vodafone's GSM network.

In combination, these concerns lead the Commission to believe that 16.15 cpm is likely to substantially overstate the efficient economic costs of supplying the MTAS in Australia. Moreover, even if the Commission were persuaded that it would be appropriate to set a price for the MTAS in an arbitral dispute involving Vodafone according to the conceptual modelling approach applied by PwC (i.e. top-down fully allocated cost model based on 2002-03 data), the Commission believes Vodafone has not estimated a price in an appropriate fashion.

Accordingly, the Commission believes it likely that it would set a price for the MTAS on Vodafone's GSM mobile network that would be significantly lower than that specified in the Undertaking, if it rejected the Undertaking and continued to be asked to determine prices for the Vodafone MTAS in an access dispute.

In light of this, the Commission thinks it is also unlikely that other access seekers that have not currently notified the Commission of an access dispute in relation to the supply of the MTAS by Vodafone would settle for price terms and conditions consistent with those in the Undertaking in commercial negotiations.

Further, the Commission notes that these likely lower MTAS pricing outcomes will also affect what takes place in downstream markets. Therefore, in the absence of accepting the Undertaking and its pass-through safeguard, the Commission expects that lower MTAS pricing outcomes would put in place conditions promoting some or all of the following outcomes:

- pass-through of the MTAS price reduction in the form of lower FTM prices and, to the extent that lower prices than those proposed in the Undertaking

arise, this could result in reductions in FTM prices that are greater in magnitude or which occur more quickly than those required under the pass-through Safeguard in the Undertaking; and

- improved competition and efficient investment in and use of telecommunications infrastructure in the broader market within which FTM services are provided. This could include, for example, overall reductions in the prices charged for all services supplied in the market within which FTM services are supplied, and/or a re-balancing of prices for services in the market within which FTM services are supplied or an improvement in the quality of the services supplied within that market.

In particular, the Commission notes that the second outcome discussed above may be precluded from occurring if the terms of the Undertaking were adopted, due to the requirement on fixed-line access seekers to ensure FTM retail prices fall, on average, to a certain level, regardless of whether it would be more efficient to pass any reductions in the MTAS rate on to end-users in the form of, for example, lower national long-distance call prices.

Hence, in having regard to the criteria under section 152AH(1), the Commission will, in relation to some of the criteria, take into account the pricing options available under the Undertaking with the (significantly lower) pricing outcomes that would be likely to occur if the Undertaking were rejected.

In this regard, the Commission must have regard to the statutory criteria, as set out in section 152AH(1) of the Act and listed (and discussed) in section 3.2.4 of this report. Each of these criteria is considered in turn below.

7.1. The LTIE

As discussed elsewhere in this report, the Commission has published a guideline explaining what it considers is meant by the phrase LTIE. This was outlined in section 3.2.4 of this report.

7.1.1. Vodafone's submissions

Vodafone submits that its target usage charge of 16.15 cpm is likely to be the closest approximation of the 'forward-looking efficient economic costs' of providing the MTAS during the term of the Undertaking.

Vodafone considers that while a price determined according to the requirements of TSLRIC+ is likely to be consistent with the statutory criteria, it is not the only approach that would be consistent. In this regard, Vodafone believes that the Commission's statements on TSLRIC+ 'apply equally not just to prices determined on the basis of a TSLRIC+ methodology, but to any robust calculation of the forward-looking efficient economic cost of providing the Service'.[171]

Vodafone submits that its 16.15 cpm estimate is consistent with the LTIE since it:

- is forward-looking to the extent that network capital assets have been re-valued;

[171] Vodafone submission, p. 32.

- is conservative in that the application of tilted annuity depreciation is likely to underestimate capital costs compared to cash-flow based economic depreciation and also due to a number of cost allocation assumptions (in particular, customer care costs);
- is assumed to be efficient since there is no basis on which to presume – in the face of long-standing competitive pressure – that Vodafone's network architecture and operating expenditure are not efficient; and
- observes the general principles of robust cost modelling – cost causality, transparency and reconcilability.[172]

Vodafone also submits that its WACC estimate has been calculated to ensure that it is reasonable under the relevant statutory criteria, and will lead to efficient investment in the infrastructure used to provide the MTAS.

That said, Vodafone submits that pricing the service based on R-B principles and including a NES on the MTAS would be 'most' consistent with the LTIE. Moreover, Vodafone submits that a failure to explicitly recognise the existence of externalities in the mobile telephony market will 'lead to lower aggregate consumer welfare' as the consumption of mobile subscription services will be sub-optimal.[173]

Vodafone notes the Commission's view (outlined in the MTAS Final Report) that one externality should not be reflected unless all relevant externalities are measured and offset. However, Vodafone submits that 'it is open to the Commission to measure and include externalities in the pricing of all declared services'. Further, Vodafone submits that 'in relation to this Undertaking the Commission is required only to consider whether the terms and conditions are consistent with the statutory criteria including the LTIE', and that the inclusion of an NES on the MTAS is in fact in the LTIE.[174]

Vodafone submits that it does not accept the Commission's view that declaration of the MTAS and the application of the MTAS Pricing Principles Determination will promote competition in the market within which FTM services are provided. Vodafone argues that promoting competition is more to do with the structure of the market, the barriers to entry and exit, product differentiation, and the number of buyers and sellers. In its view, the MTAS Final Report did not alter the structure of the market so as to create the conditions for improved competition within this market.

Vodafone submits that the FTM pass-through safeguard has been designed to provide an incentive to suppliers of a FTM retail service to gradually reduce their retail FTM prices to competitive levels. In Vodafone's view:

> This will result in a net increase in welfare and economic efficiency through an associated reduction in retail prices for F2M calls. This is in the interests of consumers as well as originating and terminating operators since it would result in an efficient volume of calls to mobiles that originate on fixed networks.[175]

---

[172] Vodafone submission, p. 33
[173] Vodafone submission, p. 33
[174] Vodafone submission, p. 33.
[175] Vodafone submission, p. 25.

7.1.2. Submitters' views

Hutchison submits that prices proposed by Vodafone in its Undertaking are not in the LTIE. Hutchison believes that the proposed prices will neither promote competition nor create the pre-conditions necessary to achieve greater competition in any market for listed services. Rather, Hutchison submits that acceptance of the Undertaking will be detrimental to competition in the following suggested markets: individual subscriber markets; single mobile operator markets; the market for the MTAS; the FTM market; and the retail mobile services market.

Hutchison considers that the current regulatory framework, based on the MTAS Pricing Principles Determination would 'ensure faster, more widespread implementation of a lower price for the MTAS than that proposed in the undertaking, thereby creating benefits for a greater number of end-users'.[176] Hutchison also argues that acceptance of Vodafone's Undertaking will harm dynamic efficiency, prevent allocative efficiency and would be inconsistent with productive efficiency.

Hutchison expresses support for a pass-through mechanism but does not consider the mechanism proposed by Vodafone can be found to be reasonable. Hutchison notes that it is unclear what the proposed FTM retail rates are benchmarked against and that should be based only on mobile traffic that is 'off net'.[177]

Telstra appears to generally support Vodafone's approach to assessing the costs of supplying the MTAS, although it notes that, by Vodafone's own admission, the prices based on the PwC model are inconsistent with welfare-maximising prices, as they fail to take into account important R-B principles and externality effects.

On the adjustment path proposed by Vodafone towards its target price of 16.15 cpm, Telstra does not believe it should incorporate equal decrements, but rather a larger one-off change with smaller decrements to reach the target rate. In Telstra's view, if the target rate were 'welfare-maximising' (which Telstra believes it is not), then this would deliver benefits to consumers more quickly.[178]

In respect of the FTM safeguard mechanism, Telstra expresses a number of concerns. In particular, Telstra submits that Vodafone's proposed retail adjustment path will likely have many potentially harmful impacts that would be likely to inefficiently distort commercial decision-making by FTM providers and may have an adverse impact on competition for the supply of FTM services. Telstra submits that it is difficult to see how the proposal could achieve the objectives of efficiency and promotion of competition in Part XIC of the Act.[179]

The consultants engaged on behalf of the CCC (Cave and Chambers) submit that it is unlikely that the Commission can be satisfied that the Undertaking is consistent with the relevant statutory criteria. In this regard, they note that '[w]hen unregulated prices are found to be excessive, there is no legitimate business interest in allowing that position to be maintained a moment longer than is necessary', and accordingly submits that the proposed adjustment path is 'probably excessive'.[180]

---

176 Hutchison submission, p. 8.
177 Hutchison submission, pp.14-15.
178 Telstra submission, p. 4.
179 Telstra submission, p.11.
180 Cave and Chambers, p. 22.

Optus does not support the inclusion of a pass-through safeguard in the Undertaking terms and conditions, believing that it goes beyond the scope of the access undertakings process, does not meet the reasonableness criteria in section 152BV of the Act and is likely to be administratively difficult to effectively implement and monitor.[181] In particular, Optus argues that the pass-through safeguard does not promote the LTIE and is likely to harm competition and economically-efficient use of infrastructure because:

- it will reduce pricing flexibility in the pre-selected services bundle within which FTM services are supplied;
- margins in the wider fixed voice telephony market do not reveal monopoly profits; and
- pass-through is likely to occur regardless of the level of competition in the market within which FTM services are supplied.[182]

Optus further submits that the proposed pass-through safeguard does not have sufficient regard to the interests of those who have a right to use the MTAS. Optus raises doubts about the appropriate FTM retail margin estimated by the Commission in the MTAS Final Report and used by Vodafone in its pass-through safeguard and also submits that the glide path proposed for retail FTM services is too steep and would involve significant and detrimental 'rate shock' to fixed-line providers.[183]

7.1.3. The Commission's view

The Commission notes that there are three elements to consider when determining whether something is in the LTIE:

- whether it promotes competition;
- whether it promotes any-to-any connectivity; and
- whether it promotes the economically efficient use of, and investment in, infrastructure.

The Commission also notes that in *Seven Network Limited (No 4),*[184] the Australian Competition Tribunal expressed its general agreement with the approach to applying the LTIE test established by the Commission in its *Access Pricing Principles, Telecommunications – a guide*[185] (the APPs). In this decision, the Tribunal stated that in its view the key principles include:

- The price of a service should not exceed the minimum costs that an efficient firm will incur in the long-run in providing the service.
- The costs are the forward-looking costs, including a normal return on efficient investment (which takes into account the risk involved).
- Forward-looking means prospective costs using best-in-use technology. The access provider should only be compensated for the costs it would incur if it were using this technology, not what it actually incurs, for example in using out-of-date technology which is more costly. Of course, a firm may be using older technology because it was the best available at the time the

---

181 Optus submission, p. 3.
182 Optus submission, pp.6-13.
183 Optus submission, pp.13-14.
184 [2004] ACompT 11.
185 ACCC, *Access Pricing Principles, Telecommunications – a guide*, July 1997.

investment was made and replacing it cannot be justified commercially. In a competitive market, however, that firm would only be able to charge on the basis of using the most up-to-date technology because, if it did not (in this hypothetical competitive market) access seekers would simply take the service from an alternative service provider.

- The cost of providing the service should be the cost that would be avoided in the long-run by not having to provide it. Thus, it is the additional or incremental costs necessarily incurred, assuming other production activities remain unchanged. In this matter, it assumes that Telstra and Foxtel would be providing subscription television services to subscribers.[186]

With respect to the proposed Undertaking prices, each of the three core elements the Commission is required to consider when determining whether something is in the LTIE is considered in turn below.

In having regard to the LTIE criterion, the Commission will apply the 'with or without test'.

Promoting competition

In considering whether Vodafone's proposed access prices for its MTAS will promote competition, it is first useful to identify the relevant markets in which competition may be affected. In the MTAS Final Report, the Commission identified the following markets as being relevant to the question of whether it should declare the MTAS and, if so, the pricing principles it should specify for this service:

- the individual markets for termination on each MNO's network;
- the market within which FTM services are provided; and
- the market for retail mobile services.

Individual markets for MTAS on each MNO's network

In this regard, the Commission concluded in the MTAS Final Report that there was a separate single market for the MTAS on each MNO's network. In so finding, the Commission reached the view – which it continues to hold – that MNOs are not constrained in their pricing decisions for the MTAS, and have both the ability and incentive to raise the price of this service above its underlying cost of production. The Commission's view is based on the lack of alternative substitutes for the service.[187] Further, the Commission's view was informed by the view that the MTAS is a wholesale service which is not sold as part of a bundle or cluster of retail mobile services, such that any competition in the retail mobile market would not act as a constraint on the price mobile network operators would be able to charge for the MTAS.[188]

In the MTAS Final Report the Commission stated:

> It is the Commission's view that MNOs have control over access to termination of calls to subscribers on their network. As a result of this, the Commission does not believe that

---

186 *Seven Network Limited (No 4)* [2004] ACompT 11, paragraph 135.

187 In the Final MTAS Report, the Commission found that the termination services of individual mobile network operators are not substitutable for each other, irrespective of the size of individual operators or the network technology they employ. Further, the Commission concluded that alternative forms of communication, such as fixed-line network services, SMS messages, email and calls using voice over Internet protocol technology (VoIP), are not sufficiently substitutable means of contacting a mobile subscriber to constrain providers of a MTAS. See, for instance, pages 29 to 56 of the MTAS Final Report.

188 MTAS Final Report, pp. 42 to 55.

> MTASs provided on different mobile networks are substitutable for each other – calls to a consumer connected to one mobile carrier's network cannot be terminated on another carrier's network. Further, there are no adequate demand- or supply-side substitutes that will constrain mobile network operators in their pricing decisions for the mobile termination service. These factors, combined with a lack of consumer awareness (on the part of both the A- and B-party consumers) and the incentives that arise from the CPP principle that governs calls to mobile networks, fails to mitigate the control over access mobile operators have with regard to calls terminating on their networks.[189]

The Commission was also of the view that this control over access to calls to subscribers to their network gave MNOs the ability and incentive to set the price for the MTAS above its underlying (TSLRIC+) cost of production. In doing so, mobile operators generate so-called 'above-normal' (or 'economic') profits from providing the MTAS.

As such, the Commission is of the view that Vodafone's proposed access prices for the MTAS will not (and in fact cannot) promote competition in the wholesale market for termination on Vodafone's network.

Each mobile subscriber therefore brings with it a source of economic profits as it enables the MNO to charge above-cost prices for calls made to him/her. As a result of this, the Commission believes that MNOs may, depending on the level of competition they face when attracting subscribers to their network, seek to attract more subscribers to their network by subsidising the prices they offer potential mobile subscribers for retail mobile services. This suggests mobile operators may have an incentive to transfer part of the economic profits from pricing the MTAS above cost to retail mobile subscribers in the form of subsidised prices for retail mobile services (e.g. handset subsidies, free access plans, etc.). The greater is the level of competition for retail mobile services, the greater will be the incentive to transfer economic profits earned from the MTAS to retail mobile subscribers. The Commission believes, therefore, that MNOs may determine a cross-subsidised structure of prices with higher-than-cost prices for the MTAS and below-cost prices for some retail mobile services.

The Commission also indicated it believed this structure of prices was likely to emerge irrespective of the choice of definition for the markets within which the MTAS, retail mobile and FTM services are provided.

While the Commission believes regulation of the MTAS is unable to promote competition over the provision of the MTAS, it does believe it is able to promote competition over the provision of FTM and retail mobile services. The extent to which acceptance or rejection of the Undertaking will promote competition for each service type is considered in turn below.

The market within which FTM services are provided

In the MTAS Final Report, the Commission found that, based on its market observations, MNOs appeared to be setting charges for the MTAS well above the underlying (TSLRIC+) cost of supplying the service. The Commission further found that this above-cost pricing of the MTAS was increasing the cost to providers of FTM calls above the underlying cost of that service, which in turn raised the price of FTM calls. The Commission continues to believe that this is the case.

---

[189] MTAS Final Report, p. 54.

Indeed, Vodafone's submission and its proposal for a pass-through safeguard would seem to support this view. In this regard, Vodafone's proposal involves a reduction in retail FTM prices from an initial price of 38.5 cpm towards a price of 21.15 cpm which Vodafone estimates is the underlying cost of this service (based on the Commission's assumption that fixed-line origination costs 5 cpm). This compares with the Commission's estimate of the underlying (TSLRIC+) estimate of providing FTM calls being somewhere in the region of 9 to 17 cpm.[190]

The Commission notes that Vodafone's own estimate of the cost of it providing the MTAS on its GSM network is 16.15 cpm. However, as outlined in Chapter 5 of this report, the Commission has concerns with the conceptual approach adopted by Vodafone to generate this estimate. These concerns would tend to suggest that the conceptual approach adopted by Vodafone (or perhaps more accurately, its consultant, PwC) overstates the TSLRIC+ of supplying the MTAS in Australia.

Notwithstanding these concerns, even if the Commission accepted the conceptual approach adopted by Vodafone, it has concerns with a number of the inputs and assumptions that underpin the population of the cost model. These concerns have led the Commission to the view that 16.15 cpm is likely to substantially overstate the forward-looking efficient economic costs of supplying the MTAS in the period to which Vodafone's target price relates.

At present, the Commission understands that the MTAS is being priced somewhere between 18 and 20 cpm. Therefore, the price of the MTAS is likely to be substantially in excess of the TSLRIC+ of providing the MTAS on Vodafone's GSM mobile network.

As indicated above, the Commission believes above-cost pricing of the MTAS is being used, in part, to subsidise below-cost pricing for retail mobile services. The Commission believes this is the case irrespective of the way in which markets are defined to include mobile termination, retail mobile and FTM services.

At issue is whether this cross-subsidised pricing arrangement is likely to be promoting competition in the downstream markets within which retail mobile and FTM services are being provided. As indicated in the MTAS Final Report, the Commission is concerned that above-cost pricing of the MTAS allows MNOs (including integrated fixed and mobile providers) to raise the costs of FTM service providers that only operate fixed-line networks. In the case of integrated fixed-line and mobile operators, it allows them to raise the price of the MTAS above that which the integrated operators face for calls that terminate on their own networks.

As the Commission stated in its MTAS Final Report, the Commission believes that a closer association of the price of the MTAS with its underlying TSLRIC+ cost of production is likely to improve competition in the market within which FTM services are provided. Specifically, a closer association of price and cost will allow equally or more efficient FTM providers to place more competitive pressure on integrated providers of FTM services to improve their own efficiency and reduce the FTM prices

---

[190] As outlined in section 2.3 of this report, the Commission believes the TSLRIC+ of the MTAS, based on consideration of benchmarking against overseas cost estimates, is likely to lie somewhere in the range of 4 to 12 cpm. The Commission also estimates that the TSLRIC+ of providing fixed origination and transmission is likely to be approximately 5 cpm. Combined, this gives rise to a likely range of the cost of providing the MTAS of between 9 and 17 cpm.

paid by their own consumers. Therefore, this approach to pricing is likely to provide a stimulus for increased competition from existing FTM providers, and possibly from new entrants. The Commission notes that this increased competition can manifest itself in many ways, including reduced prices and improvements in the quality and range of product offerings made available by providers of fixed-line services.

Putting aside consideration of the legitimate business interests of the access provider – which is considered below – the Commission believes these competitive benefits would be greater the more immediate and complete are reductions in the price of the MTAS towards its underlying (TSLRIC+) cost of providing the service.

The Commission notes that, by reducing the price of the MTAS closer towards TSLRIC+, the Undertaking will likely have the effect of promoting competition to some extent in the market within which FTM services are provided. However, the Commission believes it is likely that the price of the MTAS will move closer towards TSLRIC+, and more quickly, ultimately via the arbitral process if the Undertaking were to be rejected. Accordingly, the Commission believes that competition over the provision of FTM services will be more likely to be promoted if the Undertaking were rejected rather than if it were to be accepted.

However, even if the Commission were to be persuaded that competition over the provision of FTM calls was better promoted by a price for the service equal to 16.15 cpm, as argued by Vodafone, the Commission believes (for the reasons outlined in Chapter 5 of this report) that Vodafone's estimate of this number is underpinned by inappropriate model inputs and assumptions. The Commission believes this would support a view that an accurately calculated top-down fully allocated forward-looking cost model estimate would be substantially lower than the 16.15 cpm estimate proposed by Vodafone.

Accordingly, irrespective of whether a price for the MTAS equal to its TSLRIC+ or based on Vodafone's proposed approach would be more likely to better promote competition in the market within which FTM services are provided, the Commission believes accurate estimates of both these numbers would be substantially less than the target price of 16.15 cpm contained in the Undertaking.

In respect of Vodafone's proposed pass-through safeguard, and as discussed in detail in Chapter 6 of this report, the Commission is of the view that, firstly, that it is not necessary to ensure that reductions in MTAS rates are pass-through to end-users in the form of lower FTM retail prices. In the event that a significantly lower price for the MTAS would emerge if the Undertaking were rejected then it is possible that reductions in FTM retail prices could be of a greater magnitude, or occur more quickly, than they would if they followed the proposed FTM retail price path in the Undertaking. Even if these reductions were not passed through in the form of lower FTM retail prices, the Commission believes that a reduction in the MTAS rate alone may itself put in place the pre-conditions to promote competition, which may result in, for example, improvements in the quality of services provided or reductions in the price of other services provided in the bundle of pre-selected fixed line services.

Given the Commission's expectation that significantly lower prices for Vodafone's MTAS and for the bundle of pre-selected fixed line services would emerge if the Undertaking were rejected, the Commission is of the view that competition in the market within which FTM services are provided would be better promoted if the Undertaking was not accepted.

Retail mobile services

In relation to the retail mobile services market, the Commission noted in the MTAS Final Report that, while the retail mobile services market is exhibiting more encouraging market outcomes than the markets for fixed-line telecommunications services, it is unlikely to be effectively competitive as yet. This was because:

- there continued to be a high level of concentration at the carrier network level (where the Commission estimated the combined market shares of Telstra, Optus and Vodafone was greater than 97 per cent of the market);
- barriers to effective entry into the market (associated with national coverage and sunk costs) remain high; and
- established MNOs (and in particular Telstra and Optus) appear to be making profits well in excess of those the Commission would expect in competitive markets for these services.

In addition to this, the Commission noted that reductions in the prices paid for retail mobile services appeared to have slowed in recent years, with some indication that prices increased, on average, during the 2002-03 financial year.[191]

While the market share of Hutchison's two mobile networks has increased since June 2004,[192] and there is some anecdotal evidence that the introduction of capped pricing plans has seen a return to price reductions for retail mobile services over the 2004-05 financial year, the Commission believes that the combined market shares of Telstra, Optus and Vodafone still ensure the market is highly concentrated at the carrier network level.

Further, the Commission continues to believe that barriers to entry into this market are high due to national coverage and sunk costs, and believes this was exhibited during 2004 by the decisions of Telstra and Hutchison,[193] and Vodafone and Optus[194] to enter into infrastructure sharing arrangements in relation to the radio access networks associated with the deployment of 3G mobile networks.

Overall, therefore, the Commission continues to believe that structural features of the mobile industry indicate the retail mobile services market is not effectively competitive at this point in time.

Despite this, the Commission indicated it expected the greatest competitive benefit from regulation of the MTAS was likely to occur in the market within which FTM services are provided (and not the retail mobile services market). That said, the Commission did indicate it expected that a closer association of the price of the MTAS and its TSLRIC+ of production would help promote competition in the retail mobile services market to the extent that it:

---

191 See, for instance, MTAS Final Report, section 4.3.3.

192 A analyst's report by Credit Suisse First Boston indicates that Hutchison's subscriber market share increased from 3.9 per cent in 2004 to a forecast 5.7 per cent in 2005. See Credit Suisse First Boston, *Australian Telecommunications 2005*, 6 May 2005, p. 41.

193 See, for instance, ACCC media release, *ACCC Not to Oppose 3G Radio Access Network Sharing Arrangement Between Hutchison and Telstra*, 10 December 2004.

194 See, for instance, ACCC media release, *ACCC Not to Oppose 3G Mobile Radio Access Network Sharing Agreement Between Optus and Vodafone*, 14 December 2004.

- serves to overcome the ability established operators might have to frustrate new entrants interconnecting with established networks on reasonable terms and conditions; and
- leads to a more efficient use of and investment in the infrastructure used to provide retail mobile services.[195]

At question for the purposes of this Undertaking assessment is whether competition would be better promoted over the provision of retail mobile services by the acceptance or rejection of the Undertaking.

At one level, it might be argued that so long as all MNOs are regulated in a consistent fashion by the Commission with respect to the price of the MTAS, any price level for this service should ensure that MNOs are able to compete with each other on their relative efficiencies and competitive merits. In that sense, therefore, it could be argued that the prices proposed in the Undertaking and those that might emerge in the absence of the Undertaking would have a neutral impact on the level of competitiveness over the provision of retail mobile services, provided they reflected changes offered by other mobile network operators for this service.

Such a viewpoint would fail to recognise, however, the likelihood that reductions in the price of the MTAS are likely to have varying impacts on different MNOs due to the fact that some (Telstra and Optus) provide both fixed and mobile services to consumers, while others (Vodafone and Hutchison) predominantly only supply retail mobile services.

In this regard, the Commission noted in its MTAS Final Report that, whilst declaration may be expected to put in place pre-conditions that help to promote competition in the retail mobile services market, declaration is likely to affect different mobile operators in different ways. In this regard, the Commission considered arguments from some mobile service providers that substantial reductions in the price of the MTAS might weaken their competitive position as compared to integrated fixed and mobile operators. This is because these parties believed there is no imperative on fixed carriers to 'pass-through' lower prices for the MTAS to consumers of FTM services.

Accordingly, these parties were concerned that if MNOs are required to lower MTAS rates, their integrated competitors who operate in the market for FTM services will experience lower input costs without having to reduce the prices they charge for FTM services to the same extent. Further, these parties believed a reduction in the MTAS prices will reduce the revenues of MNOs more generally, such that they are less able to invest in and deliver new services and keep the retail mobile market competitive.

In general, and as indicated above, the Commission believes that all MNOs have the ability to raise the price of the MTAS above its underlying cost of production (in the absence of regulation of this service), and that this enables them to make economic profits when providing this service. Accordingly, all MNOs are likely to experience reduced economic profit from the provision of the MTAS if the price is set in a way that ensures a closer association of prices and (TSLRIC+) costs for the MTAS.

Whether or not particular MNOs will suffer a proportionately larger reduction in overall revenues from an equal reduction in MTAS rates is, however, less clear. On

---

[195] See, for instance, MTAS Final Report, Chapters 5 and 6.

the one hand, the Commission considers that mobile-only operators may, in the short-term, experience a relatively larger proportionate reduction in revenues from the MTAS than vertically-integrated operators will experience across the combination of mobile termination and FTM services if FTM pass-through is incomplete. On the other hand, however, the Commission notes that continued reductions in the price of the MTAS towards TSLRIC+ should, by improving the state of competition in the market within which FTM services are provided, help to ensure the level of FTM pass-through increases over time. Further, as competition in the market within which FTM services are provided improves, it is possible that reductions in the price of the MTAS could lead to even greater absolute reductions in the price of FTM (and other fixed-line services) call minutes. That is, at present, the extent of the absolute divergence between price and underlying cost is greater for FTM call minutes than it is for mobile termination call minutes.

Based on an estimate of the TSLRIC+ of providing the MTAS of between 4 – 12 cpm, and a TSLRIC+ of providing the remaining elements of a FTM call of 5 cpm, the TSLRIC+ of a FTM call is likely to be somewhere between 9 and 17 cpm. This is at least 21 cpm below the average price charged by Telstra during the second-half of 2004 of 38 cpm. In contrast, the current price of the MTAS is likely to lie between 18 and 20 cpm. At most, this represents a difference of 16 cpm above TSLRIC+.

Hence, as competition in the market within which FTM services are provided becomes more intense, it is possible that reductions in the price of the MTAS could lead to even greater reductions in the price of FTM call minutes than that flowing from 'pass-through' *per se*. Such an outcome would lead to the combined MTAS and FTM revenues of integrated operators reducing by relatively more than the MTAS revenues of mobile-only operators.

Accordingly, the relative impact of continued declaration on mobile-only and integrated fixed and mobile operators is uncertain and heavily dependent on the extent of FTM pass-through and the enhancement of competition in the market within which FTM services are provided. As indicated above, the Commission expected that a reduction in the price of the MTAS towards its underlying (TSLRIC+) cost of production will promote competition in the market within which FTM services are provided and that this will generate pressures for a greater level of pass-through.

More generally, the Commission believes that any impact on the ability of integrated and mobile-only operators to compete with each other following reductions in the price of the MTAS is a result of existing distortions created by the price of the MTAS being at above-cost levels in the first place. That is, to the extent that price was set at the TSLRIC+ of the most efficient mobile operator for all MNOs, they would then be left to compete on their relative efficiencies and competitive merits in the market for retail mobile services. Accordingly, and putting aside consideration of the legitimate business interests of the access provider (which is considered in detail in section 7.2 below), competition in the market for retail mobile services would be best promoted by more immediate and faster reductions in the price of the MTAS towards its underlying (TSLRIC+) cost of production.

The Commission notes that, by reducing the price of the MTAS only partly towards its TSLRIC+ of production, it is unclear whether the Undertaking will promote competition in the market for retail mobile services. By continuing to allow the price of the service to be set substantially in excess of its underlying (TSLRIC+) cost of production, competition in the market within which FTM services are provided would

not be expected to be effective. This would likely have the effect of limiting the extent of 'pass-through' of lower MTAS charges that might result from reductions in the price of the MTAS towards cost made by other MNOs. In turn, this might inhibit the ability of mobile-only operators to compete as effectively with integrated and fixed and mobile network operators in the market for retail mobile services.

In contrast, the Commission believes it is likely that the price of the MTAS will move closer towards TSLRIC+, and more quickly, if the Undertaking were to be rejected. Accordingly, the Commission believes that competition over the provision of retail mobile services will be more likely to be promoted if the Undertaking were rejected rather than if it were to be accepted.

Overall

Accordingly, were the promotion of competition in the markets within which FTM and retail mobile services are provided the only objective when regulating the MTAS, the Commission believes it would be appropriate to reduce the price of the service to its optimal level immediately without directly intervening in the downstream market with respect to FTM retail prices. In this regard, the Commission is of the view that the price of the MTAS should be reduced significantly below 16.15 cpm, and with immediate effect, and allowed to provide the relevant signals in related markets.

Overall, therefore, the Commission is not convinced that Vodafone's proposed pricing options for the MTAS (including the pass-through safeguard) would promote competition in the relevant markets to an extent greater than would likely be the case if the Undertaking were rejected and prices were determined via alternative means.

Any-to-any connectivity

The Commission notes that as a 'standing offer' to supply the MTAS, Vodafone's Undertaking will be *prima facie* consistent with the objective of achieving any-to-any connectivity.

In the MTAS Final Report, the Commission concluded that any-to-any connectivity can be promoted through declaration of the MTAS, and this was a key reason for it defining the MTAS in such a way that it applies to termination of both FTM and MTM calls on all types of mobile networks. The Commission based this conclusion on the ability of established MNOs (having control over access to all consumers directly connected to their networks) to frustrate a new entrant offering a full end-to-end service to its subscribers by hampering supply of the MTAS on reasonable terms and conditions.

The Commission notes that the Undertaking submitted by Vodafone only relates to a subset of the declared MTAS – that is the supply of MTAS on Vodafone's 2G GSM network. The Commission does not believe that this in itself is inconsistent with the objective of any-to-any connectivity. Of greater concern to the Commission, however, is the likely apparent effect of clause 7.4 of the Service schedule. As discussed in Chapter 6 of the report, on it face, this clause prohibits all of the transit traffic of an access seeker being terminated on Vodafone's GSM network in the event that an access seeker does not ensure that each re-seller complies with the Pass Through Obligation. This aspect of the pass-through safeguard set out in the Undertaking raises significant doubt as to whether the Undertaking is consistent with the objective of achieving any-to-any connectivity. Therefore, rejecting the Undertaking may be more likely to promote ant-to-any connectivity than if the Undertaking were accepted.

Efficient use of, and investment in, infrastructure

In the MTAS Final Report, the Commission indicated it believed the following pricing structure was likely to emerge across the MTAS, retail mobile and FTM services in the absence of MTAS regulation:

- above-cost (inclusive of normal profit) pricing of the MTAS;
- consequent above-cost pricing of retail FTM services; and
- subsidised prices of some retail mobile services.

This, the Commission believes, is likely to generate direct efficiency losses in the markets within which FTM and retail mobile services are provided – specifically, less than efficient consumption of retail FTM services and greater than efficient consumption of retail mobile subscription services. The Commission also considered it may give rise to faster than efficient turnover of mobile handsets, as consumers take advantage of highly subsidised mobile handset offerings.

The Commission also indicated that it believed a reduction in the price of the MTAS towards its TSLRIC+ would promote efficiency in use in the market within which FTM services are provided by lowering the input cost of providing this service towards its underlying cost of production. The Commission also acknowledged reductions in the price of the MTAS might lead to consequent increases in the prices of some retail mobile services. However, the Commission indicated the extent to which this would occur was unclear. In any case, to the extent that retail mobile services were being priced below their underlying cost of production, any increases in the prices of these services would be likely to improve the efficiency in use of these services.[196]

The Commission also expressed concern that the cross-subsidised pricing structure that exists with respect to the MTAS, FTM and retail mobile services is likely to create distortions to efficient investment decisions by integrated, mobile and fixed-line only operators. The Commission expressed specific concern that:

- above-cost pricing of the MTAS is reducing demand for mobile terminating access (and therefore FTM) services. In turn, this is likely to distort investment decisions by encouraging operators to under-invest in the mobile and fixed network capacity needed to provided FTM calls; and
- subsidised pricing of retail mobile services is likely to be encouraging excessive investment in the infrastructure used to provide retail mobile services. For instance, subsidised handset prices (such as free handset offers) are likely to have encouraged greater than efficient turn-over of mobile handsets by consumers. Further, it is likely to have led to excessive investment in the infrastructure used to develop new handsets.

Implicitly, the model developed by Frontier on Vodafone's behalf suggests that the current configuration of prices for FTM services, MTM calls and mobile subscription services is not at a level consistent with promoting efficiency in use of these services.

---

[196] In any case, the Commission consider there is considerable doubt as to whether any reduction in the price of the MTAS towards TSLRIC+ would result in an increase in retail mobile prices. The reasons for the Commission's view in this regard are discussed in detail in Appendix 5 to this report.

This is because the Frontier model indicates that the prices of these services should be set at substantially different levels from their current prices if they are to be welfare maximising. Notably, this model implies that MTAS prices should be increased significantly from their current levels.

As set out in detail in Chapter 5 of this report, the Commission believes that the target usage charge estimated by PwC is likely to overstate the price that would best promote efficiency in use and investment in fixed and mobile services.

This is for two main reasons. In the first instance, and as set out in Chapter 5 of this report, the Commission believes PwC's conceptual modelling approach will, at best, tend towards generating an upper bound of the TSLRIC+ of supplying the MTAS in Australia. Further, even if the conceptual approach adopted by PwC was considered appropriate, in the Commission's view, the assumptions and inputs underpinning the estimate would suggest that the true forward-looking efficient economic costs of Vodafone supplying the MTAS on its GSM network is likely to lie substantially below 16.15 cpm for the period to which this price is proposed to apply to.

Whilst Vodafone argues that the pass-through safeguard proposed in its Undertaking will result in a net increase in welfare and economic efficiency through an associated reduction in retail prices for FTM calls, the Commission considers that the relevant market is the broader market for pre-selected fixed-line services – that is the market for FTM, national long-distance and international calls. As outlined in Chapter 6 of this report, the Commission believes a more appropriate mechanism to ensure reductions in the MTAS rate are passed through to end-users would be one that is targeted to a broad-based basket of services that are supplied within the one market. As Vodafone's proposed pass-through mechanism relates to only one of three services comprising this market, the Commission believes the Undertaking is more likely to result in more inefficient investment in and use of telecommunications infrastructure within the relevant markets than would occur in the absence of a FTM pass-through mechanism.

The Commission also notes that Vodafone engaged Frontier to estimate the 'welfare-maximising' price for the MTAS. These prices include a mark-up for FCCs based on R-B principles, and a NES on the MTAS.

As set out in Appendix 2 of this report, the Commission has concerns that, at the conceptual, empirical and practical levels, the inclusion of an R-B mark-up on the FL-LRIC of Vodafone's MTAS is likely to significantly overstate what might be seen as an appropriate mark-up above attributable cost to efficiently recover the relevant common costs of supplying the service. Further, the Commission considers that it is not certain that the R-B framework proposed by Vodafone will result in a superior outcome to the EPMU approach preferred by the Commission in the MTAS Pricing Principles Determination. Indeed, and as noted in Appendix 2 of this report, the Commission is of the view the R-B structure proposed by Vodafone may in fact lead to a significantly inferior outcome. Hence, the Commission believes that Vodafone's proposed pricing options for the MTAS, based on this estimate, will not promote efficient use of or investment in infrastructure used to provide telecommunications services.

Similarly, the Frontier model 'welfare-maximising' price terms include an NES (from 4.23 cpm to 8.29 cpm). As also set out in Appendix 2 of this report, the Commission does not consider, for conceptual reasons, that the framework specified by Frontier to

justify the inclusion of a NES is adequate. In particular, the Commission believes that it only considers one of many possible external effects that exist as a result of consumption of both fixed-line and mobile telephony services. Further, even if the NES was considered relevant, and the only external effect that required some form of corrective pricing, the Commission has concerns with Frontier's actual calculation of the NES. These concerns suggest that even if the need for a NES were accepted, Frontier's calculation of this surcharge would not be expected to result in a socially optimal outcome. Accordingly, the Commission believes that the NES in the Frontier estimates is likely to be inappropriate at a conceptual level and overstated at an empirical level.

As noted previously, in assessing an undertaking the Commission may only, under section 152BU(2) of the Act, accept or reject the undertaking. The Commission cannot, under the provisions of the Act, 'measure and include externalities' to arrive at an appropriate price for the MTAS within an undertaking process. If the appropriate price for the MTAS should reflect a variety of potentially offsetting externality effects then Vodafone should determine the net result of such effects, determine the appropriate price for the MTAS on the basis of this result and then lodge an undertaking with the Commission that reflects this price. Vodafone's decision to measure only one such externality effect, which increases the MTAS above its underlying cost, and then suggest that if the Commission wants the other externality effects to be taken into account, it should measure these itself, is insufficient to convince the Commission to accept the NES mark-ups.

More generally, the Commission believes that the set of 'welfare maximising prices' proposed by Frontier fail basic reality tests. In this regard, the Commission notes that these prices would tend to imply that the price of the MTAS should be increased significantly above its current level and at prices not negotiated commercially since at least 2002. This result would seem inconsistent with regulatory practice worldwide with respect to the MTAS, as well as with those 'welfare-maximising' prices for this service that were provided by Optus in its Undertaking.

In the Commission's view, it is very unlikely that Frontier's set of 'welfare-maximising' prices for mobile subscription and mobile outgoing calls would emerge were the MTAS rate to be reduced to 16.15 cpm. As a broad observation, the Commission notes that despite termination rates declining over time (including in the period from release of the MTAS Pricing Principles Determination to present), subscription levels have continued to increase (albeit at slower rates as saturation is reached). Further, handset subsidies appear to have played a considerable role in increasing mobile penetration. Further, traffic levels to and from mobile networks continue to increase; including those for FTM services.

Accordingly, were the promotion of efficient investment in, and efficient use of, the infrastructure by which telecommunications services are provided the only objective when setting prices for the MTAS, the Commission believes it would be appropriate to reduce the price of the service to its optimal level immediately. To the extent the optimal price is TSLRIC+ (as the Commission has previously indicated it believes it should be), this would imply the price of the service should be reduced to a level likely lower than 16.15 cpm, and with immediate effect.

The Commission notes that, by reducing the price of the MTAS closer towards its optimal level, the Undertaking will likely have the effect of promoting the efficient investment in, and efficient use of, the infrastructure by which telecommunications

services are provided – to some extent. However, the Commission believes it is likely that the price of the MTAS will move closer towards its optimal level, and more quickly, if the Undertaking were to be rejected. Accordingly, the Commission believes that the efficient investment in, and efficient use of, the infrastructure by which telecommunications services are provided will be more likely to be promoted if the Undertaking were rejected rather than if it were to be accepted.

That said, the Commission notes that under the recently enacted *Telecommunications Legislation Amendment (Competition and Consumer Issues) Act 2005*, s152AB(2)(e) of the Act has been amended to change the third arm of the LTIE test so that the Commission to is required to have regard to:

> (e) the objective of encouraging the economically efficient use of, and the economically efficient investment in:
>
> (i) the infrastructure by which listed services are supplied; and
>
> (ii) any other infrastructure by which listed services are, or are likely to become, capable of being supplied.

Further clarification of these changes was also provided in the amendment to s152AB(6) which now provides the following:

> *Encouraging efficient use of infrastructure etc.*
>
> (6) In determining the extent to which a particular thing is likely to result in the achievement of the objective referred to in paragraph (2)(e), regard must be had to the following matters:
>
> (a) whether it is, or is likely to become, technically feasible for the services to be supplied and charged for, having regard to:
>
> (i) the technology that is in use, available or likely to become available; and
>
> (ii) whether the costs that would be involved in supplying, and charging for, the services are reasonable or likely to become reasonable; and
>
> (iii) the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks;
>
> (b) the legitimate commercial interests of the supplier or suppliers of the services, including the ability of the supplier or suppliers to exploit economies of scale and scope;
>
> (c) the incentives for investment in:
>
> (i) the infrastructure by which the services are supplied; and
>
> (ii) any other infrastructure by which the services are, or are likely to become, capable of being supplied.

Further, (new) section 152AB(7A) provides that for the purposes of paragraph (6)(c) of the Act, in determining incentives for investment, regard must be had to the risks involved in making the investment. Under the (new) section 152AB(7B), the Commission may, in determining incentives for investment, consider any other relevant matter.

To the extent that the amendments to section 152AB change the way the Commission should assess whether an undertaking promotes the economically efficient use of, and the economically efficient investment in telecommunications infrastructure, the Commission seeks further submissions from interested parties.

7.2. Vodafone's legitimate business interests

As noted above, when assessing Vodafone's Undertaking, the reasonableness criteria in section 152AH of the Act require the Commission to, *inter alia*, take into account the legitimate business interests of Vodafone, and its investment in facilities used to supply the MTAS.

In having regard to the Vodafone's legitimate business interests, the Commission will apply the 'with or without' test.

7.2.1. Vodafone's view

Vodafone submits that it currently implicitly adopts R-B pricing concepts to allocate and recover its FCCs across the various products and services it supplies. In this regard, Vodafone has noted in its submission that it currently charges 21 cpm for the MTAS. Vodafone further submits that because the elasticities of demand for 'mobile outgoing' and 'mobile subscription' services are 'higher' than that for the MTAS, it currently recovers a higher proportion of FCCs than would be the case if its 'target' price of 16.15 cpm was implemented.

Vodafone submits, therefore, that in order to move from an implicit R-B allocation to its 'target' price of 16.15 cpm (which is based on an EPMU-type approach for the recovery of its FCCs), it must rebalance its prices for mobile outgoing calls and mobile subscription services.[197] In quantitative terms, Vodafone estimates that implementing a price of 16.15 cpm for the MTAS will require it to transfer $c-i-c million in present value terms from the MTAS to 'mobile outgoing' and 'mobile subscription' services over the terms of the Undertaking.

Vodafone submits that to require such 'substantial' prices changes over a short period of time would 'not be possible' and would 'certainly not be consistent with the relevant statutory criteria'.[198] Rather, Vodafone submits that its legitimate business interests require a sufficient period of time to perform such a 'fundamental re-allocation of costs and re-pricing of a range of services'.[199] In this regard, Vodafone submits that price changes impact on a wide range of long-term business planning, commercial and marketing projects, many of which have committed resources on the basis of the current pricing structures. In Vodafone's view, these customers and shareholders rely upon 'predictability' and 'certainty' in the regulatory regime.

Vodafone notes that the Commission is currently considering its Undertaking, in the context of it being in a competitive market of four infrastructure operators. Vodafone also considers that because the markets within which 'mobile subscription' and 'mobile outgoing' services are highly competitive, in the short-term, it is possible that its legitimate business interests would be harmed by sudden price movements which affect its relative market share.

Vodafone therefore submits that the statutory criteria require the Commission to ensure that a 'glide path' is implemented, and that the minimum period over which it should be able to re-balance these prices is three years.

---

197 Vodafone submission, p. 35
198 Vodafone submission, p. 35.
199 Vodafone submission, p. 35.

For this reason, Vodafone has proposed a 'glide path' as shown in Table 1.1 on page 1 of this report. The 'glide path' involves moving from the current price in the market of 21 cpm down to its target price of 16.15 cpm using annual equal decrements of equal value over the three-year Undertaking period. Vodafone submits that this approach is 'broadly consistent' with the adjustment path contained in the Commission's MTAS Pricing Principles Determination

7.2.2. Submitters' views

Hutchison submits that if the markets within which the MTAS was supplied and acquired were competitive, the price would be driven down to the cost of the lowest cost provider, who would be using 3G technology. Hutchison therefore submits that Vodafone would only be able to charge the same amount as carriers using 3G technology and would not be able to charge a higher price to compensate for the fact that it is using older GSM technology. In this regard, Hutchison submits that Vodafone's legitimate business interests extend to earning a return based on the cost of terminating calls on a network using forward-looking technology, and not being compensated for operating an older GSM network.

With respect to the 'glide path' proposed by Vodafone, Hutchison submits that this is unreasonable as the total reduction proposed by Vodafone is only slightly above the Commission's proposed annual decrement of 3 cpm. In Hutchison's view, Vodafone's proposed price reduction is therefore minor and should, if accepted by the Commission, be implemented as a one-off adjustment.

Telstra submits that it understands Vodafone's reasoning with respect to the need to implement the proposed target rate over time, particularly given the substantial changes in pricing structures that would be required as a result of the proposed reduction in MTAS. However, Telstra does not believe that the 'glide path' need be in equal increments, but rather a larger one-off change could be made with smaller increments to reach the target rate. If the target rate were welfare maximising (which Telstra believes it is not), then this would deliver benefits to consumers more quickly.[200]

7.2.3. The Commission's view

The Commission's *Access Undertakings – A guide to Part IIIA of the Trade Practices Act* (the Access Undertakings Guide) states that:

> The Commission's analysis of legitimate business interests of the service provider will focus on commercial considerations of the service provider. The Commission will take into account the provider's obligations to shareholders and other stakeholders, including the need to earn a commercial return on the facility. It will also aim to ensure that any undertaking provides appropriate incentives for the provider to maintain, improve and invest in the efficient provision of the service.[201]

The Access Undertakings Guide also states that:

> The Commission will take an interest in the extent to which competition arising from access to a service generates real benefits to intermediate and final consumers and the community in general. It will not assess business interests as legitimate if they have the purpose or effect of preventing the objectives of the Trade Practices Act being realised, in particular the objective

---

[200] Telstra, p. 4.

[201] ACCC, *Access Undertakings – A Guide to Part IIIA of the Trade Practices Act*, 30 September 1999, pp. 4-5.

> of enhancing the welfare of Australians through the promotion of competition and efficiency. In addition, and in line with the stated intentions of the access regime, the Commission will not allow for reimbursements of forgone monopoly profits which the provider may incur as a result of increased competition in an upstream or downstream market, except insofar as they affect the ability of the firm to discharge CSOs.[202]

In relation to Vodafone's Undertaking, the Commission has previously implicitly indicated that a price equal to the TSLRIC+ of providing a service would be likely to ensure an access provider's legitimate business interests are met. In this regard, the Commission noted in *Access Pricing Principles, Telecommunications – a guide* (the APPs) that:

> As an access price consistent with these principles allows efficient access providers to recover their costs of production it will not violate their legitimate business interests.[203]

That said, the Commission noted in its MTAS Final Report that, in the case of the MTAS, an immediate reduction in the price of the service towards its underlying (TSLRIC+) cost of production 'would impinge upon the legitimate business interests of access providers who have, to date, based their business plans around existing pricing structures and the previous retail benchmarking pricing principle.'[204] In recognition of this, the Commission included in its MTAS Pricing Principles Determination an adjustment path of 30 months duration for the price to fall from above 21 cpm from 1 July 2004 to the Commission's target price of 12 cpm on 1 January 2007. As set out in the MTAS Final Decision Report, (pp. 220-221) the Commission was:

> … mindful that an immediate and significant reduction would give mobile operators little time to adjust their business plans in response … [The] Commission considers that this period allows sufficient time for MNOs to unwind or realise their business decisions made in reliance on the previous regulatory approach …

Underlying this view was a belief that 3 cpm per annum reductions in the MTAS charge, over a three year period, would be achievable without harming a MNO's ability to recover reasonable costs (inclusive of a normal profit), and without placing undue pressure on any pricing plans that a MNO had designed and/or implemented for other services.

The Commission considers that the price terms and conditions set out in the Undertaking do not compromise Vodafone's legitimate business interests. In particular, they would allow Vodafone to set a price that more than recovered its underlying TSLRIC+ of providing the MTAS (inclusive of a normal profit).

That said, the Commission believes the Undertaking price terms and conditions set prices that are greater than those necessary to meet Vodafone's legitimate business interests.

In the first instance, and for reasons set out in Chapter 5 of this report, the Commission has conceptual concerns with the model upon which Vodafone's target price of 16.15 cpm is based. Moreover, even if the Commission accepted that the conceptual approach adopted by PwC was appropriate, in order to meet the legitimate business interests of Vodafone in the long-term, the Commission believes that the

---

202 ACCC, *Access Undertakings – A Guide to Part IIIA of the Trade Practices Act*, 30 September 1999, p. 6.

203 ACCC, *Access Pricing Principles, Telecommunications – a guide*, July 1997, p. 18.

204 MTAS Final Report, p. 216.

16.15 cpm estimate is based on some inappropriate model inputs, assumptions and modelling errors.

For these reasons, the Commission believes the TSLRIC+ of providing the MTAS on Vodafone's network is likely to be substantially below 16.15 cpm, and that, therefore, this target price is more than is necessary to meet Vodafone's 'legitimate' business interests.

Further, the Commission believes that even if 16.15 cpm was an appropriate price for the MTAS in the long term (i.e. 2006-07 and beyond), it would not be necessary for the adjustment path towards that price to be as slow, and involve as many steps, as that specified in the price terms and conditions in the Undertaking. Rather, the Commission believes that Vodafone's legitimate business interests would still be preserved if price reductions for the MTAS were larger than those proposed by Vodafone such that 16.15 cpm was reached earlier than 1 January 2007, as proposed in the Undertaking.

Accordingly, the Commission is of the view that Vodafone's legitimate business interests would be met if the Commission accepted the Undertaking. However, the Commission considers that the prices that are proposed are greater than what are necessary to protect the legitimate business interests of Vodafone and its investment in facilities used to supply the MTAS. In this regard, the Commission is of the view that Vodafone's legitimate business interests could be met through appropriately specified lower prices and as such would be sufficiently met if the Undertaking were rejected.

The Commission notes Vodafone's submission that it currently (implicitly) prices the MTAS based on R-B principles, and that the move to price the service at 16.15 cpm (based on an alternate EPMU-type approach) would result in it having to substantially re-allocate its prices to recover an additional $c-i-c million from 'mobile subscription and 'mobile outgoing' services. The Commission makes two points in this regard.

First, Vodafone claims that it currently prices the MTAS, implicitly, based on R-B principles. In this regard, modelling undertaken on Vodafone's behalf by Frontier estimated that the 'welfare-maximising' price for the MTAS was likely to be between 22.32 cpm and 32.73 cpm. These prices include a mark-up for FCCs based on R-B principles and NES. Importantly, however, the price currently charged by Vodafone for the MTAS (21 cpm) does not fall within this range, and notably, is significantly lower than many of the 'welfare-maximising' prices estimated by Frontier. This sheds some doubt on Vodafone's contention that its current pricing structure is based on R-B principles via a consideration (even implicitly) of the relevant own and cross-price elasticities for the relevant services. Moreover, it also sheds some doubt on the credibility of the Frontier model results given that the implementation of its proposed prices would imply that MTAS rates be significantly increased above their current levels, which would be counter-intuitive and inconsistent with regulatory practice in many overseas jurisdictions – and seemingly inconsistent with Vodafone's practices to date.

Second, it is not explicitly clear to the Commission as to how this $c-i-c million figure has been calculated in this context, and whether any allowance has been made for lower MTAS rates leading to higher call volumes. For instance, Vodafone discusses the need to rebalance its prices for mobile subscription and mobile outgoing services to capture lost MTAS revenue. However, it is not clear whether its $c-i-c million

estimate allows for the pass-through of lower MTAS rates to lower FTM retail call prices. Other things equal, it could be expected that lower retail FTM call prices would lead to greater FTM call volumes, including the call volumes going to Vodafone's GSM network. This would, at the very least, lead to an offsetting effect on the lower per-unit revenue earned from each MTAS minute.

7.3. The interests of persons who have the right to use the declared service

Consideration of the interests of persons who have rights to use the MTAS includes consideration of the ability for access seekers to compete for the custom of end-users on the basis of their relative merits. Terms and conditions favouring one competitor, or class of competitors, over another may distort the competitive process and harm the interests of persons who have rights to use the MTAS.

In having regard to this criterion, the Commission will apply the 'with or without test'.

7.3.1. Vodafone's view

Vodafone submits that its target usage charge for the MTAS of 16.15 cpm protects the interests of those who have the rights to use the declared service.

7.3.2. Submitters' views

Hutchison does not believe that the undertaking price is in the interests of access-seekers as a high MTAS charge discourages access-seekers from reducing their retail prices, regardless of the proposed pass-through requirement. This is so because reduced retail prices lead to:

- additional users connecting to the access-seeker's network; and
- existing users making more calls.

Hutchison submit that the consequence is that the access-seeker then has to purchase more of the MTAS from other networks. This creates or exacerbates a traffic imbalance between the access seeker and the access-provider to the detriment of the access-seeker thereby discouraging access-seekers from expanding their business through offering lower retail prices. It therefore follows that the Undertaking requires end-users and operators with more efficient networks to subsidise Vodafone's older network.

A number of submitters raise concerns that the pass-through safeguard may be contrary to the interests of persons who have a right to use the MTAS. For example, Telstra submits that the FTM retail price path proposed by Vodafone may impact on the ability of firms to differentiate themselves in the supply of the bundle of pre-select fixed services, in terms of the relative prices they set for these services and may also impose substantial compliance costs on access seekers.[205]

Optus submits that in setting the retail FTM glide path Vodafone has not reasonably considered the significant adjustment in FTM prices and the material negative effect on suppliers of FTM services of its proposal. Specifically, Optus expresses doubt about the appropriate FTM retail margin used by Vodafone (and taken from the

[205] Telstra submission, pp. 9-11.

Commission's MTAS Final Report) and the steepness of the proposed glide path, which it submits equates to a reduction of almost 45 per cent over a three year period.[206]

7.3.3. The Commission's view

As already noted in this Chapter, the Commission believes that, in the absence of regulation, MNOs (such as Vodafone) are not constrained in their pricing decisions for the MTAS. Indeed, the Commission considers that possession of market power over the calls that terminate on their mobile networks means that MNOs (such as Vodafone) have both the ability and incentive to price the MTAS substantially above-cost.

This, in turn, raises the costs of access seekers who purchase the declared service. In effect, it can be thought that there are three different types of access seeker that would acquire Vodafone's MTAS:

- integrated fixed-line and mobile operators such as Telstra and Optus;
- a mobile-only operator such as Hutchison; and
- fixed-line only operators such as AAPT, Primus, etc.

In some respects, and assuming that MNOs charge each other reciprocal MTAS rates, raising the cost of the MTAS above its underlying cost might be thought to have a competitively-neutral effect. That said, the relative impact on each MNO is complicated by the fact that some MNOs are also fixed-line operators and some only own a mobile network. This means that some MNOs could be thought of as 'net receivers' of MTAS revenues (i.e. revenue received from its providing the MTAS outweighs what it must pay out for the MTAS) while some are 'net payers'.

Notwithstanding this, raising the cost of the MTAS above its underlying cost unambiguously raises the costs of fixed-line only operators. This is because the MTAS is purchased as a direct input by fixed-line operators when they wish to supply a FTM call. Importantly, and as noted previously in this chapter, the existence of above-cost MTAS rates inhibits the ability of these fixed-line only operators to compete in the market within which FTM services are provided. This is because, in many instances, they will face rates for the MTAS significantly above those faced by their competitors which own their own mobile network. In the Commission's view, therefore, the existence of above-cost FTM rates constrains competition in the market within which FTM services are provided.

The Commission believes a closer association of the price and underlying (TSLRIC+) cost of the MTAS will allow equally or more efficient FTM providers to place more competitive pressure on integrated providers of FTM services to improve their own efficiency and reduce the FTM prices paid by their own consumers.

As previously detailed in Chapters 5 of this report, the Commission considers that there is likely to be a significant difference between the 'target' price of 16.15 cpm proposed by Vodafone in its Undertaking and the TSLRIC+ of providing Vodafone's MTAS service in the period to which the Undertaking relates. Given this, the Commission does not believe that the proposed Undertaking pricing structures will achieve, or even promote, a more competitively-neutral outcome in the market within

---

[206] Optus submission, pp.13-14.

which FTM services are provided, as compared to the situation that the Commission believes would be more likely to arise if the Commission rejected the Undertaking submitted by Vodafone.

Overall, the Commission believes a price for the MTAS equal to the TSLRIC+ of providing the service would be more likely to be in the interests of persons that have a right to use the declared service. For the reasons set out in Chapters 5 of this report, the Commission does not believe that the pricing options contained in the Undertaking represent pricing options consistent with the TSLRIC+ of providing the MTAS.

Further, the Commission considers the pass-through safeguard proposed by Vodafone may not be in the interests of persons who have a right to use the declared service. The Commission notes that the FTM price reductions required of access seekers under the Undertaking (outlined in Chapter 6 of this Report) may require substantial change to access seekers' investment plans and business planning – much more than that Vodafone itself argues it will need to undertake in moving towards a target price of 16.15 cpm. Whilst the Commission considers that pass-through is likely to occur, and may occur at a faster rate and at greater magnitudes than those set out in Vodafone's pass-through safeguard, other things aside, the Commission notes that the FTM pass-through safeguard would appear not to be in the interests of those who have a right to use the MTAS.

The Commission believes that fixed-line operators may themselves be better placed to determine the most efficient pricing structures to be implemented in the market within which FTM services are provided. Given this, the Commission does not believe that the pass-through safeguard will lead to, or even promote, a more competitive-neutral outcome in the market within which FTM services are provided.

Accordingly, the Commission believes the interests of persons that have a right to use the declared service would be better promoted if the undertaking were to be rejected than if it were to be accepted.

7.4. The direct costs of providing access to the declared service

7.4.1. Vodafone's view

Vodafone submits that, in contrast to the Commission's target price of 12 cpm in the MTAS Pricing Principles Determination, Vodafone's target usage charge of 16.15 cpm is based on the direct costs of providing the MTAS on Vodafone's GSM network. In this regard, Vodafone submits that its proposed charge does not include profits lost in dependent markets, and 'therefore ensures that the price is consistent with the direct costs of providing the Service'.[207]

In the context of the Pass Through Rebate included as part of Vodafone's pass-through safeguard (and described in detail in Chapter 6 of this report), Vodafone submits that remittance of the Pass Through Rebate payments would not require an access seeker to 'compensate Vodafone for lost profits in dependent markets as a result of access', rather, Vodafone argues, such payments will be 'directly correlated to variations from the direct costs of providing the retail service'.[208]

---

[207] Vodafone submission, p. 38.
[208] Vodafone submission, p. 38.

7.4.2. Submitters' views

Hutchison submits that in this context of this Undertaking assessment 'direct costs' can mean one of two things:

- the costs that an efficient operator using forward-looking technology would incur; or
- the actual subjective costs of the access provider.

Hutchison submits that if the former is correct, Vodafone's actual subjective costs are irrelevant to the Commission's consideration. On the other hand, Hutchison submits that if the latter is correct, the material provided by Vodafone does not allow the Commission to undertake a thorough assessment of Vodafone's actual subjective costs. Even if Vodafone were to provide more detailed and accurate information about its actual subjective costs, Hutchison submits that the Commission should accord little weight to such costs as they are based on inefficient network architecture and operating expenditure. Hutchison submits that evidence of other operators' direct costs previously provided to the Commission supports this view (for example, Hutchison's analysis of Optus's actual subjective costs of providing the MTAS).

7.4.3. The Commission view

In having regard to this criterion, the Commission does not consider it appropriate to apply the 'with or without' test.

As already indicated in this report, the concept of the 'direct' costs of providing access to a declared service encompasses those that are necessarily incurred (or caused) by the provision of access. At a minimum, in this context, the phrase 'direct costs' is interpreted to mean that an access price should cover the direct long-run incremental costs incurred in providing access.

It does not, however, extend to receiving compensation for loss of any 'monopoly profits' that occurs as a result of increased competition. In this regard, the explanatory memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996 states:

> … the references here to the 'legitimate' business interests of the carrier or carriage service provider and to the 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.[209]

This is also set out in the Commission's Access Pricing Principles which notes that an access price should not be inflated to recover any profits the access provider (or any other party) may lose in a dependent market as a result of the provision of access.[210]

With respect to this particular Undertaking assessment, the Commission notes that Vodafone's estimate of the 'forward-looking efficient economic cost' of it supplying the MTAS is 16.15 cpm. With respect to the PwC model, Vodafone does not

---

[209] Explanatory memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996, p. 44.

[210] In particular, the Efficient Component Pricing Rule (ECPR) may be inconsistent with this criterion. The ECPR bases price on the incremental cost of providing the access service plus the opportunity cost of foregone profits from losing business in related markets.

explicitly separate this 16.15 cpm estimate into an 'incremental' costs and a mark-up for 'common' type costs. That said, in providing data to its other consultant (Frontier), Vodafone has estimated that its 'long-run incremental cost' of it supplying the MTAS on its GSM network is between c-i-c cpm and c-i-c cpm.

Despite these estimates, and as outlined in detail in Chapter 5 of this report, the Commission has concerns as to whether the 16.15 cpm estimate is likely to be truly reflective of Vodafone's forward-looking efficient economic costs of supplying the MTAS in the period to which the Undertaking 'target' price will relate (second half-of the 2006-07 financial year and onwards). These concerns are at both a conceptual and empirical level and are reviewed in section 5.3 of this report.

Taken in combination, these concerns have led the Commission to believe that Vodafone's direct costs of providing the MTAS are likely to be substantially lower than the target price of 16.15 cpm offered in the Undertaking, let alone the prices that will apply in year 1 (19.38 cpm) and year 2 (17.77 cpm) as per Vodafone's proposed adjustment path.

This view would also appear to be supported by the fact that Vodafone's cost estimate appears to be significantly above that provided to the Commission by Optus in support of its Undertaking. Elsewhere in its submission, Vodafone argues that its GSM network architecture should be considered an 'efficient' benchmark upon which to base cost estimates because, among other things, it has been developed in a competitive market environment. This suggests that either Vodafone's cost estimate has been overstated above the 'efficient' level due to the population of the cost model with inappropriate inputs, or that Vodafone's GSM network in fact is not an efficient benchmark upon which to base cost estimates for the purpose of determining the forward-looking efficient economic costs of providing the MTAS.

Notwithstanding these issues, the Commission believes that a price for the MTAS more reflective of the direct costs of Vodafone providing the service would be likely to emerge were the Commission to reject the Undertaking.

The Commission notes Hutchison's submissions regarding the possible meanings of the phrase 'direct costs'. The Commission believes that, even if it is considered that section 152AH(1)(d) of the Act refers to the direct costs of a hypothetical efficient firm using forward-looking 'best in use' technology, Vodafone's submissions regarding its direct costs of supplying the MTAS provides further (and therefore relevant) information about what any such direct costs of a hypothetical operator might be. Irrespective of which definition of the two proposed by Hutchison is applied when assessing the Undertaking against the 'direct costs' of providing the service, the Commission is of the view that the price terms and conditions in the Undertaking are above what is necessary to recover the direct costs providing the MTAS on Vodafone's GSM network.

The Commission notes Vodafone's submission that any payments that constitute a Pass Through Rebate are not compensation to Vodafone for its lost profits (in dependent markets) but rather relate to the direct costs of providing the retail service. The Commission is unclear as to which retail service Vodafone is referring although it most logically appears to relate to the FTM service. Firstly, the Commission notes that the statutory criterion relates to the direct costs of providing the declared service, not the downstream retail service. Given this, the Commission is unclear as to the basis on which Vodafone can claim that the Pass Through Rebate is not the recovery

of above-normal profits. Whilst such profits would be associated with the supply of the MTAS (as the relevant declared service) rather than lost profits in dependent markets, the Commission believes that any Pass Through Rebate could not be considered a direct cost of providing the MTAS given Vodafone has provided information which explicitly claims that the 'forward-looking efficient economic cost' of it supplying the MTAS is 16.15 cpm (on which the Commission's views discussed in Chapter 5).

7.5. The operational and technical requirements necessary for the safe and reliable operation of the carriage service/telecommunications network/facility

In having regard to this criterion, the Commission does not consider it appropriate to apply the 'with or without' test.

The Commission's view is that an access price should not lead to arrangements between access providers and access seekers that encourage the unsafe or unreliable operation of a carriage service, telecommunications network or facility. This criterion is usually more relevant to consideration of non-price terms and conditions.

Vodafone submits that its Undertaking offers an operationally and technically feasible service.

The Commission has received no submissions that suggest that there is any risk that the price-related terms and conditions of the undertaking could lead to unsafe or unreliable operation of a carriage service, telecommunications network or facility.

Accordingly, the Commission is of the view that the proposed prices will not adversely affect the operational and technical requirements necessary for the safe and reliable operation of the carriage service/telecommunications network/facility.

7.6. The economically efficient operation of a carriage service/telecommunications network/facility

Like the test described under the 'efficient use of, and investment in, infrastructure' LTIE criterion, this criterion also relates to the productive and allocative efficiency of a proposed undertaking. An undertaking should encourage access providers to select the least-cost method of providing the service and provide those services most highly valued by access seekers.

In having regard to this criterion, the Commission will apply the 'with or without test'.

7.6.1. Vodafone's view

Vodafone submits that its target usage charge of 16.15 cpm for the MTAS ensures the economically efficient operation of the relevant services, networks and facilities.

However, Vodafone submits that the 'failure to adopt Ramsey pricing principles in allocating fixed and common costs and also an externality mark-up would result in inefficient pricing and therefore reduce demand for subscription and other mobile services'.[211]

[211] Vodafone submission, p. 39.

That said, Vodafone notes that it has not adopted R-B principles or an NES in its target usage charge for the reasons discussed elsewhere in this report.

7.6.2. The Commission's view

For the reasons outlined above under the 'efficient use of, and investment in, infrastructure' LTIE criterion, the Commission considers that the economically efficient operation of a carriage service/telecommunications facility would be more likely to be promoted if the Commission rejected the Undertaking than accepted it.

The Commission notes Vodafone's view that its failure to adopt R-B principles and an NES mark-up in its target usage charge would result in 'inefficient' pricing in this context. The Commission's concerns with the model developed by Frontier to estimate Vodafone's supposed 'welfare-maximising' prices are discussed in detail in Appendix 2 to this report. However, it is also worth noting in this context that there would appear to be an internal inconsistency in Vodafone's view that its target usage charge of 16.15 cpm 'ensures that economically efficient operation of the relevant services, network and facilities' and its further view that in the absence of R-B principles and an NES, the pricing structure will be 'inefficient'.

7.7. Other matters

The Commission did not have regard to any other matters in determining whether the terms and conditions are reasonable as permitted by section 152AH(2).

7.8. Conclusions in relation to the price terms and conditions

Having had regard to the criteria in section 152AH(1), and where relevant the application of the 'future with or without test' to particular criteria in assessing the reasonableness of the terms and conditions, the Commission has concluded as follows.

The Commission believes that acceptance of the Undertaking would, as compared to the situation likely to occur if it were rejected, less likely to promote the LTIE, as it is less likely to promote competition in the market within which FTM services are provided and is likely to lead to less efficient use of, and investment in, the infrastructure used to provide fixed services, the MTAS on Vodafone's GSM network (and the MTAS generally) and retail mobile services and may also compromise the achievement of any-to-any connectivity;

The Commission believes that while the prices proposed in the Undertaking would protect the legitimate business interests of Vodafone, they are greater than what is necessary to protect the legitimate business interests of Vodafone and its investment in facilities used to supply the MTAS on its GSM network and that Vodafone's legitimate business interests would also be met if the Undertaking were to be rejected.

The Commission believes that acceptance of the Undertaking would, as compared to the situation likely to occur if it were rejected, be less likely to promote the interests of persons who have a right to use the MTAS.

The Commission believes that the proposed prices set out in the Undertaking are above what is necessary to recover the direct costs Vodafone faces in providing access to the MTAS in the relevant period;

The Commission believes that acceptance of the Undertaking would, as compared to the situation likely to occur if it were rejected, be less likely to better promote the economically efficient operation of a carriage service/telecommunications network/facility.

Overall, therefore, the Commission is of the view that the price terms and conditions in the Undertaking are not reasonable.

8. The reasonableness of the non-price terms and conditions

As noted above, the reasonableness of the terms and conditions of the Undertaking must include an assessment of both the price and non-price terms and conditions taken as a whole. This chapter considers the reasonableness of the non-price terms and conditions.

It will be noted that some of the criteria outlined in section 152AH(1) of the Act are not particularly directed at the non-price terms and conditions. For instance, the criterion dealing with the 'direct cost' of providing access to the declared service, and the economically efficient operation of a carriage service are criteria that would appear to be more relevant to the reasonableness of the 'price' terms and conditions. There are, however, a number of criteria that particularly lend themselves to consideration from a non-price perspective. These criteria, and how they are relevant to the non-price terms, are discussed in the next section.

An overview of the non-price terms and conditions of the Undertaking is provided in section 4.3 of this report.

8.1. Relevant criteria

8.1.1. Whether the terms and conditions promote the LTIE

As previously discussed, the Act requires the Commission to have regard to whether the terms and conditions promote the LTIE. This is to be assessed against the following objectives:

- promoting competition in markets for a relevant service which includes consideration of whether a thing will remove obstacles to end-users gaining access to those services;
- achieving any-to-any connectivity; and
- encouraging the economically efficient use of, and the economically efficient investment in the infrastructure by which relevant services are provided:
    - the infrastructure by which relevant services are supplied; and
    - any other infrastructure by which listed services are, or are likely to become capable of being supplied.

An important benchmark in assessing whether competition will be promoted is the consistency of the proposed terms of access with the principle of non-discriminatory access between downstream providers of Vodafone's service. Ultimately, a proposal for access must represent an opportunity for effective access by an access seeker to the particular service. An effective form of access should lead to the promotion of competition and contribute towards an efficient use of infrastructure.

Provision of the service through the Undertaking should also lead toward achieving the objective of any-to-any connectivity.

8.1.2. Legitimate business interests of the Carrier/CSP and its investment in the facilities used to supply the declared service

This criterion requires the Commission to take into account the legitimate business interests of the access provider. In relation to price terms and conditions, the

Commission interprets this to means the right of the access provider to earn a normal commercial return on its investment. In relation to non-price terms and conditions however, the Commission views this criterion as requiring an assessment of the broader commercial interests of the access provider in conducting its own business affairs. An access provider, as an owner or controller of particular facilities, should not, simply because it is under an obligation to provide access to its service, be unduly compromised in the conduct of its own legitimate business interests. For instance, an access provider must have the right to make reasonable decisions about modifications and upgrades to its network or the right to set reasonable requirements for billing and the payment of accounts. Generally speaking, an access provider is entitled to have some legitimate control over its relationship with an access seeker to the extent reasonably required to protect its business concerns.

8.1.3. Interests of the person who have rights to use the declared service

This criterion requires the Commission to take into account the interests of persons who have rights to use the declared service. In this regard, the Commission's focus is not on any one particular access seeker, but all potential access seekers who may seek to use the declared service.

The Commission's approach is to recognise that simply because an access provider is the owner or controller of a facility and provider of the particular service, this does not mean that the access provider can dictate the terms of access such that the form of proposed access does not represent a commercially feasible business model for the access seeker. This is about ensuring that the ability of an access seeker to compete in the supply of a service in a dependent market is based on the cost and quality of its service relative to its competitors. As noted above in terms of non-discriminatory treatment of downstream users, an access seeker should not be subject to overly onerous commercial terms simply because of its status as an access seeker.

On this basis, from a non-price perspective, the Commission would, for example, expect an access seeker to have reasonable rights in relation to proposed changes to a facility or service that affects its business interests or be given reasonable opportunity in relation to billing and credit matters, intrusion into the business affairs of the access seeker, suspension of services, and other facets of a business where its customer relationship may be impacted.

8.1.4. Operational and technical requirements necessary for the safe and reliable operation of the carriage service, network or facility

Similar to the criterion relating to the legitimate business interests of the access provider above, this criterion requires the Commission to take into account the need for the safe and reliable operation of a network or facility.

An access provider will generally seek to have in place operations and procedures designed to ensure the integrity of a network or facility is not harmed. Non-price terms and conditions such as these are considered necessary and essential to safeguard the business interests of both the provider and access seeker, provided they are reasonable. In this regard, the Commission is concerned to ensure that any non-price terms and conditions, purportedly in relation to the safe operation of a network, are not used as a barrier to effective access.

8.1.5. Other relevant matters

The Commission is not limited in its assessment of reasonableness to these criteria but may consider other matters relevant to the reasonableness of the non-price terms and conditions of an undertaking.

The Commission considers there to be some common themes or indicia arising from the statutory criteria that serve as a useful guide to the Commission's assessment of the non-price terms and conditions. They are as follows.

A non-price issue may arise in relation to **timeliness**. That is, the time it takes for an access seeker to obtain access or any other matter related to access. This will include an assessment of the process an access seeker must negotiate to obtain access.

Intertwined with this concept is the issue of **delay** or **potential for delay** in providing access. Unreasonable delay is tantamount to no access. In relation to the above issues, the Commission will look at conditions that specify timeframes and preconditions that may attach to timeframes in the context of what potential obstacles to access may exist.

As the Undertaking will govern the terms and conditions of access and form the basis on which the provider will satisfy the applicable SAOs, there should be **certainty** in the terms of the agreement. This certainty should be reflected in the technical and non-technical aspects of the agreement. Lack of clarity in an agreement may deprive an agreement of certainty. The Undertaking has to provide certainty on the face of the agreement. That is, it should not have to require the Commission to make inquiries to seek clarification as to the terms and operation of an agreement.

The Commission is generally concerned to see that an undertaking (if it deals with dispute resolution) has clear and decisive mechanisms for resolving disputes in a timely manner, especially since an access seeker will not be able to avail itself of the arbitration route under Part XIC of the Act once an undertaking is accepted.

Encompassing all of the above matters are the concepts of **fairness** and **balance**. As noted above, the criteria require the Commission to have regard to the interests of both the provider and access seeker. Accordingly, an undertaking should reflect the balanced rights of these parties. In this regard, terms and conditions that tend to unfairly treat an access seeker, in comparison to the rights of an access provider, might be regarded as unreasonable.

In deciding whether particular non-price terms and conditions are reasonable, the Commission will to some extent also be guided by any applicable Australian Communications Industry Forum (ACIF) code. Codes relevant to the matters under consideration, as well as having regard to current industry norms and practices.

The reasonableness of the non-price terms and conditions are assessed on this basis, in accordance with the statutory criteria.

8.2. Assessment of the non-price terms and conditions

8.2.1. Vodafone's overall view as to 'reasonableness'

Vodafone submits that the non-price terms and conditions in the Undertaking are reasonable. Vodafone argues that the Undertaking takes into account the interests of those who have rights to use the declared service, which is one criterion that the

Commission must have regard to in assessing reasonableness.[212] In particular, Vodafone points to the fact that, in the Access Agreement:

- clause 7 ensures low barriers to entry with no up front security requirements;
- clause 9 ensures that Vodafone may only implement upgrades and alterations to its networks and services provided that they do not have a material adverse effect on the access seeker;
- clause 15 provides that Vodafone may only suspend the supply of services under the agreement in a few exceptional circumstances and only to the extent necessary; and
- clause 17.5 provides that either party may terminate the agreement on 30 days notice in the case of breaches, or six months notice for no fault termination.

Overall, Vodafone submits that the non-price terms of the proposed Undertaking represent current best practice in the telecommunications industry. Vodafone argue that the terms have been specifically designed to ensure a fair balance between the interests of access providers and access seekers. Vodafone argues they provide clear and concise terms covering all relevant issues and potential concerns. For these reasons, Vodafone considers that the terms ensure that the interests of access seekers are protected.

A further limb of the reasonableness test from a non-price perspective is the operational and technical requirements necessary for the safe and reliable operation of the network.[213] Vodafone submits that clause 8, which specifically ensures that both access seekers and Vodafone are subject to explicit obligations to not endanger the health or safety of persons or network integrity, supports its view that the non-price terms and conditions of the Undertaking are reasonable.[214]

8.2.2. Submitters' overall views as to 'reasonableness'

The Commission received three submissions specifically commenting on the non-price terms and conditions. Telstra submitted that, in general, a number of the non-price terms and conditions are not reasonable in that they:

- are not in the LTIE;
- go well beyond what is required to protect Vodafone's legitimate business interests; and
- do not adequately address the interests of those with rights of access to the declared service.[215]

AAPT highlighted a number of concerns it has with specific non-price terms and conditions which are discussed in detail below.[216]

---

[212] Section 152AH(1)(c) of the Act.
[213] Section 152AH(1)(e) of the Act.
[214] Vodafone submission of 23 March 2005, pp. 31-39.
[215] Telstra submission, pp. 11-12.
[216] AAPT submission on price and non-price terms, pp. 4 –7. Note that this submission was received in October 2005, and therefore, for the purposes of this draft decision, the Commission has placed limited weight on this submission.

Hutchison submits that the non-price terms and conditions contained in the Undertaking are not reasonable because they do not sufficiently protect access seekers. Hutchison states that it would not agree to terms such as those contained in the Undertaking as part of a commercial negotiation.[217]

8.2.3. Assessment of specific non-price terms and conditions

This section includes an assessment of particular non-price terms and conditions which are included in the Undertaking. It does not include discussion of all the non-price terms and conditions. Rather, it focuses on those terms and conditions that are likely to be of most significance. The discussion also includes consideration of the various submissions made by interested parties in relation to these specific non-price terms and conditions.

Creditworthiness

Clause 7 of the Access Agreement relates to credit management and security. Vodafone stipulates a range of events in which Vodafone becomes entitled to conduct a review of the creditworthiness of the access seeker. Interested parties have concerns with these circumstances.

Telstra submits that the provisions in the Undertaking go beyond what is required to protect Vodafone's legitimate commercial interests. Specifically, Telstra expresses concern that Vodafone may review the creditworthiness of the access seeker irrespective of whether circumstances reasonably require such a review. Telstra notes that such a review may take place at Vodafone's absolute discretion within six months of entry into the Access Agreement.[218]

Similarly, AAPT considers that the grounds giving rise to the right to conduct a creditworthiness review are vague and may be too easily triggered. In particular, AAPT points to:

- clause 7.1(a)(ii)A (Vodafone acting reasonably considers that there is the possibility of an Insolvency Event) – this only requires the 'possibility of an Insolvency Event occurring in order to trigger a creditworthiness review'. Further, AAPT considers the definition of Insolvency Event to be inadequate in that the appointment of external administration should not be an Insolvency Event unless the appointment has continued for 20 business days;
- clause 7.1(a)(ii)B (the access seeker has failed to pay any amounts by the due date) – should only be triggered if the unpaid amount exceeds a minimum amount that remains unpaid for 5 business days after Vodafone has informed the access seeker that the due date has passed and that payment has not been received; and
- clause 7.1(a)(ii)C (a forecast of significant increase in the amount of the service to be purchased by the access seeker) – the word "significant" should be defined as a 50% or greater increase.[219]

---

[217] Hutchison submission, August 2005, p. 15.
[218] Telstra submission, p. 15.
[219] AAPT submission on price and non-price terms, p. 5.

Hutchison also submits that clause 7 is unreasonable. For instance, it argues that clause 7.1(a)(ii)B of the Access Agreement should only relate to amounts that are not in dispute. A grace period of 30 days after the due date should apply.[220]

AAPT has concerns with clause 7.1(b)(i) which relates to the obligations on the access seeker to cooperate with Vodafone in its conduct of the creditworthiness review. AAPT submits that Vodafone should not have direct access to access seeker records during the creditworthiness review. An independent third party should be appointed to conduct an audit with the third party report, suitably edited, to be given to Vodafone.[221]

Telstra submits that the circumstances in which Vodafone may demand security from an access seeker are unreasonable. Telstra notes that Vodafone may request the provision of security if it forms the view that the access seeker does not meet its reasonable security requirements. Further, Telstra notes the precondition to the right to demand security, that is, Vodafone's view, is not even subject to a reasonableness test. Telstra argues that Vodafone's security requirements are not specified and are therefore uncertain.[222]

AAPT submits that clause 7.2 gives Vodafone the right to seek security where the access seeker does not meet Vodafone's 'reasonable security requirements'. This terms is considered to be too vague and it should be tied to factors such as the inability of the access seeker to pay its debts.[223]

Likewise, Hutchison submits that clause 7.2(a) is too broad and that some limits should be imposed upon Vodafone's 'reasonable security requirements' and the type and quantum of financial security. Further, Hutchison submits that clause 7.2(b) provides only 10 business days to put a Financial Security in place, whereas Hutchison considers 40 business days to be reasonable.[224]

The Commission's view

The Commission agrees there are problems with the creditworthiness provisions of the Agreement. These concerns largely align with those of interested parties who would seem to raise some legitimate issues, particularly in regard to the circumstances in which a credit review may be triggered and the threshold for the provision of security. Overall, the Commission is of the view that the creditworthiness provisions provide too much discretion for Vodafone and, in other respects, lack certainty. As a consequence, the Commission believes that they go beyond what Vodafone reasonably requires to protect its legitimate business interests.

Amendments to service and network

Clause 9 of the Access Agreement provides that Vodafone may modify, change or substitute the underlying technology of the service or service specifications where it:

- will result in improved functionality or performance of the service;
- does not have a material adverse effect on the access seeker; and

---

220 Hutchison submission, p. 15.
221 AAPT submission on price and non-price terms, p. 5.
222 Telstra submission, p. 15.
223 AAPT submission on price and non-price terms, p. 5.
224 Hutchison submission, p. 15.

- does not contravene Vodafone's statutory obligations.

This can be done by giving the access seeker a minimum of 30 days notice of the modification.

The Commission's view

Changes to technology and technology specifications is an important issue for access seekers in that, if not carefully managed, they can result in major disruption to an access seeker's business. The modification clause only applies where it is envisaged that it will not have a material adverse effect on the access seeker although this aspect of the proposal can itself be a source of disagreement and dispute. The Commission notes that the Model Terms and Condition for Core Telecommunications Services (Model Terms)[225] provides that an access provider should provide an access seeker with an equivalent period of notice to that which it provides itself, and, at a minimum, the notice period should be 40 business days (except in relation to matters that would have no, or only a minor, effect on the access seeker).[226]

Confidentiality

Telstra submits that there are certain aspects of the confidentiality provisions in the Access Agreement that are unreasonable. For example, it notes that clause 11.4 confers on Vodafone the ability to use 'Network Information' in certain prescribed circumstances such as to undertake planning and maintenance or as required by the Commission. On the one hand, Vodafone recognises 'Network Information' as being confidential, but on the other hand, the provisions allow Vodafone to use the information provided it is aggregated with other information and is anonymously disclosed.

Telstra notes that the provisions in this regard are not mutual (unlike the other confidentiality provisions in the Undertaking).

Further, Telstra raises an apparent conflict between clauses 11.4(a) and clause 11.7 in terms of the provision of confidential information by order of a government agency. In one instance the disclosure of 'Network Information' may be done without the provision of notification to the other party, but in the other instance there must be notice to the other party.

Telstra also submits that the provisions in relation to 'Network Information' are inconsistent with the obligations under section 152AYA of the Act and with the 'springboard doctrine' of the law relating to confidentiality.[227] For these reasons, Telstra believes that Vodafone will have an unfair commercial advantage over access seekers.

AAPT submits that clause 11.3(a) is overly restrictive and that the parties should have the right to disclose 'Confidential Information' to a:

- regulator upon reasonable request; and
- its auditors for the purposes of audits.

---

225 ACCC, *Final decision – Model Non-price terms and conditions*, October 2003.

226 ACCC Model Terms at page 184.

227 That is, the use of confidential information in conjunction with other non-confidential information as a 'springboard' and which will constitute an unauthorised use. – Telstra submission, p. 16 at footnote 15.

AAPT notes the Commission's Model Terms in this regard, clause E.4(d) provides that 'each party should have the right to disclose Confidential Information in connection with legal proceedings, arbitration, expert determination, and other dispute resolution mechanism … for the purposes of seeking advice from a professional person in relation thereto'.

Both Telstra and AAPT express concerns with the definition of 'Confidential Information' which is set out in 'Attachment A – Dictionary' of the Agreement.

AAPT submits that the following types of information should not be treated as falling within the definition of 'Confidential Information':

- Information which is already in the public domain
- Information that is independently developed by the recipient
- Information that is received by the recipient from a third party source otherwise in breach of confidentiality obligations.[228]

Telstra submits that the definition is overly broad. It notes that the mere fact that a party designates information as confidential, does not mean that it is confidential. Further, Telstra point out that there is no basis to impose the confidentiality obligations of the Agreement on information obtained by a party prior to the entry into the Agreement.

Telstra also believes that the requirement to destroy or return confidential information goes beyond what is necessary. It notes that clause 11.8 requires a party to destroy or return the other party's confidential information 'as directed and when requested by the Disclosing Party at any time'. This appears to be irrespective of whether the confidential information is required for ongoing purposes or is otherwise in connection with the Agreement.[229]

The Commission's view

The Commission is concerned by the potential use of Network Information even though it may be aggregated with other Network Information and is disclosed on an anonymous basis. This would appear to conflict with the intent of section 152AYA of the Act which provides that information provided by an access seeker to enable the access provider to comply with an applicable SAO is confidential information.

The Commission considers there is some merit in the submitters' comments in relation to the definition of 'Confidential Information'. The definition would appear to lack precision and, as pointed out, makes information disclosed prior to entering into an agreement subject to the confidentiality obligations.

In relation to the disclosure of confidential information by the disclosing party, the Commission would prefer to see the party's rights as to the use of confidential information extend to those persons or to those instances referred to in clause E.4(d) of the Commission's Model Terms. Although the Model Terms do not strictly apply to the MTAS, the Model Terms represent a reasonable use of confidential information.

---

[228] AAPT submission on price and non-price terms, p. 5.
[229] Telstra submission, p. 15-16.

Further, the Commission agrees that the provisions in relation to the return or destruction of documents appear to go beyond what is necessary in order to protect the confidentiality of information.

Overall, the Commission is of the view that the confidentiality provisions of the Agreement tend to work in favour of the access provider more so than what is perhaps necessary, and, to this extent, do not necessarily represent a fair and balanced approach to the interests of the access provider and those of the access seeker.

Liability and indemnity

Clause 14 of the Access Agreement deals with liability and indemnity of the parties arising out of the Agreement. Both Telstra and AAPT raise some issues in respect of these clauses.

Telstra notes that, in large part, clause 14 has been drafted with regard to the Model Terms, even though they do not strictly apply to MTAS. Telstra, however, draws the Commission's attention to some aspects of the liability provisions that depart from the Model Terms, as follows:

- the subject of the indemnity in clause 14.5(a)(i) extends only to claims arising out of 'the death or injury to the People of the Indemnified Party'. Telstra submits the indemnity should properly extend to the death or injury of third parties;
- the indemnities in clause 14.5(a) apply to the extent that the claim 'relates to' a breach of the Agreement by the indemnifying party or an act or omission of the indemnifying party. The words 'relates to' are words of very broad import and may not require a causal connection between two events. In the present context, the words are too broad and have a potentially unreasonable operation. Telstra submits that the appropriate qualifier is 'caused by';
- clause 14.5(a)(iv) extends liability under the indemnity to 'any act or omission' of the indemnifying party irrespective of whether the act or omission was negligent. Telstra submits that these words are too broad and have potentially unreasonable operation. Liability should only extend to negligent acts or omissions;
- clause 14.7(b) is unreasonable because the clause provides that if Vodafone breaches any quality of service requirement prescribed in this Access Agreement, the access seeker's sole remedy is limited to
    - Vodafone taking all reasonable steps to comply with that quality of service requirement in the future; and
    - Vodafone making available to the access seeker the specific remedy for that quality of service requirement prescribed in the Agreement. Telstra submits that there is no real incentive for Vodafone to meet the quality of service requirements where the only 'remedy' is for Vodafone to take all reasonable steps to comply with such a requirement in the future. This is not a real remedy, it argues, and the Agreement does not prescribe any other 'specific remedy'.[230]

AAPT submits that:

---

[230] Telstra submission, pp. 17-18.

- under clause 14.5(a)(ii), the parties should not be liable for Consequential Loss under this indemnity (an indemnity for damage to equipment, network or other tangible property). In addition, this indemnity should be subject to a cap of $5 million.
- under clause 14.5(c), the exclusion effectively requires the access seeker to exclude all liability in its contracts with its end users. A clause of this nature will taint all of the access seeker customer contracts because the access seeker will maintain only one set of customer contracts under which it may sell its own services and services from other carriers. The access seeker will draft the liability clauses for those customer contracts on the basis of the most 'draconian' liability provisions contained in its carrier contracts.[231]

The Commission's view

The Commission notes these concerns and believes there is merit in a revision of some of the liability provisions as suggested. In particular, the Commission is concerned about Vodafone's approach and level of commitment in relation to breaches of quality of service standards. Clause 5 of the Access Agreement would commit Vodafone to providing an access seeker with an equivalent level of service in relation to technical, operational and other matters. However, this level of commitment does not appear to flow through to access seekers in terms of incentive to ensure that the requisite level of service standards is in fact met. The Commission believes that the service quality aspect of the Access Agreement in clause 14 can be improved along the lines of some drafting changes as suggested by interested parties.

Suspension

Clause 15 of the Access Agreement sets out the circumstances in which Vodafone may suspend the Agreement or the supply, or use of the service, immediately on written notice to the access seeker.

AAPT submits that clause 16.1(a) gives Vodafone the right to terminate the Agreement, if in its reasonable opinion, the access seeker has attempted to use, is likely to use, or has used the service in contravention of any law. The words 'likely to use', give Vodafone an unfair discretion. Similarly, AAPT objects to the use of the standard 'in the reasonable opinion of Vodafone'.

AAPT notes that clause 16.1(b) gives each party the right to terminate the Agreement if, 'in the reasonable opinion of that Party'. Again, there is objection to the use of the subjective standard.

Clause 16.2(a) gives Vodafone the right to terminate the entire Agreement where it is suspended for more that 30 days. AAPT submits that this is too broad and that Vodafone should only have the right to terminate that part of the Agreement, or the particular service, that was suspended.[232]

Telstra submits that the circumstances in which Vodafone is entitled to suspend or terminate the service are in many cases overly broad, based on subjective criteria and go beyond what is required to protect Vodafone's legitimate interests.

---

231 AAPT submission on price and non-price terms, p. 6.
232 AAPT submission on price and non-price terms, pp. 6-7.

For instance, Telstra points to the fact that the rights of suspension contained in clause 15(a) are all triggered by reference to the 'reasonable opinion of Vodafone'. It argues that there are some circumstances where the use of a subjective test is necessary and therefore acceptable, however, there are other instances where it is not appropriate. Telstra notes that Vodafone has an immediate right of suspension *if in its reasonable opinion*:

- Vodafone is entitled to terminate the Agreement for any reason;
- the access seeker suffers an Insolvency Event; or
- the continued operation of the Agreement or the supply of the service would be unlawful.

Telstra submits that a subjective test is not reasonable in these circumstances.

Further, Telstra points to what it regards as the overly broad definition of 'Insolvency Event' (which is defined in Attachment A – Dictionary), which unreasonably widens Vodafone's discretion. It cites the example of where a person threatens to take possession or control of any assets of the access seeker for the purpose of enforcing a charge will constitute an Insolvency Event. Telstra notes that this is regardless of whether that threat is well-founded or acted upon and nevertheless, this would give rise to a right of Vodafone to suspend the service.[233]

The Commission's view

The Commission agrees with the parties' submission in relation to the broad ambit of the discretion given to Vodafone in determining whether to suspend the service. While objectively-based discretions are not always possible, the Commission would prefer that, wherever possible, discretionary powers be based on an objective rather than a subjective basis. The Commission notes that this is the rule followed in the Commission's Model Terms.[234] The concern is not assisted by the open nature of the meaning of Insolvency Event. The Commission believes there is scope for narrowing the scope of this clause without compromising Vodafone's legitimate commercial interests.

Further, a reasonable remedial period once an Insolvency Event is reached might assist with the continuity of the provision of the service, as would an obligation on Vodafone to re-connect a service once a suspension event passes.

Termination

Clause 16 deals with the parties' respective rights of termination under the Agreement. Both Telstra and AAPT expressed concerns in relation to these provisions.

Telstra submits that some aspects of the provisions are overly broad and display the same problems as those expressed in relation to the 'Suspension' provisions discussed above. For example:

- the termination rights conferred by clause 16.1(a) and (b) are both based on the subjective test of, ' … if in the reasonable opinion …'; and

---

233 Telstra submission, pp. 13-14.

234 ACCC, *Final Determination – Model Non-price Terms and Conditions*, October 2003, p. 124.

- there is a right to terminate with immediate effect if a party suffers an Insolvency Event (clause 16.2(b)).

Telstra makes the following further points. The right conferred by clause 16.1(a) allows Vodafone to terminate if, in its reasonable opinion, the access seeker 'has attempted to use, is likely to use, or has used' the service in contravention of any law irrespective of whether Vodafone authorised or permitted such use. Telstra submits that this gives Vodafone the right to terminate irrespective of whether the access seeker has actually used the service in contravention of any law.

Further, either party may terminate without reason on six months notice. This means that the Access Agreement has no certain duration and may last for no longer than six months. Telstra argues that this does not facilitate commercial certainty as to the supply of the MTAS and is not in the LTIE.

Pursuant to clause 16.2(b), Vodafone may terminate immediately if the service is validly suspended for more than 30 days. Telstra notes that this would enable Vodafone to terminate in circumstances where the suspension was due to no fault of the access seeker.[235]

AAPT submits that clause 16.1(a) gives Vodafone the right the terminate the Agreement if in its reasonable opinion, the access seeker has attempted to use, is likely to use, or has used the service in contravention of any law. The words 'likely to use' give Vodafone an unfair discretion. Similarly, AAPT object to the use of the standard 'in the reasonable opinion of Vodafone'.

AAPT notes that clause 16.1(b) gives each party the right terminate the Agreement if, 'in the reasonable opinion of that Party'. Again, there is objection to the use of the subjective standard.

Clause 16.2(a) gives Vodafone the right to terminate the entire Agreement where it is suspended for more that 30 days. AAPT submit that this is too broad and that Vodafone should only have the right to terminate that part of the Agreement, or the particular service, that was suspended.[236]

The Commission's view

The use of the subjective standard which may give rise to a right of termination is of concern to the Commission. As noted earlier, the use of an objective standard is preferred wherever possible. This concern is exacerbated where the discretion might be exercised in relation to a circumstance where the access seeker 'has attempted to use' (the service in contravention of any law). This is very imprecise and represents a potential obstacle to effective access.

The right to terminate with immediate effect where there is an Insolvency Event is also of concern to the Commission, given the open nature of the meaning of Insolvency Event coupled with the subjective test on which the right to terminate can be exercised.

The right to terminate (particularly by the access seeker) on six months written notice would also appear to be at odds with the commitment by Vodafone to supply service for the duration of the Undertaking period and does not provide the commercial

---

[235] Telstra submission, p.14-15.
[236] AAPT submission on price and non-price terms, pp. 6-7.

certainty for the supply of the declared service that an undertaking is expected to bring about.

Similarly, the right to terminate after 30 days of the service being validly suspended also appears to be an unnecessary right of termination that can undermine certainty, especially where there may be potential controversy surrounding Vodafone's right to suspend the Agreement because of the broad nature of the discretion bestowed on Vodafone.

Network Conditioning Charge

Part B of the Service Schedule to the Access Agreement sets out the Price List for the provision of the service. The rates payable by the access seeker for the service comprise the Usage Charge and Network Conditioning Charge.

The Usage Charge is discussed in detail in the Chapters 5 and 8.

The Network Conditioning Charge is for network conditioning in Vodafone's network beyond Vodafone's Interconnect Gateway Exchanges, to enable the provision of the service to access seekers. The charge is not specified in the Agreement. The charge will be based on labour, materials and incidentals involved in the work undertaken. It is a precondition of the Access Agreement that such conditioning work will not commence until the access seeker has accepted a quotation for such work provided to the access seeker by Vodafone.

The Commission's view

The Commission understands that such work is necessary in order to supply the service. Further, it is probably reasonable that the charge cannot be specified until the extent of the conditioning work that is required is fully assessed. Nevertheless, the Commission notes the conditioning work will not commence until acceptance of the quote, which in effect means the service will not be supplied until the quote is accepted. Consequently, a dispute over the quote for conditioning work could be an obstacle to access. This underlines the importance of dispute resolution measures to deal with such threshold issues. However, as discussed below, dispute resolution measures to contend with such preliminary matters are not proposed in the Undertaking.

Billing and Payment

Annexure 2 of the Access Agreement provides the billing and payment mechanisms including invoicing, payment procedures, rights in relation to late payment and provision of billing information.

Hutchison submits that clause 3 of Annexure 2 should ensure that Vodafone may not in any circumstances bill for charges more than six months after the date on which they should have been invoiced.[237]

Similarly, AAPT submits that except in limited circumstances, Vodafone's right to back-bill should expire six months after the date the charge was incurred by the end user.[238]

The Commission's view

---

[237] Hutchison submission, p. 15.
[238] AAPT submission on price and non-price terms, p.7.

The Commission notes that clause A.5 of the Model Terms entitles an access provider to invoice an access seeker for charges previously uninvoiced provided, among other things, that

- the additional charges are reasonably substantiated; and
- no more than six months have elapsed since the date the amount was incurred by the access seeker's customer, except:
    - where the access seeker gives written consent to a longer period (consent not to be unreasonably withheld).[239]

Vodafone's clause 3 provides that Vodafone may invoice for charges previously omitted from an invoice provided no more than six months have elapsed since the initial invoice, unless the access seeker consents to a longer period (and such consent not be unreasonably withheld).

The Commission believes that the general principle in the Access Agreement is consistent in this respect is with the Model Terms and represents a reasonable position in relation to the billing of uninvoiced amounts. However, the six-month period should commence from the date the amount was incurred by the end-user rather than from the date of the initial invoice as provided for in Vodafone's proposed clause.

In forming this view, the Commission has had regard to the need for an access seeker to be able to recover money from its end-user and to meet its own billing obligation. The Commission considers that these factors would go toward whether consent to a longer period is given or reasonably withheld.

Quality of service

Telstra observes that there are some apparent conflicts between specific terms and conditions set out in the Undertaking – specifically, in relation to compliance with the SAOs.

Section 152AR of the Act sets out the relevant SAOs in respect of the declared service. These SAOs relate to the provision of the declared service, technical and operational quality of the service and fault detection, handling and rectification. The SAOs essentially require that the access provider provide the same level of service in respect of these matters to the access seeker as the access provider provides to itself.

Vodafone seeks to meet the quality of service obligations through clauses 5(a)(i) and (ii) of the Access Agreement. Vodafone undertakes to treat the access seeker in a manner consistent with the SAOs, which includes:

- taking all reasonable steps to ensure the technical and operational quality of the service is equivalent to that which Vodafone provides to itself; and
- taking all reasonable steps to ensure that the access seeker receives, in relation to the service, fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which Vodafone provides to itself.

Telstra submits that a number of clauses in the Undertaking that relate to quality of service issues import different standards to the one described in clause 5 of the Access Agreement. For instance, clause 8.2 relates to quality of service in relation to

---

[239] ACCC, *Model Non-Price Terms and Conditions*, p. 165.

the management of the parties' networks. It claims that this clause adopts a number of different quality standards, as follows:

- Vodafone is required, in the event of failure of the service, to correct faults as soon as reasonably practicable
- Vodafone must manage, notify and correct faults arising in its network 'as it would in the ordinary course for similar faults affecting the provision of other services by it'.

Telstra submits that the various standards appear to differ from the quality standard provided for in the relevant SAOs and supposedly adopted in clause 5 of the Access Agreement.[240]

The Commission's view

The Commission notes these apparent differences in quality of service standards. The appropriate standard is very clearly set out in clause 5 of the Access Agreement. The Access Agreement should be clear and consistent in terms of the standard to be applied across the relevant areas of the Agreement. Further, that standard should be at the level required by the SAOs. The Commission believes that any provisions that cast a different light on the proper standard to be applied should be clarified or removed from the Access Agreement.

Terms and conditions not specified in the Undertaking

There are a number of matters that are not addressed at all within the Undertaking itself. A pertinent example is in the area of dispute resolution, which is noted as Annexure 4 of the Access Agreement and Annexure 5 which is intended to contain the terms and conditions relating to network operation and fault management.

Further, the Commission notes that the Undertaking also relies on secondary material such as Annexure 3 of the Access Agreement which provides for the Interconnection Manual. The contents of the manual, however, are to be agreed between Vodafone and the access seeker at a later date and therefore the Commission has no knowledge of the proposed contents of the manual. It is clear, however, that this secondary document is intended to partly govern the access arrangements, even though it is unknown as to what those terms and conditions are to be.

In this regard, Telstra notes that there are a number of important matters not addressed by the Undertaking and which are left to be agreed between the parties. For example, ordering and provisioning (Annexure 1), network operation and fault management (Annexure 5) and Vodafone's security arrangements (clause 7). Vodafone claims that the Undertaking provides 'clear and concise terms covering all relevant issues and potential concerns', but in light of the matters left open, Telstra asserts that the statement is demonstrably false.[241]

Hutchison submits that proposed Undertakings have been rejected on the basis of insufficient terms and conditions and the uncertainty created for access seekers. Hutchison submits that Vodafone's decision not to specify all the terms and conditions in the Undertaking is not reasonable.[242]

---

240 Telstra submission, p. 12.
241 Telstra submission, p. 18.
242 Hutchison submission, p. 16.

Dispute resolution

Clause 18 of the Access Agreement contains the dispute resolution clauses. The clauses provide that the parties must resolve:

- a Pass Through Dispute, in accordance with the dispute resolution procedures set out in Part C of the Services Schedule; and
- any other dispute arising under or in relation to the Agreement, in accordance with the Dispute Resolution Procedures.

'Pass Through Dispute' means a dispute arising under clause 4 of Part C of the Service Schedule. The 'Pass Through Dispute' procedures are clearly set out in Part C, which outline the process for resolving disputes in relation to these matters.

The other 'Dispute Resolution Procedures' means the procedures set out in Annexure 4. Annexure 4, however, is blank, as these terms and conditions are to be agreed between the parties.

Hutchison notes that the procedures to be adopted under clause 18 are not specified. Further, Hutchison considers the dispute resolution procedures to be of critical importance and should be specified in the Undertaking.[243]

AAPT notes that in its experience, the dispute resolution clauses are one of the more heavily negotiated provisions in carrier contracts, particularly the section dealing with billing disputes.

The Commission has no knowledge of how disputes will be resolved in relation to matters other than Pass Through Disputes, as these procedures must be agreed between the parties subsequent to acceptance of the Undertaking or presumably, in the absence of agreement, following arbitration determination by the Commission. This means, conceivably, that where there is no agreement, there could be no dispute resolution procedures in place for some time following the implementation of access arrangements and, if they are not agreed, they are dependent on Commission arbitration.

Carrier Interconnect Manual

Clause 4.2 provides that the parties must supply Interconnection Services to each other in accordance with and subject to the terms of the Agreement and the Interconnection Manual.

Interconnection Services are defined in the dictionary of the Agreement as, 'each service that enables the network of each party to interconnect to allow for the provision of the (MTAS) Service by Vodafone to the Access Seeker'.

Interconnection Manual means the interconnection manual set out in Annexure 3. As noted earlier, Annexure 3 is deliberately left blank, as the terms of the manual are to be agreed between the parties.

Accordingly, the Commission has no knowledge of what the parties must do in order to comply with clause 4.2 of the Agreement and this will not become apparent until after the Undertaking would come into operation, if the Undertaking were accepted by the Commission.

---

[243] Hutchison submission, p. 15.

Interconnection

Section 152AR(5) sets out the relevant SAOs in respect of interconnection of facilities, including quality and fault rectification. Again, the standard is that these aspects of the service be provided to the access seeker to the same level as the access provider provides to itself.

Telstra notes that clause 4.2 of the Access Agreement provides that the parties must supply interconnection services to each other in accordance with the relevant terms of the Undertaking and the Interconnection Manual. The Interconnection Manual is yet to be agreed by the parties. Further, clause 5, which relates to the quality of the service, does not include interconnection services. Accordingly, there is no quality of service standard in relation to interconnection services.

The Commission believes that the SAOs in relation to interconnection of facilities is an applicable SAO and therefore the Undertaking must be consistent with this SAO. The absence of the specific interconnection SAO clause in the Agreement, however, does not make the Undertaking inconsistent with the applicable interconnection SAO (refer to chapter 10 for further discussion of this issue).

The above discussion does, however, highlight that there is apparently no quality of service obligation in relation to interconnection services. This may or may not be a matter that is to be dealt with in the Interconnection Manual, but at this stage all that can be said is that the Undertaking is silent in respect of this set of obligations. The Commission believes that, to the extent that a quality of service standard in respect of Interconnection Services is included in an undertaking, that standard should be reflective of the level required by the Interconnection SAO under section 152AR(5) of the Act.

8.3. Conclusion on 'reasonableness of non-price terms and conditions

It is evident that the Undertaking does not attempt to deal with the full range of non-price terms and conditions of access. Further, there would appear to be a number of documents which will govern the access relationship, but for which the terms and conditions still need to be negotiated between Vodafone and an access seeker. Notable in this respect is the absence of any form of dispute resolution procedures – other than those relating to Pass-Through Disputes – and the Interconnection Manual.

This, in effect, means that a proportion of the non-price terms and conditions that will govern the supply of the service, and the relationship between Vodafone and the access seeker, are unknown and will not be known until after the Undertaking were to come into effect (should the Commission accept the Undertaking). Further, it means that there is still likely to be considerable reliance on the Commission arbitrating the terms of access, as and when this may be required.

Despite this, the Commission notes that Vodafone is entitled, under the statutory regime, to submit an undertaking that does not stipulate all the terms and conditions of access. Further, the Commission is required to assess whether the terms and conditions specified in the Undertaking are reasonable.

The question of whether the terms and conditions specified in the Undertaking are reasonable is answered by an overall assessment of all the relevant matters based on the matters to which the Commission must have regard under section 152AH of the Act. This includes an assessment of the price and non-price terms and conditions of the Undertaking. Having had regard to the reasonableness criteria, the Commission

has identified a number of non-price terms and conditions in the Undertaking that cause the Commission some concern, principally because they appear to empower the access provider beyond what might be considered necessary to protect the access provider's legitimate business interests. These concerns have been described throughout this chapter.

Overall, the Commission believes there is scope for improving the non-price terms and conditions in the areas noted, so as to provide greater balance and certainty to the proposed terms of access.

9. Overall conclusion on the reasonableness of Vodafone's terms and conditions

After detailed consideration of the price and non-price terms and conditions contained in Vodafone's Undertaking, the Commission has reached the view that the price terms and conditions are not reasonable, and that there are number of non-price terms and conditions that cause the Commission some concern. Accordingly, the Commission is not satisfied that the terms and conditions specified in Vodafone's Undertaking are reasonable when assessed against the relevant criteria in the Act.

10. Consistency with the SAOs

Under section 152BV(2)(b) of the Act, the Commission must not accept an undertaking unless it is satisfied that it is consistent with the SAOs that are applicable to a carrier or CSP. The SAOs become applicable when an access provider supplies a declared service to itself or others. These obligations were referred to above in section 3.2.2. The purpose of this provision is to ensure that an undertaking at least meets the basic level of access obligations that would normally apply to the provider of the declared service, but for the undertaking. This chapter assesses whether Vodafone's Undertaking is consistent with the SAOs applicable to Vodafone through its proposed supply of the MTAS on its GSM network.

10.1. Approach to assessing consistency with the SAOs

The Act does not specify any particular approach for assessing whether an undertaking is consistent with the SAOs applicable to an access provider. Notwithstanding this, the Commission finds it useful to adopt the following approach:

- identify those SAOs that are applicable to a particular access provider; and
- assess whether the proposed undertaking is consistent with the applicable SAOs. This assessment may involve consideration of whether the terms and conditions raise any inconsistencies with the applicable SAOs. If the terms and conditions are not found to be inconsistent with the SAOs, the Commission is likely to regard the undertaking as being consistent with the applicable SAOs.

The Commission's view is that the meaning of the word 'consistent' in section 152BV(2)(b) of the Act is that it takes its ordinary and natural meaning. The Commission believes that the ordinary and natural meaning of *"consistent with"* is that there be some uniformity and adherence to the thing in question but, that there is no requirement for exact or complete correspondence.

The Commission, therefore, in applying this test to the relevant subject matter will not be requiring that a matter be precisely in accordance with the applicable SAOs, but rather, there be at least a reasonable level of conformity with the obligation.

For an obligation to be consistent with the applicable SAOs, it must be consistent with all the obligations imposed on the access provider. The SAOs are aggregated to determine consistency under section 152BV(2)(b) of the Act.

In this context, the Commission is not concerned with the reasonableness of the terms and conditions of the Undertaking as required under section 152(2)(d) of the Act, as this was the subject of a separate consideration in Chapters 7, 8 and 9 of this report.

In this assessment, the Commission has especially considered whether the *non*-price terms and conditions specified in the Undertaking are consistent with each of the applicable SAOs. The Commission considers that the price terms and conditions contained in the Undertaking are more relevant to an assessment of reasonableness.

10.2. Identification of applicable SAOs

The Act requires that there be consistency between the proposed undertaking and the applicable SAOs. This raises the issue of determining the applicable SAOs that arise

out of the Undertaking. The Explanatory Memorandum to the Trade Practices Amendment (Telecommunications) Bill 1996 explains that:

> The *applicable standard access obligations* are those obligations set out in proposed s. 152AR that are applicable to the carrier or provider making the access undertaking. A standard access obligation may not be applicable because of an exemption … or because the carrier or carriage service provider does not supply the declared service concerned.[244]

Vodafone's submission

In Clause 3(b)(iii) the Undertaking document, Vodafone notes that its Undertaking:

i. does not specify all the terms and conditions on which Vodafone will comply with the standard access obligations that are applicable to it in respect of the Declared Service, but only some of them. This Undertaking therefore does not constitute an offer by Vodafone to provide the Declared Service to an Access Seeker;

ii. does not apply to the Declared Service to the extent that there are no standard access obligations applicable to Vodafone in respect of the Declared Service for reasons including, without limitation, the granting of an exemption by the Commission under section 152AT of the TPA in respect of the Declared Service or the variation or revocation of a declaration by the Commission under section 152AO of the TPA in respect of the Declared Service; and

iii. only applies to the supply of the Declared Service in respect of voice calls on Vodafone's GSM network.[245]

Vodafone considers that the non-price terms and conditions of the Undertaking specifically ensure consistency with the SAOs and, therefore, paragraph 152BV(2)(b) of the Act, since:

- clauses 4.1 and 5 specifically provide that Vodafone must supply the Service in accordance with the Undertaking and consistent with the SAOs. Vodafone considers that this ensures the consistency of the Undertaking with paragraph 152AR(3)(a) of the Act;
- clause 5(a)(i) provides that Vodafone must ensure the equivalence of technical and operational quality of the service. Vodafone considers that this ensures the consistency of the Undertaking with paragraph 152AR(3)(b) of the Act; and
- clause 5(a)(ii) provides that Vodafone must ensure the equivalence of fault detection, handling and rectification. Vodafone considers that this ensures the consistency of the Undertaking with paragraph 152AR(3)(c) of the Act.[246]

The Commission agrees that those SAOs identified by Vodafone are applicable with respect to Vodafone's supply of the MTAS. However, the Commission considers that all of the following SAOs are applicable to Vodafone in respect of its supply of the MTAS:

- the SAO relating to supply of the service – section 152AR(2)(a) of the Act;
- the SAO relating to the technical and operational quality of the service to be supplied – section 152AR(2)(b) of the Act;[247]

---

244 Parliament of the Cth of Australia – Trade Practices Amendment (Telecommunications) Bill 1998 Explanatory Memorandum at page 57.

245 Vodafone Undertaking, Clause 3, p. 3.

246 Vodafone submission, p. 31.

247 This includes ordering and provisioning of the service (section 152AR(4A)).

- the SAO relating to fault detection, handling, rectification and timing of the service to be supplied – section 152AR(2)(c) of the Act;
- the SAO relating to interconnection of facilities – section 152AR(5) of the Act; and
- the SAO relating to the provision of billing information to the access seeker – section 152AR(6) and (7) of the Act.

These are considered in turn below.

10.3. Assessment of consistency with each applicable SAO

10.3.1. Service to be supplied

The applicable SAO in respect of the supply of a declared service is set out in section 152AR(3)(a) of the Act. It provides that, if requested to do so by an access seeker, an access provider must supply an active declared service to the access seeker in order that the access seeker can provide carriage and/or content services.

The Commission notes that the Undertaking relates to a service that is narrower in scope than the declared MTAS service. Clause 3(b)(iii) of the Undertaking provides that it:

> … only applies to the supply of the Declared Service in respect of voice calls on Vodafone's GSM network.[248]

As such, the Undertaking does not include voice calls terminating on Vodafone's WCDMA (3G) network.

The Commission is of the view that an access provider can give an access undertaking in relation to a subset of a declared service. Conversely, an access seeker could seek access to all or a subset of a declared service. If the Undertaking were to be accepted in its present form by the Commission, Vodafone would remain under an obligation to provide access to that part of the declared service not covered by the Undertaking. Access would be subject to commercial agreement or failing that, arbitration by the Commission.

Further, even though an undertaking can pertain to part of a declared service, the terms and conditions of the undertaking, which includes the service description, are still subject to a reasonableness test.

The Commission notes that Vodafone is offering to supply the MTAS according to the terms and conditions set out in the Undertaking, and the proposed Access Agreement. To the extent that Vodafone gives an undertaking for the supply of a declared service, albeit part of a declared service, in purported compliance with the obligation under section 152AR(3)(a) to supply the declared service, the Commission is satisfied that this part of the Undertaking is consistent with the applicable SAO.

10.3.2. Technical and operational quality of the service to be supplied

The applicable SAO in respect of the technical and operational quality of the service to be supplied is set out in section 152AR(3)(b) of the Act which provides that an access provider must takes all reasonable steps to ensure that the technical and

---

[248] Vodafone Undertaking, Clause 3(b)(iii), p. 3.

operational quality of the service supplied to the access seeker is equivalent to that which the access provider provides to itself.

Clause 5(a)(i) of Vodafone's proposed Access Agreement appears to apply the relevant SAO. It states that in supplying the service, Vodafone must take:

> … all reasonable steps to ensure that the technical and operational quality of the Service supplied to the Access Seeker is equivalent to that which Vodafone provides to itself.[249]

Apart from this general non-discrimination principle, the Undertaking does not contain any specific provisions about how Vodafone will give effect to this obligation. The Commission notes, however, that there is no obligation on Vodafone to specify the precise terms and conditions on which it will implement the principle.

To the extent that Vodafone gives an undertaking to provide equivalent technical and operational quality of service to that which it provides itself, the Commission is satisfied that this part of the Undertaking is consistent with the applicable SAO.

10.3.3. Fault detection, handling, rectification and timing of the service to be supplied

The applicable SAO in respect of fault detection, handling, rectification and timing of the service to be supplied is set out in section 152AR(3)(c) of the Act, which provides that an access provider must take all reasonable steps to ensure that the access seeker receives, in relation to the supplied service, fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which the access provider provides to itself.

Clause 5(a)(ii) of Vodafone's proposed Access Agreement appears to apply the relevant SAO. It states that in supplying the service, Vodafone must ensure that an access seeker:

> … receives, in relation to the Service, fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which Vodafone provides itself.[250]

Apart from this general non-discrimination principle, the Undertaking does not contain any specific provisions in relation to fault detection, handling, rectification and timing of the service. The Commission notes, however, that there is no obligation on Vodafone to specify the precise terms and conditions on which it will implement the principle.

To the extent that Vodafone gives an undertaking to provide equivalent fault detection, handling, rectification and timing of services to that which it provides itself, the Commission is satisfied that the Undertaking is consistent with this SAO.

10.3.4. Interconnection

The nature of the Undertaking and the service concerned suggests to the Commission that section 152AR(5) of the Act is an applicable SAO for the purposes of supplying the declared service. Section 152AR(5) of the Act relevantly provides that:

> (5) If an access provider:
>
> (a) owns or controls one or more facilities; or

---

[249] Vodafone, Services Agreement, Clause 5(a)(i), p. 3.
[250] Vodafone, Services Agreement, Clause 5(a)(ii), p. 3.

(b) is a nominated carrier in relation to one or more facilities;

the access provider must, if requested to do so by a service provider:

(c) permit interconnection of those facilities with the facilities of the service provider for the purpose of enabling the service provider to be supplied with active declared services in order that the service provider can provide carriage services and/or content services; and

(d) take all reasonable steps to ensure that:

(i) the technical and operational quality and timing of the interconnection is equivalent to that which the access provider provides to itself; and

(ii) if a standard is in force under section 384 of the Telecommunications Act 1997—the interconnection complies with the standard; and

(e) take all reasonable steps to ensure that the service provider receives, in relation to the interconnection, fault detection, handling and rectification of a technical and operational quality and timing that is equivalent to that which the access provider provides to itself.

The Commission notes that the Undertaking would appear to be in relation to the provision of a service that requires the interconnection of facilities.

Clause 4.2 of Vodafone's proposed Access Agreement states that:

> The parties must supply Interconnection Services to each other in accordance with and subject to the terms of this Agreement and the Interconnection Manual.[251]

However, the 'Interconnection Manual' to which the above clause refers, is not included in the documentation, but is to be 'agreed between the parties'.

The Commission considers that the Undertaking permits the interconnection of Vodafone's facilities with those of an access seeker, based on certain terms and conditions (i.e. price and non-price) in order that an access seeker can procure a sub-set of the declared service – in this case, voice termination on Vodafone's GSM network.

The Commission further notes that the Undertaking is silent in relation to terms and conditions pertaining specifically to technical and operational quality and timing of interconnection and fault detection handling and rectification, although arguably, the non-discrimination clauses cited in the previous two sections cover these interconnection obligations.

Even if the Undertaking is silent in this respect, and even though the Commission considers the interconnection SAOs to be applicable to Vodafone, this does not of itself make the Undertaking inconsistent with the applicable SAOs. As noted earlier, the Commission interprets consistency to mean broad conformity with the thing in question and tests consistency by whether or not the terms and conditions are inconsistent with the applicable SAOs.

In conclusion, the Commission considers section 152AR(5) of the Act to be an applicable SAO and although this is not noted specifically in the Undertaking, the Commission is satisfied that the Undertaking is consistent with the SAOs applicable to Vodafone in respect of the interconnection of facilities.

10.3.5. Provision of billing information

Section 152AR(6) and (7) of the Act provides that if an access seeker uses a declared service supplied by an access provider, the access provider, if requested to do so by the access seeker, must give the access seeker billing information in connection with

---

[251] Vodafone, Services Agreement, Clause 4.2, p. 2.

the supply of the declared service. Further, the billing information must be given at such times or intervals, and in such manner and form and set out such particulars, as ascertained by the Trade Practice Regulations (the Regulations).

This is a SAO that applies to providers of declared services to access seekers generally. Regulation 28S of Division 2 of the Regulations sets out the nature of the billing information required to be provided pursuant to section 152AR(7) of the Act. Broadly, the Regulations provide that billing information must be given at the times agreed and in a manner and form agreed, and must include the number from which the call was made, the time the call started, the duration of the call and certain other particulars.

The Commission notes that Clause 6 of Vodafone's proposed Access Agreement relates to 'Charges' applicable to the access seeker. Specifically, clause 6.1 states in relation to 'billing procedure' that:

> The parties must bill and pay for the Service in accordance with the terms and conditions set out in Annexure 2 – Billing and Payment.[252]

Annexure 2 to the Access Agreement sets out the obligations in relation to invoicing and payment, late payment and provision of information. For example, clause 2 provides that Vodafone must, on a timely basis, provide an access seeker with all information reasonably required to verify rates and charges.

The Commission considers that the SAOs as set out in sections 152AR(6) and (7) of the Act are SAOs applicable to Vodafone in relation to the Undertaking. The Commission is satisfied that the Undertaking is consistent with the applicable SAOs in respect of Vodafone's billing obligations under the Act.

10.4. Conclusion

While the terms and conditions in the Undertakings do not specify in any detail the extent to which the Undertaking meets the various access obligations, none of the terms and conditions appear inconsistent with any of the relevant SAOs.

In meeting the applicable SAOs, the non-discrimination principle expressed in clause 3 of Vodafone's proposed Access Agreement is critically important to the Undertaking. The SAOs essentially require provision of the declared service and additional supporting services to an equivalent standard to that which Vodafone provides to itself. This is to allow an access seeker to fairly compete in terms of the provision of the service to be supplied. Overall, Vodafone, through the Undertaking, agrees to provide the requisite level of service in respect of the matters applicable to it. Accordingly, the Commission is satisfied that the Undertaking is consistent with the SAOs that are applicable to Vodafone as an access provider of the MTAS pursuant to section 152BV(2)(b) of the Act.

---

[252] Vodafone, Services Agreement, Clause 6.1, p. 3.

11. Draft decision on the Vodafone Undertaking

Pursuant to section 152BV(2)(a)(i)(ii) of the Act, the Commission has published the Undertaking and invited submissions on it. Further, the submissions received within the time limit specified by the Commission in forming its views on the Undertaking have been considered.

Pursuant to section 152BV(2)(b) of the Act, the Commission is of the view that the Undertaking is consistent with the standard access obligations that are applicable to Vodafone.

Pursuant to section 152BV(2)(d) of the Act, the Commission is of the overall view that the terms and conditions specified in the Undertaking are **not** reasonable.

Pursuant to section 152BV(2)(e) of the Act, the Commission notes that the expiry time of the Undertaking occurs within three years of the date on which the Undertaking comes into operation.

Accordingly, as the Commission is not satisfied that the terms and conditions in the Undertaking are reasonable, the Commission's draft decision is that the Undertaking be rejected.

Appendix 1: Submissions received to Discussion Paper

AAPT

AAPT, *Submission to the ACCC: Vodafone's Allocated Cost Model*, August 2005.

AAPT, *Submission to the ACCC in response to the Discussion Paper on Vodafone's Undertaking with respect to the Domestic Digital Mobile Terminating Access Service*, October 2005.

AAPT, *Submission by AAPT Ltd to the ACCC, Estimates of Ramsey-Boiteux Mark-Ups & Network Externality Effects*, October 2005.

Hutchison

Hutchison, *Submission by Hutchison Telecommunications (Aust) Ltd and Hutchison 3G Aust Pty Ltd*, August 20005.

Annexure 1 – *Statutory factors to which the Commission must have regard when assessing the reasonableness of the undertaking.*

Annexure 2 – Marsden Jacob Associates, *Comments on Discussion Paper: Vodafone's Undertaking in relation to the Domestic Digital Mobile Terminating Access Service*, 17 August 2005.

Annexure 3 – Gibson-Quai AAS, *Comments on the ACCC Discussion Paper on Vodafone's Undertaking in relation to the Domestic Digital Mobile Terminating Access Service*, August 2005.

Annexure 4 – *Curriculum Vitae of Dominic Quai*

Annexure 5 – *Curriculum Vitae of Jasper Boe Mikkelsen*

Hutchison, Supplementary Submission, 30 September 2005

Telstra

Telstra, *Submission in response to the Commission Discussion Paper: Vodafone's Undertaking in relation to the Domestic Digital Mobile Terminating Access Service*, August 2005

The Competitive Carriers Coalition (CCC),

Professor Martin Cave and Charles Chambers, *Commentary on the Optus and Vodafone undertakings in relation to domestic digital mobile terminating access service*, 3 May 2005

Dr Andrew Wait, The *Waterbed Effect: A Comment on Frontier Economic (2005), A report prepared for Competitive Carriers' Coalition*, November 2005

Optus

Optus, *Submission to the ACCC on Vodafone's revised mobile terminating access service undertaking lodged 23 March 2005*, August 2005.

Appendix 2: Assessment of the Frontier model

As noted previously, in support of its Undertaking, Vodafone has submitted a report prepared on its behalf by Frontier Economics (Frontier). It is based on a model developed by Frontier (based on Vodafone's 2002-03 data) to estimate the 'welfare-maximising' charges for the MTAS. These 'welfare-maximising' estimates include marks ups on the 'long-run incremental cost' (LRIC) of the MTAS to reflect the recovery of 'fixed and common costs' (FCCs) based on Ramsey-Boiteux (R-B) principles and a 'network externality surcharge' (NES) on the MTAS.

Vodafone has opted 'not to adopt' Frontier's estimate its proposed Undertaking price terms.[253] It explains that:

> This is because Vodafone wishes to ensure an orderly and timely assessment of the Undertaking by the Commission. In response to previous submissions on these issues, the Commission appears to be vigorously opposed to considering or including either markup to the point of having pre-determined its position.[254]

However, Vodafone submits that the Commission's prior views on these issues are 'flawed; and that it 'reserves the right to review its position if given the opportunity to present its case on appeal'.[255] Vodafone also considers that Frontier's estimates provide 'further justification of the proposed Undertaking prices' in that they are 'at the low end of a reasonable range of possible estimates that would be consistent with the statutory criteria'.[256]

This appendix includes an assessment of the credibility of the Frontier model and its outputs. It is divided into four main sections:

- section A3.1 – overview of the Frontier model structure and outputs;
- section A3.2 – assessment of the LRIC and FCC estimates;
- section A3.3 – assessment of the R-B mark-up; and
- section A3.4 – assessment of the 'network externality' mark-up.

A2.1 Overview of the Frontier model

The Frontier model is specified to estimate the 'welfare-maximising' charge for mobile subscription, mobile outbound and FTM services. The MTAS estimate is then derived by subtracting a 'fixed retention rate' from the FTM charge. Notably, the Frontier model is applied to two different scenarios:

- *Scenario 1* where FCCs include all network and central function costs; and
- *Scenario 2* where FCCs include all network costs, central function costs and non-network indirect costs.

Further, the Frontier model is applied for three different sets of elasticity assumptions within each scenario. This results in six different modelling scenarios, which are shown in Tables A2.1 and A2.2 below.

---

253 Vodafone submission, p. 5.
254 Vodafone submission, p. 5.
255 Vodafone submission, p. 5.
256 Vodafone submission, p. 23.

Table A2.1: Frontier model outputs – *Scenario 1*

Run	Subscription elasticity	Mobile outbound elasticity	FTM elasticity	Externality mark-up	R-B mark-up	Total mark-up	Implied LRIC	MTAS 'welfare-maximising'
1	−0.3	−0.6	−0.6	4.41	6.40	10.80	c-i-c	22.32
2	−0.3	−0.3	−0.3	6.33	8.54	14.87	c-i-c	26.39
3	−0.6	−0.3	−0.3	8.06	10.37	18.44	c-i-c	29.96

Table A2.2: Frontier model outputs – *Scenario 2*

Run	Subscription elasticity	Mobile outbound elasticity	FTM elasticity	Externality mark-up	R-B mark-up	Total mark-up	Implied LRIC	MTAS 'welfare-maximising'
1	−0.3	−0.6	−0.6	4.23	8.93	13.16	c-i-c	23.02
2	−0.3	−0.3	−0.3	6.22	12.20	18.43	c-i-c	28.29
3	−0.6	−0.3	−0.3	8.29	14.58	22.87	c-i-c	32.73

As shown in the above tables, on the basis of its modelling, Frontier estimates that the 'welfare-maximising' charge for the MTAS lies between **22.32** and **32.73 cpm.** This range incorporates mark-ups of between 10.80 and 22.87 cpm on the basis of the R-B principles and the inclusion of a NES.

A2.2 Assessment of Frontier's cost inputs

The Frontier model results are based on two critical cost estimates: the LRIC of Vodafone supplying the MTAS and those costs defined as FCCs across the relevant services. These are discussed in turn below.

A2.2.1 LRIC estimates

Frontier notes that Vodafone provided it with LRIC estimates for three services: mobile subscription, mobile outbound and FTM calls. These are shown in Table A2.3 below.

Table A2.3: LRIC estimates used in Frontier model

LRIC estimate	Scenario 1	Scenario 2
Mobile subscription ($)	c-i-c	c-i-c
Mobile outbound (cpm)	c-i-c	c-i-c
FTM	c-i-c	c-i-c
MTAS (derived)	c-i-c	c-i-c

As this table shows, the estimated LRIC for the MTAS is either c-i-c cpm or c-i-c cpm.

The Commission's view

The Commission notes that, in its Undertaking material, Vodafone does not appear to provide an explanation as to how the LRIC estimates for the MTAS (shown in the table above) reconcile with the original PwC model outputs. That said, dividing those costs which were allocated *directly* to the MTAS in the PwC model by the relevant MTAS traffic volumes yields a per-unit estimate (c-i-c cpm) that is very close to the lower bound LRIC estimate of c-i-c cpm used in Scenario 1 of the Frontier model..

The LRIC estimates used in the Frontier model are significantly higher than the c-i-c cpm estimate Optus arrived at in the context of its Undertaking with respect to its directly comparable DGTA Service.[257] While to some degree this may reflect that Optus has a cost advantage over Vodafone (either due to economies of scale or scope), the magnitude of the discrepancy (particularly with the upper bound number of c-i-c cpm), is notable. That said, in the Commission's view there are a number of concerns it has with the PwC model, which relate to both the conceptual modelling approach and the inputs used (these were outlined in Chapter 5 above), which suggest that it is likely to significantly overstate the 'forward-looking efficient economic costs' of Vodafone supplying the MTAS. These concerns apply equally to the LRIC estimates.

A2.2.2 FCC estimates

Frontier notes that the FCC estimates supplied by Vodafone were based on analysis undertaken by PwC. PwC has estimated the magnitude of Vodafone's FCCs, including both *network* and *non-network* related FCCs. To estimate the network-related FCCs, the PwC analysis assumes that, in the 'long-run', Vodafone will operate c-i-c sites, and from there a proportion of sites which relate to coverage is estimated. These costs are considered as part of the FCC pool. In its report, PwC notes that network FCCs constitute approximately c-i-c per cent of Vodafone's total network costs

To estimate non-network FCCs, PwC appears to have simply used Vodafone's historical costs relating to central overhead functions; such as the finance and human resource departments. In its report, PwC notes that its analysis was undertaken in accordance with 'prevailing best practice definitions, such as those adopted in Sweden and Greece'.[258]

The Vodafone-specific FCC estimate was scaled up to industry level by multiplying the estimate by four, 'based on the presence of four major mobile networks operating in Australia'.[259] Frontier considers this approach 'conservative' due to Vodafone's advice that network FCC's are driven by geographic coverage (i.e. larger MNOs have relatively greater coverage FCCs) and because no allowance is made for Hutchison's mobile network. The FCC estimates used for Scenario 1 and Scenario 2 are shown in Table A2.4 below.

Table A2.4: FCC estimates used in Frontier model

	Scenario 1	Scenario 2
PwC estimate of Vodafone FCC	$c-i-c million[260]	$c-i-c million[261]
Percentage of total 'fully allocated' costs in PwC model	c-i-c	c-i-c
Adjusted Frontier industry-wide estimate of FCC	$c-i-c million	$c-i-c million

[257] ACCC, *Assessment of the Optus DGTA Service Undertaking – Draft Decision*, October 2005, p. 33.
[258] PwC Report, p. 13.
[259] Frontier Report, p. 14.
[260] Scenario 1 includes network FCC's of $c-i-c million and non-network FCCs (general business overheads) of $c-i-c million.
[261] Scenario 2 additionally includes $c-i-c million of 'other opex related' costs as FCCs.

As the table indicates, depending on the scenario, FCCs represent c-i-c per cent or c-i-c per cent of Vodafone's total costs. Notably, this compares with the Optus's estimate of its own FCCs of $c-i-c million, which were scaled up to industry level ($c-i-c million) based on Optus's approximate market share of the retail mobile services markets (c-i-c per cent).

Submitters' views

The consultants engaged on behalf of the CCC (Cave and Chambers) are 'generally supportive' of the criteria used by PwC to distinguish coverage-related from capacity-related sites. However, Cave and Chambers have some concerns with the PwC approach, including that many 'sectorised' sites that are not range limited are used to provide network capacity and that, therefore, their site costs should not be counted as 'coverage provision'. Further, Cave and Chambers note that many BTS (Base Transceiver Station) costs would scale with capacity, and that inclusion of these costs, beyond the minimum required to establish coverage, would lead to an overestimate of common costs.[262]

With respect to the estimation of network common costs, MJA considers that the PwC approach, where a number of coverage-related cells are defined as common, is 'not without merit'.[263] However, MJA considers that 'without more detailed analysis and reasoning behind the choice of cells it is difficult to comment in detail on the approach', although it would not expect urban or suburban cells/sites to be defined as coverage related. That said, based on international experience in the application of the TSLRIC principles, MJA considers that the network common costs could be 'set at 5% of total annual MTAS service costs', which is 'in line with the proportion of common costs in the Swedish bottom-up model and that suggested by Ofcom'.

With respect to non-network common costs, MJA notes that very limited information on these is contained in the PwC Report. That said, based on its examination of the updated UK LRIC model and the Swedish model, MJA estimates that these may be between 0 and 10 per cent of total annual costs. Overall, MJA suggests that (fixed) common costs represent between 5 per cent and 15 per cent (or 10 per cent on average) of the total network and non-network costs within an efficient forward-looking economic cost concept (such as TSLRIC) for a mobile operator. MJA observes that this estimate is less than c-i-c per cent of total network costs as suggested by Vodafone.

WIK's view

WIK makes two observations in relation to Vodafone's FCCs which are allocated according to R-B principles. First, it notes that the upper bound for FCCs used by Vodafone of $c-i-c million includes items that are not actually common costs, and that if anything, the lower figure of $c-i-c million is the relevant one to be used in the model calculations.[264] In this regard, WIK notes that it has:

---

262 Cave and Chambers, p. 7.

263 MJA, p. 64.

264 More generally, WIK argues that only 'fixed' common costs should be allocated on the basis of R-B principles, while the remaining 'variable' common costs should be allocated according to an EPMU approach

> … repeatedly raised doubts about the claimed size of fixed and common costs in the mobile sector … a large fraction of what are usually termed "fixed and common" costs are likely to vary proportionately with individual outputs …[265]

With respect to *network* common costs specifically, WIK notes that if the services are 'call traffic' and 'subscriptions':

> … the main candidate for network common costs would be parts of coverage costs. This would hold to the extent that at a site the traffic does not exceed the minimum requirements for coverage for network items that vary with traffic. Thus, in cities and suburban areas there would be hardly any coverage costs that could be counted as common.[266]

With respect to *non-network* common costs specifically, WIK separates its discussion of these into two categories: 'organisational-level' and 'other non-network' common costs. In relation to organisational-level costs such as those relating to accounting or management, WIK notes that it is possible to, in principle, determine these as common or direct (i.e. part of the increment) by varying the outputs individually and together and measuring the associated cost variations'. Unless this is done, WIK considers it 'somewhat naïve to accept certain costs, for example for accounting and management, as common'.[267] In relation to 'other non-network common costs' such as 'customer acquisition' and 'customer care' costs, WIK considers that these are 'direct costs' of mobile subscription and therefore 'not common costs at all'.

Analysys's view

Analysys considers that the approach used by PwC to estimate Vodafone's network-related FCCs is 'broadly in line' with the approach taken by PTS in Sweden as it does not directly equate the costs of providing a coverage network, but only the subset of current-network site costs that are not traffic-driven at the prevailing volume of traffic. Moreover, in Analysys's view, the proportion of network costs stated as FCCs would 'seem to be broadly commensurate with Vodafone's current subscribers and network status, and not unreasonably high'.[268]

Analysys does not provide comment on the non-network FCC estimates.

The Commission's view

The Commission has a number of concerns about the methodology adopted to estimate the FCC's in the Frontier model. These concerns would tend to suggest that the FCCs allocated in the Frontier model (as estimated by PwC) have been significantly overstated from their appropriate level, regardless of whether Scenario 1 or Scenario 2 is adopted.

In the first instance, the PwC model attributes approximately $c-i-c million in network-related asset common costs. On this issue, the Commission notes WIK's view that the main candidate for such costs relate to mobile 'coverage'. A further issue for consideration in this context, as noted by Cave and Chambers, MJA and WIK, is the determination of those coverage costs, which can genuinely be considered as 'common' based on a minimum coverage presence (MCP), and those which are likely to vary proportionately with traffic. In the UK, coverage-related common costs were determined by identifying the proportion of coverage costs that were incurred in

---

265 WIK, pp. 38-39.
266 WIK, p. 11.
267 WIK, p. 12.
268 Analysys, p. 19.

establishing a so-called MCP. These amounted to around 3 per cent of total costs.[269] Remaining coverage costs were considered to vary proportionately with traffic, and were therefore included in the 'traffic' LRIC estimate.

It is not clear to the Commission that the analysis undertaken by PwC to determine Vodafone's network common costs adequately isolates those coverage-related costs which relate to a MCP and those that vary proportionately with traffic. Moreover, in absolute terms, the resulting estimate ($c-i-c million) is almost c-i-c the 'coverage' related common costs proposed by Optus in support of its Undertaking ($c-i-c million) despite Vodafone's and Optus's GSM networks having broadly similar coverage capabilities.[270]. The PwC estimate would also appear to be significantly above the proportion of coverage related costs considered as 'network common costs' by Ofcom (then Oftel) in the UK.

The PwC analysis also attributes approximately $c-i-c million[271] in network-related *operating* expenditure and approximately $c-i-c[272] million as non-network FCCs. However, in the Commission's view, the basis for identifying these as legitimate FCCs is not explained sufficiently by Vodafone or PwC. On this issue, the Commission notes WIK's advice that an appropriate methodology for identifying legitimate non-network common costs is to measure the relevant 'cost variations' in particular cost categories in response to a change in the increment (e.g. traffic), and that in the absence of such an exercise it is unclear` that particular costs are in fact common. The Commission considers that, on the available information, it is not clear that the methodology employed by PwC to extract non-network FCCs adequately considers these issues.

Overall, the Commission notes that Vodafone's FCCs appear to represent c-i-c per cent of Vodafone's total costs under Scenario 1 and c-i-c per cent under Scenario 2. As a proportion of total costs, both estimates would appear to be significantly higher than that determined by Ofcom in the UK, and the estimate provided by Optus in support of its Undertaking.[273] In the absence of sufficient information on the methodology used by PwC to estimate Vodafone's FCCs, and in light of the benchmarks referred to above, the Commission is led to the view that Vodafone's FCCs are likely to be overstated beyond an appropriate level.

A2.3 Assessment of the R-B mark-up

As noted above, the 'welfare-maximising' prices estimated by Frontier also include a mark-up on the MTAS LRIC to reflect the recovery of FCCs according to R-B principles. As shown in Tables A3.1 and A3.2, this mark-up is between 6.40 cpm to 14.58 cpm depending on the assumptions made about the magnitude of FCCs and the own-price elasticity combinations. This chapter assesses the merits of Frontier's

---

269 For example, see Oftel document, *Different Views of Oftel and MNOs on Network Common Costs*, 27 May 2002.

270 On its website, Vodafone indicates that its GSM network covers 94.5 per cent of the population, while in its Undertaking with respect to its DGTA Service, Optus indicated that its GSM network covered 94 per of the population.

271 This cost item includes c-i-c.

272 This cost item includes non-network assets cost associated with c-i-c.

273 Those costs identified as FCCs in the model develop on Optus's behalf by CRA represented c-i-c per cent of Optus's total costs.

inclusion of an R-B mark-up in its estimated 'welfare-maximising' MTAS charges.[274]

In order to assess the R-B framework applied by Frontier to estimate its R-B mark-ups, the Commission will examine whether the:

- assumption of a 'normal-profit constraint' across the relevant markets is appropriate;
- model is based on the appropriate conceptual starting point;
- R-B framework is specified to cover all the relevant services;
- *own* and *cross*-price elasticities of demand are credible;
- assumption of imposing 'single part' linear prices is appropriate;
- R-B mark-ups satisfy a basic reality test.

Each issue is considered in turn below.

A2.3.1 Normal profit constraint

In its report, Frontier notes that its model 'solves for price and quantities to maximise the total welfare subject to a zero total profit constraint (across the three services – subscription, mobile outbound and F2M)'.[275] In support of this assumption, Frontier notes that its model indicates that total revenues were 'very close' to total costs. Moreover, Frontier notes that any gap between total costs and revenues may be driven by the conservative nature of the estimate of FCC, that the prices in the modelling may not reflect actual average prices across the market and/or that the investment cycle in that 'revenues greater than costs' may reflect a return on previous investment.[276]

Submitters' views

On behalf of the CCC, Cave and Chambers note that the optimality of R-B pricing is predicated (among other things) on there being no excess profits in the relevant markets. In this regard, the CCC notes that in the MTAS Final Report, the Commission concluded that the Australian retail mobile market is not effectively competitive, therefore violating the assumption stated previously.[277]

On behalf of Hutchison, MJA notes that no evidence has been provided to support Frontier's assumption of a normal-profit constraint.[278]

AAPT submits that if the normal-profit constraint assumption is not satisfied, the same pricing structure emerges across the services (i.e. as under an optimal R-B

---

[274] In simple terms, R-B theory is concerned with determining the most efficient way for a multi-product firm to recover common costs of production, given that it engages in linear (one-part) pricing. At its simplest, the R-B pricing rule suggests that the most efficient way to recover common costs is to price the service which has a relatively lower own-price elasticity of demand proportionately higher above its attributable or marginal cost than the service which has a relatively higher own-price elasticity of demand, such that the proportional mark-ups are inversely proportional to a service's elasticity of demand. A further explanation of R-B principles and the conditions required to ensure a socially optimal outcome is provided at **Appendix 4.**

[275] Frontier Report, p. 16.

[276] Frontier Report, p. 16.

[277] Cave and Chambers, p. 15.

[278] Marsden Jacob Associates, p. 77.

pricing configuration).[279] However, AAPT notes that the resulting prices however will be higher because prices will be configured to efficiently allocate not only the common costs of production, but also the allowed rents for each service.[280]

The Commission's view

In the Commission's view, it is not clear that the 'normal-profit constraint assumption' – upon which the Frontier model is explicitly based – is satisfied across the relevant markets in which Vodafone operates, despite Vodafone and Frontier's assertions to the contrary. In the Commission's view, Vodafone retains market power over the calls that terminate on both its mobile networks (i.e. its GSM and emerging 3G network). Despite declaration of this service, the Commission believes that the price set for this service is currently well in excess of its TSLRIC+ of production. Based on the Commission's view of the appropriate TSLRIC+ estimate, this would continue to be the case during 2005 and 2006, even if the price of the MTAS was reduced to reflect those prices in Annexure 2 of the Commission's MTAS Pricing Principles Determination.

Moreover, the Commission maintains its view, expressed in the MTAS Final Report, that there is not likely to be effective competition in the retail mobile services market. This means that, in the Commission's view, there is no certainty that profits made by Vodafone in the supply of the MTAS will be competed away in the retail mobile services market, leaving Vodafone with positive economic profits overall.

The Commission notes that if the 'normal-profit constraint' assumption is not satisfied, the *a priori* case for implementing a R-B framework is seriously weakened. That is, even if mark-ups over attributable cost are set according to their 'inverse-super-elasticities', this will not necessarily result in a socially-optimal configuration of prices. This is because, as noted by WIK, the resulting configuration of prices would be set to recover both common costs, and the level of excess profit, so that the entire pricing structure is too high. Moreover, although the same type of pricing structure might emerge as in a normal-profit framework (i.e. higher proportionate mark-ups on services with a relatively lower own-price elasticity of demand), the actual prices would not necessarily be R-B efficient from a social welfare perspective and would likely be higher. Indeed, this was the basis for the Commission's statement in the MTAS Final Report that:

> Ramsey prices can be set at any level ranging from cost recovery to full monopoly exploitation.[281]

The Commission notes Frontier's comment that its modelling shows that 'total revenues' are 'very close' to 'total costs', therefore implying some measure of normal profit in the context of its model. However, the Commission notes that the Frontier model excludes mobile data services (i.e. SMS and GPRS). This omission is

---

[279] In a reply to AAPT's submission, Frontier (November 2005, p. 5) submits that because its model is based on a normal-profit constraint, the case discussed by AAPT of R-B pricing with positive economic profits is not relevant to consideration of the Frontier model.

[280] AAPT submission, October 2005, p. 9. AAPT also notes that Frontier's incorrect reference to Ramsey's seminal paper, and mistakes and omissions in its exposition of the relevant mathematical formulas 'represent a failure by Frontier to properly understand R-B pricing'. In a reply submission (November 2005) Frontier (on behalf of Vodafone) considers that AAPT's claims are 'unfounded' and in any case 'have little or no bearing on the validity of Frontier's analysis'.

[281] MTAS Final Report, p. 170.

important in this context given that mobile data services are now a significant proportion of any MNO's 'total revenue' even though, typically, in modelling exercises, relatively few costs are allocated to these services.[282] The re-inclusion of mobile data services in the Frontier model would be likely to result in a significant excess of total revenues over total costs. This casts some doubt over Vodafone's (and implicitly, Frontier's) view that the normal profit constraint is satisfied across the relevant mobiles markets.

A2.3.2 The conceptual applicability of the model used to derive the R-B prices

The Frontier model estimates a set of 'welfare-maximising' prices for 'mobile subscription', 'mobile outgoing' and 'FTM services'.[283] Each service modelled is attributed a R-B mark-up in order to achieve the 'efficient' recovery of Vodafone's FCCs. Implicitly, the Frontier model is based on the expectation that the 'R-B efficient prices' will be set across all services to which the model relates. Also, while, the Frontier model is specified with regard to the relevant elasticity estimates, Frontier does not confirm whether these are 'market' or 'firm-specific' elasticities.

WIK's view

WIK notes that although the regulator, typically, has some control over the price set for the MTAS, it often does not control the prices for all other relevant services. Also, for profit-maximising firms, WIK observes that the relevant inverse-elasticity rule refers to each firm's residual demand elasticities, which only coincide with the market elasticities in the case of monopolies.

WIK notes that an attempt has been made to address the issue of R-B prices being set across all relevant services. For example, WIK notes that Rohlfs (2002) and Houpis and Valletti (2004) have developed 'principal-agent' models in this context. In simple terms, these 'principal-agent' models attempt to solve for a situation in which the regulator has to set MTAS prices that maximise social welfare taking account of the retail prices which will be set by MNOs, which themselves will depend on the price of the MTAS. These models are premised on a situation where the regulator can only directly influence the price of mobile termination, and leaves all other prices to be determined by the market. As WIK notes:

> The principal-agent approach to optimal MTAS pricing assumes that the regulator maximises welfare with respect to the MTAS price subject to a break-even constraint for all firms (assumed to be symmetric and subject to a market equilibrium in the unregulated mobile markets. That is, rather than setting B-R prices for their unregulated services the mobile operators are assumed to maximise their profits.[284]

These models, therefore, attempt to account for the existence of 'imperfect competition' in the markets for which the regulator does not determine price.

---

[282] Consistent with the experience of other MNOs, Vodafone's mobile data revenue was estimated to be approximately 17 per cent of Total ARPU in September 2004, having grown from just 10 per cent two years earlier. Applying this percentage to Vodafone's 'total mobile service revenue' as reported under the RAF in 2002-03 indicates that its total revenue from mobile data services during this year may have been in the order of $c-i-c million.

[283] The 'welfare-maximising' price for the MTAS is then calculated by subtracting a 'fixed retention rate' from the FTM price.

[284] WIK, pp. 18-19.

Ofcom notes that Dr Rohlfs 'reached the conclusion that the mark-up on MTAS charges should be reduced when this is taken into account', while WIK notes that Houpis and Valletti's main result is that MTAS charges should be higher the less competition there is for the other (i.e. retail mobile) services.[285] On the subject of the validity of these principal-agent models, WIK concludes that:

> Only the principal-agent approach deals with this issue. In that sense, it is the only *conceptually* correct approach to the MTAS problem discussed so far.. However, it also faces the biggest empirical problems with its implementability. These go beyond problems faced by all the other models, for example, with respect to the measurement of elasticities and additionally includes assessments of the firms' price responses and their feedback to finding the optimal MTAS charges.[286]

WIK further notes that a properly specified R-B framework would need to also include a careful analysis of the interactions between the fixed and mobile sector.[287]

The Commission's view

The Commission notes that, in assessing the Frontier model, it is required to assess Frontier's proposed 'welfare-maximising' price for the MTAS. The Commission also notes that it does not regulate the prices of other services for which the Frontier model estimates 'welfare-maximising' prices. However, the claimed 'optimality' of Frontier's proposed 'welfare-maximising' prices for the MTAS would appear to hinge on 'welfare-maximising' prices being set across all the services modelled by Frontier. However, Frontier does not appear to consider the extent to which its 'welfare-maximising' prices will be set for all services.

As noted in Appendix 4 to this report, traditional R-B pricing analysis tends to implicitly assume the existence of one monopoly producer. Under this approach, the monopolist's firm-specific demand equates with that of the market, and the monopolist is able (and has an incentive to) structure its prices across a range of services in a fashion consistent with R-B pricing principles. However, the Commission notes that, in its view, this assumption does not hold in the mobiles sector. In the Commission's view, MNOs have monopoly power over the calls that terminate on their networks, and therefore, in the provision of the MTAS. However, the Commission considers that there is a greater degree of competition in the downstream retail mobile services market, although this market is not likely to be effectively competitive. For this reason, the Commission notes that, to the extent that there is competition in the retail mobile services market, MNOs will be forced to set prices according to their carrier-specific demands, rather than according to their market demands. In this regard, the Commission considers that firm-specific demands are likely to be more elastic than market demands. Moreover, the Commission notes WIK's view that they will only coincide in the case of monopoly power over all of the relevant services.

Therefore, although Frontier calculates so-called 'welfare-maximising' prices for services in the 'retail mobile services market' it does not take into account the extent of competition in these other markets, and indeed, whether or not the 'welfare-maximising' prices are likely to be set by Vodafone for these other services.

---

[285] WIK, p. 39.
[286] WIK, pp. 21-22.
[287] WIK, p. 27.

The Commission notes WIK's view that a more conceptually correct approach for deriving R-B prices in the mobiles sector would be to use a 'principal-agent' type model. As noted above, these 'principal-agent' type models attempt to solve for a situation in which the regulator has to set MTAS prices that maximise social welfare, taking account of the retail prices which will be set by MNOs (as opposed to the regulator), which themselves will depend on the price of the MTAS. However, the Commission notes WIK's view that these models are not yet 'fully developed' and face even greater implementation challenges than traditional R-B models.

In the Commission's view, the fact that the model used by Frontier does not account for the extent to which all the 'welfare-maximising' prices will be set by Vodafone means that the Commission does not have confidence that the R-B framework proposed by Vodafone will result in a socially-optimal configuration of prices. In this regard, the Commission agrees that, were it considered appropriate to perform any form of R-B pricing, a more conceptually-appropriate approach would be the principal-agent type models discussed by its consultant, WIK. That said, the Commission also agrees with WIK's view that these models face even greater implementation challenges than the model used by Frontier. Therefore, the Commission considers that it remains uncertain as to whether a principal-agent type model could adequately be developed to generate a socially-optimal configuration of R-B prices. This is particularly so in light of the likely time and monetary costs of any effort to generate such a model.

A2.3.3 Specification of the R-B framework – services included

Frontier's model is specified to include three services. It does not include 'mobile data services' such as SMS and GPRS. Therefore, on the available information, none of Vodafone's FCCs are allocated to mobile data services in the Frontier model. In its original submission, Frontier does not explain the exclusion of mobile data services from its model, despite the fact that they were included in the PwC model prepared on Vodafone's behalf.

Submitters' views

AAPT notes that Frontier 'fails to attribute the common network costs estimated by PwC over a number of services using the network – e.g. GPRS and SMS.[288] AAPT submits that the failure to include these additional services means that the common costs are being recovered across too few services in the R-B model employed by Frontier. Further, AAPT submits that this leads to R-B prices for the MTAS which are 'artificially inflated' and 'fail to achieve a second-best efficient outcome for the industry'.[289]

Frontier's submission in reply

In reply to AAPT's submission, Frontier submits that 'ideally' mobile data services would be included in this context. However, Frontier submits that the demands for these services were (in relative terms) in their infancy, and that modelling these services was both 'difficult' due to data limitations and 'unlikely to be of significance to the results'.[290] In support of this last point, Frontier provides analysis which adjusts

---

288 AAPT submission, October 2005, p. 16.
289 AAPT submission, October 2005, p. 16.
290 Frontier, October 2005, p. 7.

the magnitude of the FCCs used in Scenario 1 and Scenario 2 (according to their incremental costs as a percentage of total incremental costs). Frontier notes that c-i-c.[291]

The Commission's view

The Commission considers that the specification of Frontier's R-B framework to exclude mobile data services is likely to, other things being equal, lead to the proposed R-B mark-up on the MTAS being overstated in every scenario put forward by Frontier. The exclusion of these services from Frontier's R-B framework, without any re-adjustment to the estimated magnitude of FCCs, means that these services, effectively, do not bear any FCCs. This is despite the fact that mobile data services would contribute to these FCCs. The Commission notes that Frontier has acknowledged, in a subsequent submission, that mobile data services should 'ideally' be included in its model, but modelling these services is 'difficult' due to 'data limitations'. The Commission also notes that Frontier has provided analysis which suggests that attributing a portion of FCCs to mobile data services would only reduce its 'welfare-maximising' estimates for the MTAS by between c-i-c and c-i-c per cent. This analysis is based on Frontier adjusting the magnitude of FCCs according to the proportion of incremental costs allocated to mobile data services.

In the Commission's view, Frontier's approach to allocating a portion of FCCs to mobile data services is, effectively, commensurate with an EPMU approach to allocating common costs. Therefore, it would appear totally inconsistent with the R-B framework designed by Frontier, where the allocation of FCCs to particular services is based on the 'inverse-elasticity' rule. While the Commission would agree with Frontier's observation that there are 'data limitations' with respect to mobile data services which may hinder their inclusion into a properly-specified R-B framework, it reiterates its view that this would appear to lend further weight to the view that there are significant empirical hurdles in implementing a R-B framework.

A2.3.4 Credibility of the elasticity estimates used in the Frontier model

In order to calculate the R-B mark-ups, Frontier determined the 'super-elasticity' of 'mobile subscription', 'mobile outgoing' and 'FTM services'. Super-elasticities comprise consideration of both the own-price elasticity of demand for each service, and any cross-price effects that operate between services.

In the first instance, Frontier presented estimates of the *own*-price elasticity of demand for 'mobile subscription', 'mobile outgoing' and 'FTM' services. Frontier accepts that there is some discussion (and debate) about the relevant parameters to use, and, for this reason, modelled three different own-price 'elasticity' cases, which are illustrated in Table A2.5 below.

Table A2.5: Three different own-price 'elasticity' cases used in Frontier model

Case	Subscription elasticity	Mobile outgoing elasticity	FTM elasticity
1	−0.3	−0.6	−0.6
2	−0.3	−0.3	−0.3
3	−0.6	−0.3	−0.3

[291] Frontier, October 2005, pp. 16-17.

In its report, Frontier notes that, where possible, it has 'sought to utilise numbers that appear to be supported' by the Commission in the MTAS Final Report, and provides discussion as to the basis for each range of −0.3 to −0.6.[292] As is shown in the table, Case 1 relates to a situation where the own-price elasticity of 'call' services is relatively *more* elastic than that for mobile subscriptions. Case 2 is a circumstance where the three own-price elasticities are equal, while in Case 3, mobile subscription is relatively more elastic.

The Frontier model calculates two *cross*-price elasticities between mobile calls and subscription, the appropriate 'feedback effect' adjustment to the base own-price elasticity of mobile calls, and assumes cross-price elasticities relating to FTM are zero. However, it would appear that cross-price effects between 'subscription price and FTM demand' and 'mobile call price and FTM demand' are incorporated in the model through 'quantity-on-quantity' (volume) elasticities.[293] From the information provided by Frontier, the implied cross-price elasticity between (FTM) calling and mobile subscriptions would appear to be between –0.12 and –0.24. Importantly, however, the Frontier model implicitly assumes that there is no cross-price effect (whether direct or built in by volume elasticities) between changes in FTM prices, and the demand for mobile subscriptions and/or demand for mobile calls.

In support of its R-B framework, Frontier submits that while the true values of own and cross-price elasticities for FTM and other mobile services will never be known with certainty, considerable effort has been made, for example in the UK, to obtain estimates of these values. Frontier also submits that a key conclusion of this work is that it is incorrect to assume that all 'super-elasticities are the same' (as an EPMU approach implicitly assumes), and that the evidence (including that cited by the UK Competition Commission) is that 'super-elasticity of FTM is 'significantly' lower in absolute terms than mobile subscription and mobile outbound services.[294] Moreover, Frontier submits that even if all *own*-price elasticities were the same, the cross-price effects mean that super-elasticity of FTM services would be lower than that for mobile calls and subscriptions.

Submitters' views

The consultants engaged on behalf of the CCC (Cave and Chambers) note that, in the UK, four consultants produced largely divergent estimates of relevant own/cross-price elasticities for different mobile services, and that such divergences present regulators with practical obstacles to implementing R-B pricing, even if this pricing approach was deemed appropriate.[295]

---

[292] Frontier notes that the Commission did not appear to endorse own-price elasticity of demand estimates for 'mobile subscription' and 'mobile outgoing'. However, it notes that the Commission used an estimate of −0.6 for FTM services.

[293] These volume elasticities capture the change in the volume of FTM and mobile outbound calls with respect to a change in the number of mobile subscriptions. Specifically, it is assumed that the elasticity of the volume of FTM calls from a change in mobile subscription was +0.4; and the elasticity of the volume of mobile outbound calls from an additional mobile subscriber was 0.9 (0.7 of this is assumed to result from the private effect – i.e. calls made by the new subscriber – while 0.2 is assumed to capture the 'externality' effect from existing subscribers making calls to that new subscriber).

[294] Frontier, *Response to ACCC Discussion Papers on the Access Undertakings lodged by Optus and Vodafone*, September 2005, p. 7.

[295] Cave and Chambers, p. 15.

AAPT questions whether the elasticity estimates proposed by Frontier are appropriate in an Australian context and (given the 'sensitivity of the outcomes for the R-B prices to the elasticity estimates') why there are divergences with those estimates proposed by Optus in support of its Undertaking.[296] Further, and in its view 'most significantly'[297], AAPT questions the appropriateness of using elasticities which have been estimated econometrically based on an assumption of constant elasticity demand curves, when the Frontier model uses linear demand curves.[298]

Hutchison submits that there are significant practical difficulties associated with estimating elasticities and that, accordingly, such estimates should be determined by reference to publicly-available data and international experience. That said, Hutchison notes that its consultant, MJA, (which provided it preferred set of own-price elasticity estimates) submits that Frontier seems to have applied a 'fairly pragmatic approach' to its estimate of elasticities, which are similar to those preferred by MJA.[299]

The Commission's view

As has been noted by Frontier, submitters and WIK, one of the key practical issues in relation to the implementation of an R-B framework is the accurate estimation of the relevant own and cross-price elasticities. Indeed, this significant information requirement appears to be one of the main reasons why R-B pricing has not been implemented or advocated by any other regulator around the world with respect to the MTAS.[300]

Own-price elasticities

In the Commission's view, due to the empirical uncertainty surrounding the appropriate elasticity to use for each service, the approach applied by Frontier of exploring the effects of using different combinations of own-price elasticity of demand estimates is an improvement over an approach that simply uses single-point estimates. However, it is unclear why Frontier failed to explore all of the own-price elasticity combinations that its framework potentially gives rise to. That is, the Frontier approach considers three different 'elasticity' cases, when the existence of three elasticity estimates for each service implies that there are eight possible combinations.[301] Notably, Frontier has not considered at least one combination that

---

296 AAPT submission, October 2005, p. 17.

297 AAPT submission, October 2005, p. 17.

298 In a reply submission to AAPT's view (November 2005), Frontier submits that AAPT does not suggest why it would be inappropriate to consider the assumptions adopted in the UK, and also that by using the 'best available information' it has minimised the possibility that the assumptions will not be inappropriate in an Australia context. Frontier also disputes that there is 'disagreement' between itself and CRA on the appropriate estimates, noting that it has used a range rather than a point estimate.

299 Marsden Jacob Associates, p. 76.

300 In its report, WIK noted that to its knowledge, 'B-R pricing principles have not been applied to the regulation of MTAS in any other country'.

301 With respect to 'subscription', 'mobile outgoing' and 'FTM' the elasticity combinations not considered in the Frontier model are [−0.6, −0.6, −0.6], [−0.6, −0.3, −0.3], [−0.6, −0.3, -0.6], [-0.3, -0.6, -0.3] and [-0.3, -.0.3 and -0.6].

would likely generate a lower R-B mark-up on the MTAS than its lower bound R-B mark up of 6.4 cpm, and can therefore be considered selective.[302]

Moreover, the Commission continues to believe that there is still significant uncertainty as to whether Frontier's proposed range for each own-price elasticity necessarily captures an accurate estimate for each parameter. It holds this view for a number of reasons. Firstly, the Commission notes that the studies cited by Frontier in developing a range of −0.3 to −0.6 for each own-price elasticity is relatively limited, and that in some cases, there is a significant degree of variability in the cited estimates. For example, for the own-price elasticity of 'mobile outgoing' services, Frontier notes that its own review for Vodafone New Zealand found that elasticities for mobile originated calls 'ranged from −0.09 to −0.80'. In addition, with respect to the own-price elasticity of 'FTM' services, Frontier refers to estimates ranging from −0.1 to as high as −0.8. This upper bound estimate was also the upper bound cited by the Commission in the MTAS Final Report. Given this variability, the Commission considers that there is no certainty that the range of −0.3 to −0.6 necessarily captures the appropriate own-price elasticity estimate.

Secondly, the Commission notes that many of the studies/estimates cited by Frontier are not based on Australian data, and that much of the 'agreement' that Frontier refers to in this context relates to a UK context. The Commission notes Frontier's views on this issue but considers that there is no certainty that 'agreement' for a particular parameter in the UK would necessarily translate into an agreement in an Australian context. This is particularly so given the apparent absence of studies which are based on Australian data.

Thirdly, most of the econometric studies referred to by Frontier appear to be based on relatively 'dated' data sets, some relating to the 1990s. While the Commission accepts that it is difficult to find studies based on more recent data, in its view, this serves to highlight an important limitation on the implementation of R-B pricing. That is, elasticity estimates are often, unavoidably, based on relatively dated historical data sets, notwithstanding the strong likelihood that the relevant elasticities are changing over time. This is likely to be particularly relevant in telecommunications markets where the emergence of SMS as a mass communications medium, continuing fixed-to-mobile substitution and convergence between different platforms is likely to have had an impact on the demand characteristics for particular telecommunications services since the studies referred to by Frontier were conducted. Therefore, in the Commission's view there is no certainty that elasticity estimates derived from a particular time period, will necessarily be appropriate for the period to which the Undertaking relates.

Finally, as noted by AAPT and WIK, Frontier has used linear demand functions in its modelling, while its elasticity estimates appear to be based on the assumption of a constant elasticity of demand. As WIK has noted, the use of linear demand curves in this context means that the own-price elasticity of demand at the solution point (i.e. the level of demand that gives rise to the 'welfare-maximising' price) will likely be different from the original own-price elasticity estimate used by Frontier. In the Commission's view, this feature of the Frontier model suggests that there is no certainty that the implied own-price elasticity of demand at the solution point (i.e.

---

[302] That is, it did not consider the use −0.3, −0.3 and −0.6 respectively for 'subscription', 'mobile outgoing' and 'FTM' in combination of 'Scenario 1'.

'welfare-maximising' prices) will necessarily fall within the range specified by Frontier for each service, let alone be the same as the original estimate. Moreover, the Commission notes WIK's view that the use of 'constant elasticity demand' curves instead would have resulted in lower R-B mark-ups on the MTAS.

Cross-price elasticities

The Commission notes that the Frontier model incorporates cross-price effects in its model. The Commission also notes Frontier's view that even if the relevant 'super-elasticities' were the same, cross-price effects would result in the super-elasticity for FTM services being relatively lower than that for mobile subscriptions and mobile outgoing calls.

However, the Commission has concerns with the scope of the cross-price effects incorporated into the Frontier model. The Frontier model appears to calculate, via the use of volume elasticities, cross-price elasticities between the price of 'mobile subscription' and 'mobile outgoing' calls, and the demand for FTM services. However, the model assumes that a change in the price of FTM services has no impact on the demand for either mobile subscriptions and/or mobile outgoing calls. In the Commission's view, this assumption is intuitively questionable, particularly with respect to the demand for mobile subscriptions. To the extent that demand for mobile subscriptions is affected by the price of FTM calls (through changes in FTM volumes), Frontier's assumption creates a bias in the relative super-elasticities, Specifically, it results in the super-elasticity for mobile subscription being too high, and the super-elasticity of FTM services being too low. This, in turn, leads to a greater than appropriate mark-up on the MTAS and an insufficient mark-up on mobile subscription.

A2.3.5 The assumption of 'single-part' prices

The Frontier model is based on determining 'welfare-maximising' prices – and therefore 'efficient' R-B mark-ups – for three services. The determination of each R-B mark-up is based on an estimate of the relevant elasticity effects between these services. Implicitly, therefore, the recovery of FCCs in the Frontier model falls on determining 'single-part' prices for these three services.

The Commission's view

The Commission considers that the elasticity estimates used by Frontier could be considered as 'highly aggregated' or 'simplified' in the sense that the services modelled are likely to include a wide variety of sub-services. In a sense, therefore, the Frontier analysis does not adequately take into account the fact that MNOs, including Vodafone, typically have relatively sophisticated non-linear and multi-part pricing strategies for different consumers.

For example, CRA uses a 'mobile outgoing own-price elasticity' of between of −0.3 and −0.6. However, in reality, it is possible that there will be differences in the own-price elasticities of mobile outgoing calls, depending on whether they are *business* or *non-business*, *on-net* or *off-net*, *peak* or *non-peak* and/or *prepaid* or *postpaid*. It is possible that one or more of these own-price elasticities fall outside Frontier's proposed range.

Further, the emergence of capped 'bucket' type mobile plans involve the regular payment of a 'fixed' monthly charge which is unrelated to usage, up to a capped amount. In this sense, these plans might be thought of as a form of 'multi-part'

pricing in that the variable cost faced by subscribers for using particular services is at or near zero, below some overall level of usage. The Commission notes that, everything else being equal, the presence of multi-part pricing would tend to reduce the size of the mark-ups necessary for the recovery of common costs. This view accords with that of WIK, which notes in relation to non-linear pricing that:

> … the mark-ups are on average smaller than without the more sophisticated pricing. Since optional pricing is a common practice in mobile markets in Australia, Ramsey mark-ups would have to be smaller accordingly.[303]

At the very least, the Commission considers that the existence and continued emergence of sophisticated non-linear pricing strategies by MNOs makes it less clear that the elasticity estimates proposed by Frontier necessarily capture the level of complexity that exists in relation to the demand for particular mobile services.

A2.3.6 EPMU v R-B approach

As an alternative to a R-B framework, Frontier submits that regulators generally adopt a simple equi-proportionate mark-up (EPMU) approach under which FCCs are allocated to services based on the direct costs of each service. Frontier submits that the 'principal argument' offered in support of the use of an EPMU approach (rather than a R-B approach) is that 'it is easy to calculate and it is difficult to obtain the information required to estimate a set of Ramsey optimal prices'.[304] An EPMU approach, therefore, implicitly assumes that all super-elasticities are the same.

In support of its R-B framework, Frontier submits that use of an EPMU approach is adopting assumptions that are clearly 'wrong in favour of adopting assumptions that are the best estimates of the values of the parameters in question'.[305] Frontier further submits that given the differences in the super-elasticities of demand for mobile services, an EPMU approach may 'generate significant welfare costs relative to an approach that takes into account demand side characteristics'. Frontier also submits that the variation in the elasticity estimates used in its model is no greater than what regulators are 'normally accustomed to'.[306]

WIK's view

WIK notes that the practical inadequacies of R-B pricing have led many regulators to adopt the EPMU approach, and that it is not aware of any other regulator around the world advocating or implementing R-B prices with respect to the MTAS. That said, WIK considers that before one can follow this approach, it has to be established that an EPMU approach is likely to be superior to imperfectly implemented R-B pricing. In order to establish this, WIK considers that an evaluation of the EPMU approach needs to be considered against the following problems associated with the implementation of R-B pricing:

- deviations of the unregulated prices from their R-B efficient levels once the price of the MTAS is set at its R-B efficient level;
- uncertainty about the size of the elasticities; and
- mis-specification of the common costs.

---

303 WIK, p. 38.
304 Frontier submission, September 2005, p. 6.
305 Frontier submission, September 2005, p. 8.
306 Frontier submission, September 2005, p. 8.

On the first issue, WIK notes that Sandbach (2004) appears to be the first one to compare the relative merits of R-B and EPMU pricing in the context of MTAS prices. That said, WIK notes that Sandbach makes some crucial assumptions, including that 'mobile industry profits tend to normal over time' and 'all mobile outputs (besides mobile termination) are produced under similar competitive conditions'. In WIK's view, these are 'questionable' assumptions which do not seem to characterise the Australian mobiles sector and, therefore, 'cast some doubt on Sandbach's results'.[307]

On the second issue, WIK agrees that EPMU can only be strictly welfare-maximising if there were equal super-elasticities across services. However, WIK also notes that that the range of elasticity estimates is so large that R-B prices based on biased estimates could be worse in terms of welfare implications than an EPMU approach. Therefore, WIK notes that:

> Provided that the elasticity range is wide and provided elasticities that are implied by EPMU do not fall significantly outside this range, EPMU can substantially facilitate the decision-making process, reduce regulatory gaming and save legal troubles without being too far off B-R pricing.[308]

Thirdly, WIK notes that it has 'repeatedly raised doubts' about the claimed size of 'fixed and common costs' in the mobile sector. In summary, these doubts lead WIK to the view that 'a large fraction of what are usually termed "fixed and common" costs are likely to vary proportionately with individual outputs so that the cost allocation problem that requires the use of B-R principles would be quite small. Under these circumstances EPMU and correct B-R principles are likely to lead to very similar results'.[309]

The Commission's view

In the Commission's view, there are several reasons why an EPMU approach is likely to be superior to the R-B framework specified and implemented by Frontier. While the issue is discussed here in the context of R-B versus EPMU, the fundamental reason for favouring an EPMU mark-up on the MTAS is that it results in a price that is more efficient than the unregulated price when considered in the light of the overall impact of reducing the MTAS price; particularly in the context of the entire pricing structure being too high.

As noted by WIK, EPMU prices are likely to be superior to R-B prices if the unregulated prices would in practice deviate substantially from their proposed R-B 'welfare-maximising' levels. The Commission considers that there is some doubt that the prices of all relevant services specified in the Frontier model would be varied to their supposed 'welfare-maximising' levels in the event of the MTAS charge being set at its 'welfare-maximising' level. Therefore, even if Frontier's pricing configuration were welfare-maximising, it is highly implausible that it would actually emerge.

However, it is similarly true that the establishment of the MTAS price at its EPMU level would not ensure that the other prices fell into line obediently with EPMU mark-ups across all services. However, it is not the pursuit of this desideratum that has led to the Commission's preference for an EPMU approach with respect to pricing the MTAS. Rather, it considers that there will be substantial efficiency gains directly

---

[307] WIK, p. 39.
[308] WIK, p. 38.
[309] WIK, p. 40.

from reducing the MTAS towards its TSLRIC+, and that a MNO like Vodafone has neither the need nor the ability to increase retail prices in a particularly damaging manner. Indeed, to the extent that retail prices are currently 'too low', increases that occur will also improve economic efficiency. That is, the Commission believes that the same reason for why reducing the MTAS charge produces a large efficiency gain leads it to believe that holding it at the levels recommended in the Frontier model (i.e. between 22.32 cpm and 32.73 cpm) will result in a large efficiency loss compared with the lower EPMU level.

Conceptually, as a price is increased above its attributable cost towards its R-B level, it will initially result in efficiency gains (conditional on the cost-recovery imperative). However, once the R-B level is reached, further increments will result in efficiency losses, and these efficiency losses will tend to increase at an increasing rate as the price is increased. A point will be reached where the efficiency losses from the excessive price completely cancel out the gains from moving to the R-B price, and then it is 'downhill' at an accelerating rate from there. The potential damage is greater the greater is the super-elasticity of demand.

In considering the implications of holding the MTAS charge at such a high level, the Commission considers that there remains significant uncertainty as to the credibility of the own and (implied) cross-price elasticity parameters used in the Frontier model (see section A3.3.4), and that this should dictate a far more cautious approach than that prescribed by Frontier. Once these factors are taken into consideration, it is no longer certain that the super-elasticity of FTM calls must be so low as to ensure that that appropriate price for the service must, in an appropriately specified R-B framework, be higher than one calculated according to EPMU principles.

The Commission also notes WIK's view that if FCCs were specified correctly, the use of a R-B approach is likely to generate similar results to the use of an EPMU approach. On this issue, the Commission notes that Analysys and WIK appear to have drawn the conclusion that the FCCs identified in the Frontier model are, at best, at the high end of a reasonable range of estimates, or at worst, are likely substantially to overstate the FCCs incurred by an Australian MNO. To the extent that these views are correct, there is a strong possibility that the Frontier model is likely to lead to a greater than appropriate pool of FCCs which are allocated according to R-B principles. In turn, this would lead to substantially greater (and inappropriate) mark-ups above TSLRIC for the MTAS.

With respect to Sandbach's results in relation to the relative merits of EPMU versus R-B in the 'Partial Ramsey' context, the Commission notes that this analysis is based on at least one assumption which, in its view, is unlikely to hold in Australia. This is the assumption that mobile industry profits will tend to normal over time. As noted previously and prospectively in this report, the Commission considers that the assumption of a normal-profit constraint is unlikely to be appropriate across the markets in which Vodafone operates.

For all these conceptual and empirical reasons, the Commission agrees with Oftel that:

> Analyses that suggest large mark-ups on termination charges should be treated with great caution. In Oftel's view it would be unsafe to have a large mark-up because there would be

excessive weight placed upon evidence and analysis that is insufficiently robust to support such a conclusion.[310]

Finally, the Commission notes that no regulator around the world has seemingly advocated or implemented the use of R-B principles in relation to the MTAS. Rather, telecommunications regulators such as those in the UK, Sweden and Malaysia have all advocated the use of the EPMU approach.

A2.3.7 Conclusion on Frontier's R-B framework

The Commission notes that, in principle, the efficiency properties of R-B pricing for the recovery of common costs are convincing, and have been well recognised in the literature and by other regulators of the MTAS. However, the issue for consideration in this context is whether Frontier's R-B framework satisfies the necessary conditions to ensure that it will result in a socially-optimal configuration of prices.

In the Commission's view, Frontier's proposed R-B framework does not fully satisfy any of the necessary conditions which are required for R-B pricing to generate a socially-optimal configuration of prices. In this regard, the Commission is of the view that the approach adopted by Frontier:

- is based on the assumption of Vodafone making normal profits over the relevant markets, notwithstanding the fact that it is not clear that this assumption is appropriate. To the extent that Vodafone enjoys above-normal profit across the relevant markets, it is likely that the entire pricing structure proposed by Frontier is too high, and more specifically, will still be skewed in the direction of an excessive termination charge as compared with an optimal R-B configuration;
- does not take into account the extent to which its 'welfare maximising' prices will emerge for all the services included in the model;
- does not encompass all of the relevant services which would likely give rise to Vodafone's FCCs in that it has excluded 'mobile data services' from the framework. This suggests that, other things being equal, the R-B mark-up on the MTAS will be inflated above the efficient level;
- recognises that there is some uncertainty about the necessary elasticity estimates and attempts to factor this in with the use of three different elasticity cases. However, Frontier does not consider all of the implied cases in this regard, and notably, leaves one out which is likely to imply the lowest R-B mark-up on the MTAS. Moreover, the Commission considers that there remains some uncertainty over the proposed ranges used by Frontier for each parameter;
- assumes that Vodafone will impose single-part linear prices for the relevant mobile services. However, in reality the specified services in the Frontier model, and the associated elasticity estimates for each service are unlikely to capture the myriad of sub-services offered by MNOs to different consumer groups. It is not clear that the elasticity estimates proposed by Frontier adequately capture this effect;

---

[310] See Oftel, *Ramsey Pricing – Oftel's Response to a Letter of July 4*, 12 July 2002, p. 9.

- does not take into account the possibility of cross-price effects between price changes in the FTM market and the demand for mobile subscriptions. In the Commission's view, this represents an asymmetry in the Frontier model given that Frontier effectively assumes a cross-price effect between a change in the price of mobile subscriptions and the demand for FTM services; and
- is not likely to be superior to an EPMU approach due to the uncertainty surrounding the specification of, and the inputs used in, Frontier's model.

For all of these reasons, the Commission is not convinced that the R-B framework proposed by Frontier is appropriate.

A2.4 Assessment of the network externality surcharge (NES)

Frontier's 'welfare-maximising' charges for the MTAS also include a mark-up – ranging from 4.23 cpm to 8.29 cpm – on LRIC for a NES.[311] Frontier submits that, in the case of mobile telecommunications, 'network externalities mean that one person's decision to purchase a service (e.g. mobile subscription) may affect another person's welfare, hence price signals may need to be adjusted if private decision making is to lead to the maximisation of social welfare'.[312] Frontier also notes that there has been substantial empirical work in the UK specifically addressing the issue of the 'welfare-maximising' MTAS prices, and that with respect to the NES the debate was not one of whether or not network externalities are relevant, 'but how they are characterised and best incorporated into the models'.[313]

To incorporate network externality effects, Frontier used volume elasticities which were discussed above and are based on parameters used by Frontier in the UK. Frontier also applied a Rohlfs-Griffin (R-G) factor of 1.5 to calculate its NES mark-ups. The R-G factor represents 'the ratio of marginal social benefit to marginal private benefit of an additional subscriber on a mobile network'.[314] In a subsequent submission, Frontier reveals that another important parameter used in its model to determine the NES mark-ups is the so-called 'm' factor. This refers to the 'ratio of the usage of the marginal subscriber to that of the average subscriber'. In an Australian context, this term was originally coined by CRA in its model to determine the 'welfare maximising' price for the MTAS. CRA's base case model used an 'm' factor of c-i-c. The analogous parameter used in the Frontier model is 0.7 – which is the percentage change in the volume of mobile originated calls from a one per cent change in the subscriber numbers that is a private consumption effect (i.e. calls made by the new marginal subscribers).[315]

---

311 Further discussion of relevant external effects in relation to telecommunications networks is at **Appendix 5** to this report.

312 Frontier Report, p. 5.

313 Frontier Report, p. 8.

314 Frontier submits (original submission, p. 13) that the R-G factor should be 'determined empirically based on the relevant volume elasticities'. However, it notes that given it does not have any direct measurements of the relevant volume elasticities in Australia, and therefore believes it appropriate to constrain the values of the volume elasticities to ensure an acceptable value for the R-G factor. Frontier also notes that using an R-G factor of 1.5 in this context, accords with a FTM volume elasticity of 0.11 and a mobile outgoing volume elasticity of 0.055. In effect, this means that both these volume elasticities are adjusted downwards from their original estimates of 0.4 and 0.2 respectively. For this reason, Frontier considers this a 'conservative' assumption.

315 Frontier submission, September 2005, p. 46.

In assessing Frontier's NES mark-ups, the Commission will consider whether:

- network externalities are likely to exist in relation to the Australian retail mobile services market;
- Frontier considers all of the possible external effects that relate to both mobile and fixed-line subscription;
- or, to what extent, the subsidy raised from an NES can be effectively targeted; and
- the methodology used to estimate the NES mark-ups is appropriate.

Each issue is considered in turn below.

A2.4.1 Relevance of network externalities in the Australia mobile market

Submitters' views

AAPT submits that there is 'general consensus amongst economists that in both the fixed-line and mobile market, once higher levels of penetration are reached, the significance of network externalities will diminish'.[316] AAPT observes that a recent study by IDC notes that the mobile market surpassed 'natural saturation'[317] for the first time in 2004 when there were approximately 17.87 million mobile phone services in operation in Australia, which is equivalent to 89 per cent of the population.[318] Therefore, AAPT submits that the network externality associated with mobile subscription is not relevant to the Australian mobile market, and that any external effects may already be internalised without any need for corrective pricing.[319] AAPT also submits that handset subsidies appear to be being used as a competitive instrument to prevent 'customer churn' and therefore may actually be generating inefficiencies.[320]

Hutchison submits that it would be 'inappropriate' to supplement the efficient cost of providing the MTAS with an NES to reflect the existence of network externalities. In this regard, Hutchison notes the view of its consultant, MJA, that for there to be any benefit from an NES, it is necessary that there be a 'significant' 'waterbed effect' in driving down retail mobile charges. Otherwise, MJA notes that the NES will only result in greater profits for MNOs and not lower subscription/mobile call charges.[321] MJA goes on to note that, given the Commission's view in the MTAS Final Report that competition in the retail mobile services market is not effective, this outcome cannot be assumed. Moreover, MJA considers that 'when penetration increases, the

---

316 AAPT submission, October 2005, p. 22.
317 AAPT submission, October 2005, p. 24.
318 In a reply submission to AAPT's submission, Frontier submits that it agrees that if the Australian mobiles market had reached saturation, there would be no external benefits associated with new subscriptions. However, in Frontier's view, this market has not yet reached saturation. In this regard, Frontier notes that in the MTAS Final Report, the Commission quoted penetration rates of between 71.9 and 73.0 per cent of the population at 30 June 2003, and that this is similar to the implied penetration rate of 74 per cent in Frontier's own modelling.
319 AAPT submission, October 2005, p. 24.
320 AAPT submission, October 2005, p. 24.
321 Marsden Jacob Associates, p. 78.

number of potential new subscribers is increasingly limited, eroding the benefit of including an NES over time'.[322]

The consultants engaged on behalf of the CCC (Professor Cave and Charles Chambers) submit that network externalities are clearly relevant in telecommunications. However, they note that consumers tend to call and be called by only a subset of network subscribers. Cave and Chambers reason that, given the current high levels of mobile telephony in Australia, it is 'unlikely that the addition of a marginal mobile subscriber would alter the calling behaviour of most subscribers to fixed networks', and that the NES is probably 'very small' if it exists at all.[323]

The Commission's view

The Commission is of the view that the concept of a 'network external effect' in relation to mobile subscription has intuitive validity. That is, the Commission considers that there may be circumstances where a potential mobile subscriber's marginal private valuation (MPV) means that s/he would not purchase a mobile subscription, even though it would be socially efficient to come on to the network (i.e. Marginal Social Valuation (MSV) > MPV).

The Commission believes, however, that the empirical importance of this network external effect is likely to be relatively less in highly-mature mobile markets such as Australia. As noted by Frontier, in the MTAS Final Report, the Commission cited evidence that the penetration rate for mobiles was likely to be between 71.9 per cent and 73 per cent at 30 June 2003. The Commission also cited evidence that the penetration rates grew to 77.9 per cent at 30 June 2004. However, since the release of the MTAS Final Report, more recent evidence from IDC suggests that mobile penetration levels were at 89 per cent in Australia at the end of 2004-05.[324] In the Commission's view, although the addition of the remaining 11 per cent of the population as mobile subscribers may bring external benefits to existing subscribers, it is likely that these marginal subscribers will make (and receive) less calls on average than existing subscribers.[325] Given that consumer value would appear to be primarily derived from making and receiving calls, the marginal social benefits resulting from the addition of each new subscriber are likely to be declining. Moreover, if the marginal social cost of raising the subsidy from a NES on the MTAS remains constant (or is even increasing), the case for continuing to subsidise mobile subscription is weakened.

In addition, the Commission considers that network external effects can be, and likely are, internalised, to some extent, both by existing subscribers and MNOs.

In the case of existing subscribers, the Commission is of the view that there are likely to be a number of situations where parties known to the marginal subscriber will contribute in some way to the subscription decision. For example, a family member may assist a child to purchase a mobile subscription where they expect to derive a benefit from being able to call (or have the option to call) their child in the case of an emergency. Similarly, a business may subsidise an employee's mobile subscription

---

322 Marsden Jacob Associates, p. 78.

323 Cave and Chambers, p. 20.

324 In other words, 89 per cent of people in Australia had a mobile phone.

325 The Commission notes that the analysis conducted by CRA for Optus (with respect to Optus's DGTA Service Undertaking) recognises this by making the assumption that marginal subscribers make (and receive) only one-third of the average number of calls made by existing subscribers.

on the expectation that it will derive some benefit from other employees having the ability or option to call that employee, at any time, should an important issue arise.

The Commission also notes that MNOs are likely to internalise some network effects through the implementation of sophisticated non-linear or multi-part pricing strategies. For example, the Commission notes that Vodafone currently offers a wide variety of *prepaid* and *postpaid* mobile plans for potential (and existing) mobile subscribers. These are based on a myriad of pricing structures, such as the emergence of capped (or 'bucket' plans) which contain a variety of call/data rates, the opportunity for 'free' on-net talk time. In short, there would appear to be a mobile plan to suit most types of (if not all) users. Moreover, the emergence (and increasing popularity) of prepaid plans targeted at 'low-use' subscribers (i.e. low entry fees, high call rates) demonstrates quite clearly that MNOs have strategies in place to attract users who may not opt to purchase a mobile subscription if they were forced to sign a postpaid contract.

A2.4.2 External effects considered in the Frontier model

Submitters' views

On behalf of the CCC, Cave and Chambers submit that by focusing on the mobile sector alone, Frontier's case for an NES fails to take account of other consequences of higher MTAS charges. This includes that imposing a NES on the MTAS reduces consumer surplus available to fixed subscribers from making calls, and hence the value of a fixed subscription. For this reason, they consider the Frontier approach 'partial' and 'inadequate'.[326]

Based on the report prepared by its consultant, MJA, Hutchison submits that no allowance is currently made for network externalities in the Commission's TSLRIC modelling of the fixed-network business, even though the principle of applying a surcharge applies equally to both fixed and mobile businesses. MJA has also noted that there may be offsetting externalities to the one identified in the Frontier model, such as the 'call externality', and considers that 'full internalisation' of these effects is 'unlikely'.[327]

AAPT also notes the potential existence of 'call externalities' and 'fixed-line network externalities' which are not considered in the Frontier model. With respect to 'call externalities', AAPT submits that in the extreme case, the dominance of this effect could mean that a surcharge is required on mobile subscription to cross-subsidise FTM services.[328] With respect to fixed-line network externalities, AAPT submits that it is probably the case that the level of fixed penetration is such that that this effect is not relevant. However, AAPT submits that increasing fixed-to-mobile substitution by customers may eventually reach a point where the fixed-line network externality may need to be taken into account again. AAPT notes that, as a consequence, the efficient outcome may eventually require MNOs to subsidise fixed- line operators, rather than the other way around.[329] Moreover, AAPT notes the possibility of there being 'congestion' or negative externalities associated with high levels of network usage.

---

326 Cave and Chambers, p. 17.
327 Marsden Jacob Associates, p. 95.
328 AAPT submission, October 2005, p. 33.
329 AAPT submission, October 2005, p. 35.

The Commission's view

The Commission considers that the Frontier analysis should be considered partial because it does not quantify, or even seek to consider, other types of externalities which imply offsetting consequences for the 'welfare-maximising' MTAS price. In this regard, the Commission considers that Frontier appears to simply ignore the existence and/or possible impact of other external effects which may present a *prima facie* case for subsidising rather than taxing MTAS prices.

For example, Frontier appears to implicitly assume that 'call externalities' are completely internalised. The Commission agrees with the view that many bilateral calling relationships will, over time, internalise the benefits accruing to both calling parties from the consumption of a joint telephone call. For example, under a calling party pays (CPP) billing system, regular bilateral calling relationships might establish a 'take it in turns to call' understanding, which would likely internalise any external benefits accruing to either consumer.

However, the Commission notes that some other calling patterns are not 'regular' and may only ever be one way. In the situation where a subscriber receives a call from a non-regular (or one-off) source, they conceivably derive some benefit from that call, even though they have no intention of calling that party back. In circumstances where this type of call is still made, this could be characterised as an 'external benefit' accruing to mobile subscribers from incoming calls, and to the extent that it is not internalised, a 'call externality'.[330] In circumstances where this type of call is not made, even though it would be socially optimal for it to have been made, this might be thought of as a 'negative externality' effect.

On this issue, WIK, has stated its view that call externalities are not efficiently internalised,[331] and submitters to this inquiry have raised this issue as a valid consideration for a model attempting to derive 'welfare-maximising' MTAS prices. To the extent that 'call externalities' are not internalised, this would present a *prima facie* case for subsidising rather than imposing a surcharge on the MTAS. Further, the existence of 'call externalities' suggests that a cross-subsidy arrangement which imposed a surcharge on mobile termination could actually reduce the absolute quantity of mobile subscriptions, rather than increase them as postulated by the Frontier model.

Frontier also implicitly assumes that a 'fixed-line network externality' is not relevant in calculating its 'welfare-maximising' MTAS prices. As submitters have noted, network externalities work both ways in that, in principle, they should be relevant for both mobile and fixed-line subscriptions. The Commission also notes the view that consideration of this effect could become increasingly important in an environment of increasing fixed-to-mobile substitution.

---

330 A possible caveat to this effect translating to a 'call externality' is if subscribers base both their initial and ongoing (in the case of postpaid plans) subscription decision on the MPV of not only the calls they make, but also those which they expect to receive. To a certain extent, this factor could obviate the importance of the call externality in this circumstance because even if a mobile subscriber receives calls (to which some positive value is attributed) which they have no intention of returning, the benefit received is to some degree captured in the subscription decision. That said, the existence of call externalities in this circumstance could still lead to inefficient levels of calling.

331 WIK, p. 42.

Overall, in the Commission's view, any framework that attempts to calculate a 'welfare-maximising' price for the MTAS should at least consider the existence and importance of all other possible externality effects across the relevant markets, which include the markets within which fixed-line and mobile services are supplied. On this basis, the Commission considers that the Frontier analysis is partial to the extent that it does not consider the full array of effects and counter effects that are likely to permeate the fixed-line and mobile markets.

To observe the partial nature of the Frontier analysis, consider first that the demand for mobile subscriptions will depend on a number of factors, including (among other things) the:

- price of mobile subscription (movement along the demand curve as own-price changes);
- number of mobile subscribers on the mobile network (shifts the demand curve in the same direction as the quantity of mobile subscribers changes);
- number of fixed subscribers on the fixed network (shifts the demand curve in the same direction as the quantity of fixed subscribers changes); and
- price of FTM calls (shifts the demand curve in the opposite direction to the price change).

The intuition underlying the last two elements is that mobile subscribers will place some positive value on both being able to call fixed-line subscribers, and receiving calls from fixed-line subscribers.

Moreover, consider that the demand for fixed-subscription will also depend on a number of factors, including (among other things):

- the price of fixed-subscription (movement along the demand curve)
- the price of fixed-line services, including the price of FTM calls (shift the demand curve in the opposite direction to the price movement);
- the number of fixed subscribers (shifts the demand curve in the same direction as the quantity changes);
- the number of mobile subscribers (shifts the demand curve in the same direction as the quantity changes); and
- the price of mobile-to-fixed (MTF) calls (shifts the demand curve in the opposite direction as the quantity changes).

Within this framework, now consider a situation (as proposed by Frontier) where termination rates are set 'above-cost' via a NES. In the Commission's view, the imposition of a NES on the MTAS could potentially have a number of offsetting effects in both the fixed-line and mobile markets.

For example, on the one hand, the NES is likely to increase the demand for mobile subscriptions if the price of mobile subscription falls (i.e. as a result of the cross-subsidy). However, the NES may also have the effect of reducing the number of FTM calls made by fixed-line subscribers due to above-cost termination rates feeding through to higher FTM prices. If mobile subscribers attribute some positive value to incoming FTM calls, it could reasonably be expected that, other things equal, a reduction in the amount of FTM calls would reduce the demand for mobile subscriptions. Moreover, increased FTM call prices could also reduce the demand for

fixed-line subscriptions, particularly in an environment of increasing fixed-to-mobile substitution.[332] Further still, this effect would likely be offset to some extent (or perhaps completely) if there is an increased number of mobile subscribers for a fixed-line subscriber to call.

The key point to note here is that there are likely to be a myriad of complex effects and counter-effects between the fixed and mobile markets, and that these will likely change over time, particularly in an environment of increasing fixed-to-mobile substitution. Moreover, the Commission considers that there are three important points to draw from the stylised analysis above in assessing the approach adopted by Frontier.

First, to the extent that above-cost MTAS prices lead to increased FTM prices, this will, other things equal, likely reduce the number of incoming FTM calls received by mobile subscribers. If mobile subscribers attribute some positive value to these calls, this effect in isolation suggests that the price of termination should actually be set lower or even *below-cost* in order to encourage calls from the fixed-line network to the mobile network. The Commission notes that not only does Frontier ignore this potential effect, it does not provide convincing reasons for its absence.

Second, and as noted by both AAPT and WIK, increasing fixed-to-mobile substitution suggests that, going forward, some consumers will give up their fixed-line subscription in favour of a 'mobile only' option. This process may be inefficiently hastened by above-cost FTM prices. This has led WIK to conclude that:

> We believe that the increasing trend for substitution in favour of mobile networks, network externalities should be more of a policy concern for the fixed-network than for mobile networks … The current trend of substitution gives less rationale for regulators to tax fixed network users (via higher termination rates) in favour of increasing mobile penetration levels which are already at saturation.[333]

Thirdly, and following on from WIK's view, a proposed NES on the MTAS should take into account how such a pricing structure is likely to impact on the interrelated fixed-line and mobile markets, rather that just focusing on the impact on mobile subscriptions and mobile outgoing calls. The Commission notes that although these platforms are not perfectly substitutable, there is any-to-any connectivity between them which suggests that a NES levied on the MTAS could potentially have a number of varying and offsetting effects on the use and substitution of fixed and mobile communications mediums. In the Commission's view, the fact that the Frontier only considers one of the possible effects in relation to the mobiles sector significantly weakens the validity of its proposed 'welfare-maximising' prices.

---

[332] On the issue of fixed to mobile substitution, WIK, has noted that (p. 49) '... we can observe a gradually increasing trend to substitute fixed access lines by mobile subscriptions. The number of telephone users which give up their fixed-line subscription and become mobile-only users is increasing. Although there seems to be indications that fixed-mobile substitution has reached a lower level than in Europe and in Asia, it is also an increasing reality in Australia. While mobile only homes are as high as 33 % in Finland and Portugal with a 15 % average across Europe, the corresponding number for Australia is estimated to 6%. The currently relative lower level of fixed-mobile-substitution gives reason to assume that this process will accelerate in the next few years in Australia.'

[333] WIK, pp. 48-49.

A2.4.3 To what extent can a subsidy be effectively targeted?

Submitters' views

On Hutchison's behalf, MJA submits that some subscribers are likely to join a mobile network without an additional subsidy or at purely cost rates (the infra-marginal subscriber). MJA considers that, for these customers, no additional benefits will accrue to society, and the NES on the MTAS will only act as a demand-distorting mechanism.[334] On a related point, MJA notes that if a subsidy derived from the NES can be targeted, this suggests that the overall subsidy required will be lower since subsidies can be targeted more towards those who need them. MJA notes that the ability to 'target' in this context was considered in depth by Ofcom, and it concluded that the extent of price discrimination in retail tariffs in the UK provides evidence of some ability to target. MJA submits that it sees no reason that this ability is any different in Australia, though to the extent that targeting is more difficult such that subsidies are inefficient, the NES should be reduced.[335]

Also, MJA notes the possible use of other methodologies. For example, in the UK the UK Competition Commission (UKCC) capped the NES at the level that corresponds to the amount of subsidy which targeted marginal customers for whom a subsidy would mean the difference between joining and not joining a mobile network. MJA notes that another approach would be to examine data on the amount of subsidy that MNOs currently offer to attract new subscribers, and maintain loyalty among their existing customer base.[336]

WIK's view

WIK submits that positive welfare effects of network externalities are only related to 'marginal' subscribers, and that there are 'no positive welfare effects associated with subsidies provided to infra-marginal subscribers'. Moreover, WIK submits that subsidies to inframarginal subscribers are not welfare-neutral 'as often assumed'. Instead, WIK argues that they have a negative impact on welfare due to the need to finance the subsidy and the welfare distortions associated with pricing the MTAS above-cost.[337]

WIK also notes empirical research undertaken by Rohlfs if 'no targeting' is assumed versus if 'perfect targeting' is assumed, which suggests that the optimal subsidy in the latter scenario would be around 'one-tenth' of a case where MNOs are assumed to have no ability to target.[338] WIK argues that although both scenarios should be considered 'unrealistic assumptions', it should be assumed that MNOs have an ability to target marginal subscribers.[339]

The Commission's view

The Commission considers that even if a subsidy to mobile subscriptions was warranted, there is no certainty that an NES on the MTAS will necessarily lead to a socially-optimal outcome. One reason for this is that the MNOs may have neither the ability nor incentive to target a subsidy on 'marginal' as opposed to inframarginal

---

334 Marsden Jacob Associates, p. 78.
335 Marsden Jacob Associates, p. 84.
336 Marsden Jacob Associates, p. 85.
337 WIK, p. 46.
338 WIK, p. 46
339 WIK, p. 47.

subscribers. In this context, the latter group is defined as subscribers who would retain their mobile subscription regardless of the subsidy.

The Commission considers that Vodafone, like other MNOs in the Australian market, is likely to have some ability to target subsidies to marginal mobile subscribers, through sophisticated non-linear pricing strategies. That said, the Commission agrees with WIK that this ability is not likely to be perfect. In other words, to some extent, a subsidy on mobile subscriptions is likely to be taken up by some inframarginal subscribers or subscribers that would have remained irrespective of the subsidy. In this regard, the Commission notes that, in relation to the Australian mobile market in 2004-05, at least 70 per cent of new handsets involved replacement rather than equipping a completely new subscriber.[340]

The Commission agrees with WIK that the issue of whether MNOs have an ability (and perhaps more importantly the incentive) to target marginal subscribers is an important issue to consider when determining the 'optimal' size of a required subsidy, and more broadly, whether a NES should be imposed at all.

In relation to the optimal size of the subsidy, the Commission notes Rohlfs's analysis from the UK that there if 'perfect targeting' as opposed to 'no targeting' is assumed, the optimal subsidy will be substantially lower. The Frontier model appears to be based on the assumption that Vodafone cannot at all target the subsidy to 'marginal' mobile subscribers. Given the Commission's belief that Vodafone, and other MNOs, are likely to have some ability to target 'marginal' subscribers, this suggests that Frontier's NES mark-ups have been overstated beyond an appropriate level. This is discussed further in section A3.4.4 below within which the calculation of the NES by Frontier is considered.

In relation to whether a NES should be imposed at all, the Commission notes that actual imposition of the NES generates an efficiency cost via the need to distort the price of the MTAS above its underlying cost. In the Commission's view, it is increasingly harder to justify a mobile subscription subsidy as being 'welfare-maximising' in a circumstance where an MNO has a poor ability to target that subsidy to marginal subscribers. This is because the inability to target the subsidy to marginal subscribers means that the subsidy raised – via above-cost MTAS prices – will need to be relatively larger.[341] Given that the efficiency costs of raising the subsidy from above-cost MTAS prices increases at an increasing rate, this implies that the overall efficiency cost could be significantly greater than in a circumstance where the subsidy could be targeted effectively.

Moreover, the Commission considers that because at least some of the subsidy is likely to be directed towards churn-related subsidies involving the premature replacement of handsets that are only part way through their economic lives, this is a further efficiency cost that would need to be accounted for in any framework that attempts to calculate an 'optimal' NES. In this context, it is important to note that the

---

[340] This is based on data from the Australian Mobile Telecommunications Association (AMTA) which reported handset sales of 8.02 million in 2004-05. This compares with Optus's estimate of only 2.41 million net new subscriptions during this period (SingTel, *Management Discussion and Analysis of Results of Operations for the Year Ended 31 March 2005*, p. 43).

[341] In this regard, the Commission notes that Rohlfs analysis, conducted for the Ofcom, showed that if 'perfect targeting' of the mobile subscription subsidy was assumed, the optimal NES would decline significantly (i.e. in the order of 90 per cent).

Commission is not suggesting here that handset subsidies should be banned. Rather, it believes that any case for taxing the MTAS to provide funding for mobile subscription subsidies is severely weakened where those subsidies are poorly targeted such that some of the subsidy accrues to inframarginal subscribers.

A2.4.4 Has the NES been calculated appropriately?

Submitters' views

The consultants engaged on behalf of the CCC (Cave and Chambers) submit that the data necessary to estimate the NES – notably the R-G factor – are extremely elusive, and that common practice appears to be to recycle another regulator's guess, rather than utilise a number which is estimated empirically.[342]

Hutchison submits that the inclusion and size of NES mark-ups on the MTAS LRIC are 'highly contentious' issues, and that only two jurisdictions (UK and Israel) have taken externalities into account. Notwithstanding its view that the NES is inappropriate in this context, Hutchison submits that a mark-up of no more than 0.6 cpm is appropriate, in accordance with the views of its consultant, MJA. In this regard, MJA's analysis of the magnitude of the NES mark-up was based on the approach taken by the UKCC. Based on a replication of the network externality calculation by the UKCC (an alternate measurement approach to the use of the Rohlfs model), MJA calculates an NES of either 0.16 cpm or 0.62 cpm, depending on how effectively MNOs can target the subscription subsidy to ensure it is only available to marginal users.

AAPT submits that, while the R-G factor can be used to approximate the impact of network externalities, it should not be considered a definitive method for capturing network externalities. Further, AAPT considers that there is a degree of 'arbitrariness' in choosing the appropriate value for the R-G factor, which appears to be acknowledged by Rohlfs himself.[343] Moreover, even if it were appropriate to capture network externalities using the R-G factor, AAPT considers that it may be more appropriate to use an R-G factor that varies over subscription, rather than the constant value (1.5) used by Frontier. AAPT also notes that the use of an incorrect value could lead to a greater inefficiency than would arise if the network externality were ignored.[344]

WIK's views

WIK notes that the NES mark-ups calculated by Frontier (4.23 cpm and 8.29 cpm) are 'very significant' and amount to 37 and 84 per cent respectively of the relevant TSLRIC. This compared to a 10 per cent mark-up for the NES as applied by Ofcom in the UK. In its report, WIK has also provided the results of it running a 'corrected' version of the Frontier model under Scenario 1.[345] Based on its 'corrected' model, WIK estimates that the NES is in the order of 0.3 cpm rather than the 4.4 cpm proposed by Frontier.

---

342 Cave and Chambers, p. 21.

343 AAPT submission, October 2005, pp. 29-30.

344 AAPT submission, October 2005, p. 42.

345 This adjusts for constant elasticity functions instead of linear demand functions, the magnitude of FCC's is reduced by 50 per cent, adjustments to the relevant elasticity estimates to 'accord with the evidence'; and separation of the mobile market in a mass market segment and a business segment.

The Commission's view

The Commission has a number of concerns with the methodology employed by Frontier to calculate its proposed range of NES mark-ups. Firstly, the Commission notes that the reasoning used by Rohlfs to originally determine a range of 1 to 2 for the R-G factor has some intuitive merit. That said, the Commission notes that the ultimate selection of a R-G factor of 1.5 by Frontier has no clear empirical basis. While the Commission agrees with Rohlfs's original *a priori* reasoning that the R-G factor should not be above 2,[346] it considers that it is extremely difficult to determine the exact value of this parameter, and that Frontier appears to have simply used the estimate from the UK modelling exercise.

Secondly, on the available information, the Commission understands that the Frontier model is based on the implicit assumption that MNOs cannot, to any extent, target mobile subscription subsidies (i.e. distinguish between marginal and inframarginal subscribers). This issue was discussed above in section A3.4.3. In the Commission's view, this assumption is unlikely to be realistic. Rather, the Commission considers that MNOs are likely to have an ability to target marginal subscribers though sophisticated non-linear pricing plans. In this regard, the Commission is of the view that taking into account 'some' ability to target a subsidy, would reduce the required subsidy that is to be funded from the MTAS. Indeed, on this issue, WIK cited evidence from the UK and concluded that:

> If targeting of subsidies to marginal subscribers occurs the appropriate subsidy is significantly lower compared to a scenario where targeting is not possible or exercised.[347]

Third, as noted previously, Frontier's calculation of the subsidy does not take into account the impact of any other potential externalities – such as call or fixed-line subscription externalities – which would tend to reduce the NES mark-up on the MTAS. Moreover, in the Commission's view, Frontier has not properly justified its reasons for ignoring these possible impacts in calculating its NES estimates.

Finally, the methodology employed by Frontier to estimate the NES mark-ups would appear highly sensitive to particular model inputs and certain assumptions. In particular, Frontier's assumption of an 'm' factor of 0.7 appears to be, in its words, a 'significant driver' of the efficient MTAS price. However, in the Commission's view, Frontier's assumption is likely to overstate the usage that should be attributed to 'marginal' mobile subscribers, particularly in a high penetration market such as Australia. Further, the Commission notes that this assumption would appear to be considerably less realistic than CRA's assumption (despite differences in actual specification or description) that marginal mobile subscribers are likely to make and receive c-i-c of the 'average' number of calls in this regard. In a subsequent submission, which seeks to provide reconciliation between its model and that of CRA, Frontier appears to concede that CRA's assumption is c-i-c.[348] Moreover, Frontier's subsequent submission indicates that the adoption of the 'm' factor used by CRA (along with some other model reconciliations) significantly reduces Frontier's

---

[346] The reason for this view was that a R-G factor of over 2 would imply that external benefits exceeded private benefits on average across each bilateral calling relationship. While it can be imagined that a particular person might particularly value being able to call another particular person, it seems unlikely that this would occur systematically across every person with whom that person has a calling relationship.

[347] WIK, p. 42.

[348] Frontier submission, September 2005, p. 47.

estimated NES mark-ups, and therefore, its 'welfare-maximising' estimates for the MTAS.[349] This suggests that the original Frontier's original NES mark-ups have been significantly overstated.

A2.4.5 Conclusion on NES mark-ups

For all of the reasons outlined above, the Commission is not confident that the NES mark-ups calculated by Frontier are appropriate and will generate the socially-efficient consumption of mobile services. Rather, based on the preceding discussion, the Commission is led to the view that the NES mark-ups calculated by Frontier are likely to be significantly overstated. In this regard, the Commission considers that the consequences of overestimating the NES mark-ups are that the price of the MTAS will be too high, and, therefore, contrary to the efficient use of infrastructure by which telecommunications services are provided and would provide inappropriate signals in the relevant markets.

A2.5 Basic reality test

As the discussion throughout this Appendix has revealed, the Frontier model takes a set of *initial* prices for three services, and transforms these into a set of 'welfare-maximising' prices which include NES and R-B mark-ups. Frontier's proposed R-B mark-ups on the MTAS are between 6.40 cpm and 14.58 cpm, while its proposed NES mark-ups on the MTAS are between 4.23 cpm and 8.29 cpm. Combined, with the LRIC estimates, these mark-ups yield a 'welfare-maximising' price for the MTAS of between 22.32 cpm and 32.73 cpm.

Submitters' views

MJA notes that the Frontier's estimated range for the MTAS charges is above the current weighted average MTAS charge of 22.5 cpm, while the mark-ups on LRIC range from 86 per cent to 214 per cent. In MJA's view, these observations alone raise serious concerns over the reasonableness of the Frontier approach as, in essence, it suggests significant increases in the MTAS which would be contrary to all international precedents in this area.[350]

The Commission's view

In the first instance, the Commission notes that both the lower and upper bound of Frontier's range of welfare-maximising' prices for the MTAS would appear to be above the current price charged by Vodafone for the MTAS. Therefore, the implementation of Frontier's 'welfare-maximising' prices would suggest that MTAS rates should be increased beyond their current level. Not only would this be contrary to regulatory decisions (and modelling of MTAS rates) in other international jurisdictions, it is also inconsistent with modelling work undertaken by CRA on behalf of Optus, which suggests that the current MTAS price should be reduced (albeit more modestly than recommended by the Commission in its MTAS Pricing Principles Determination).

---

[349] The Commission also notes that WIK 're-ran' the original Frontier model after adjusting for four factors, including Frontier's original assumption of an 'm' factor of 0.7. WIK's revised version of the Frontier model – which is applied to the Frontier model scenario which yields a 4.4 cpm NES – suggests that the NES should be reduced from 4.4 cpm to 0.3 cpm, representing a reduction in the NES of 93 per cent from Frontier's estimate.

[350] Marsden Jacob Associates, p. 68.

With respect to the R-B mark-ups specifically, Frontier recommends mark-ups of between 6.40 cpm and 14.58 cpm. The Commission notes that the upper range is substantially higher than the R-B mark-up of c-i-c cpm proposed by Optus in its Undertaking. With respect to the NES mark-ups specifically, Frontier recommends mark-ups of between 4.23 cpm and 8.29 cpm. This compares with a 2.12 cpm NES mark-up which was cited by Optus on the basis of CRA's modelling, and a 0.5 pence per minute (or approximately 1.57 cpm at the current exchange rate) NES mark-up recommended by Ofcom on the UK.

In a subsequent submission, Frontier notes the discrepancy between the 'welfare-maximising' R-B mark-ups (and the 'welfare-maximising' prices more generally) in the Vodafone and Optus models. However, it claims that this result is 'not unexpected considering different input assumptions'. It also notes its analysis that if Frontier adopts the same assumptions as Optus's consultant, CRA, its model yields similar 'welfare-maximising' price estimates to that of Optus's.

For these reasons, the Commission considers, however, the discrepancy between Frontier's results, and those provided by CRA and determined in international jurisdictions; cast serious doubt over the credibility of the original Frontier model input assumptions. This is particularly so since the Commission has serious concerns with the CRA model which tend to suggest that the 'welfare-maximising' prices have been significantly overstated.

A2.6 Overall conclusion on the Frontier model

For the reasons outlined in this chapter, the Commission is of the view that Frontier's 'welfare-maximising' price estimates for the MTAS are likely to be significantly overstated. In summary the Commission has reached this view for the following reasons:

- the Commission has concerns with the PwC model, upon which the LRIC estimates for the MTAS, used by Frontier, are based. These concerns have led the Commission to the view that the PwC model is likely to significantly overstate the forward-looking efficient economic cost (including the underlying LRIC) of providing the MTAS in Australia. Moreover, the LRIC estimates used in the Frontier model (c-i-c cpm and c-i-c cpm respectively) are significantly above those provided by Optus in the context of its Undertaking with respect to the DGTA Service (c-i-c cpm) which lends further weight to the view that they are, at least to some extent, overstated;
- after considering all the evidence, including the two consultancy reports prepared by WIK and Analysys, the Commission has concerns with the magnitude and composition of costs identified as 'FCCs' in the Frontier model. In particular, the Commission notes WIK's advice that a more reasonable estimate of the magnitude of Vodafone's FCCs would be 50 per cent of the estimate proposed by Vodafone and its consultants;
- the Commission considers that the R-B framework specified by Frontier in its model does not fully satisfy any of the necessary conditions which are required for R-B pricing to generate a socially-optimal configuration of prices. For these reasons, the Commission does not have confidence that the R-B mark-ups proposed by Frontier (between 6.40 cpm and 14.58 cpm) are appropriate;

- the Commission considered that the framework employed by Frontier to calculate its proposed NES mark-ups on the MTAS is 'partial' in the sense that it does not seek to quantify, or even consider, external effects which would suggest that MTAS rates should be subsidised rather than taxed. In addition, the Commission considers that the methodology and assumptions that underpin Frontier's calculation of the NES mark-ups are likely to significantly overstate an appropriate NES mark-up, should this be deemed relevant in the case of mobile telecommunications; and
- the Commission considers that Frontier's original modelling results fail a basis reality test when compared to current market prices for the MTAS, international experience with respect to the MTAS, and modelling work undertaken by CRA in an Australian context.

Appendix 3: Ramsey-Boiteux pricing

R-B pricing derives its origins from the work by F.P. Ramsey[351] in 1927 and M. Boiteux[352] in 1956, who established similar results from addressing different economic problems. Ramsey's seminal paper, titled *A Contribution to the Theory of Taxation*, investigated how to minimise the loss in consumer surplus when raising a given amount of tax revenue using distortionary taxes. In the introduction to this paper, Ramsey states that:

> The problem I propose to tackle is this: a given revenue is to be raised by proportionate taxes on some or all uses of income, the taxes on different uses being possibly at different rates; how should these rates be adjusted in order that the decrement of utility may be a minimum?[353]

Boiteux, examined the socially-optimal price for a public enterprise monopoly when marginal-cost pricing fails to provide cost recovery. As he noted in the introduction, his paper was:

> … left with the problem of determining how to amend the marginal cost pricing rule when the firm is subjected to a budgetary condition incompatible with the decision rule.[354]

Hence, as noted in AAPT's submission, the name 'R-B' pricing in the context of utility pricing acknowledges the work of Ramsey, who established the initial rule (i.e. the 'Ramsey Rule' for taxation), and Boiteux, who independently derived the same result in the context of cost recovery for a public utility.

A3.1 The 'Ramsey-Boiteux' (R-B) pricing rule

In short, the R-B pricing rule is concerned with determining the most efficient way for a multi-product firm to recover common costs of production, given that it engages in linear (one-part) pricing.

To explain the R-B pricing rule, consider a simplified situation where an MNO offers only two services: origination and termination. Further, assume that in providing these two services, an MNO incurs two types of costs – costs which are 'directly attributable' to each service and other costs that are 'common' to both services.[355] Moreover, assume that consumer demand is more sensitive to price changes for origination compared to termination (i.e. the own-price elasticity of demand for origination is greater than that for termination).

The problem in this instance is that pricing both services at their attributable (or marginal) costs will not raise enough revenue to cover total costs (which include common costs of production).

---

351 F.P. Ramsey, 'A Contribution to the Theory of Taxation', *Economic Journal,* 37, 1927, pp. 47-61.

352 M. Boiteux, 'Sur la Gestion des Monopoles Publics Astrient á L'Equilibre Budgetaire', *Econometrica*, 24, 1956, pp 22-40. As the original article is in French, W. J. Baumol and D.F. Bradford had the paper translated into English, and the citation for this is: M. Boiteux, 'On the Management of Public Monopolies Subject to Budgetary Constraints', *Journal of Economic Theory*, 3, 1971, pp. 219-40.

353 Ramsey, p. 47.

354 Boiteux, p. 219.

355 'Common-costs' in this context might include items such as 'IT expenses', 'sales and marketing expenses', 'central finance expenses' and 'general management expenses'. To some extent, some of these costs may not be obviously related to any particular service.

At its simplest, the R-B pricing rule suggests that the most efficient way to recover common costs is to price the service which has a relatively lower own-price elasticity of demand proportionately higher above its attributable or marginal cost than the service which has a relatively higher own-price elasticity of demand. For this reason, it is sometimes referred to as the 'inverse elasticity pricing rule'. This is because the ratio of the proportionate mark-ups on attributable or marginal costs is the inverse of the ratio of the own-price elasticities of demand. Based on the R-B literature, it can be shown that, in principle, structuring prices in this way when seeking to recover common costs will result in a lower overall efficiency cost than if a uniform proportionate price increase was levied across the two services (i.e. if the services shared common cost recovery equally).[356]

There is, however, a limit to this rule. In relation to the above example, it can be shown that it will not be optimal to recover all common costs from termination alone, even though it is the service with the more inelastic own-price elasticity of demand. Rather, it will always be more optimal to allocate common costs across the two services. In this regard, WIK, notes that:

> As a result, it does not pay simply to fund all the fixed or common costs from a mark-up in the least elastic market but it is best to balance mark-ups in inverse proportion to their market elasticities.[357]

A3.1.1 Conditions required to ensure the optimality of R-B pricing

The previous sub-section provided a simple example of the intuition underpinning the R-B pricing rule. Importantly, however, the optimality of the R-B pricing rule is predicated on a number of assumptions and conditions. If these assumptions and conditions do not hold, it becomes less clear as to whether R-B pricing is necessarily the most efficient method for recovering common costs.

Normal profit constraint

In the simplified example considered above, the optimality of the R-B pricing rule was implicitly based on the assumption that there are 'normal economic profits' being made by the MNO across the markets for origination and termination. The concept of 'normal economic profit' refers to a situation where a firm is earning a level of profit just adequate to cover all costs of production, including all opportunity costs.[358] In the context of R-B pricing, this is sometimes referred to as the *normal profit constraint*.

---

[356] A second way of interpreting the R-B rule is in terms of the reduction in quantity demanded of each service. These quantities should be reduced by the same proportion; preserving the pattern of consumption prior to the R-B mark-ups being imposed. Intuitively, to reduce the service with a more inelastic own-price elasticity of demand by a given proportion must entail a greater proportionate increase in its price than is necessary to reduce demand for the service with the less responsive demand. Alternatively, a third way of presenting the rule is in terms of the addition to the deadweight loss from increasing the price of each service (i.e. the 'marginal deadweight loss'). In order to maximise consumer welfare for a given common cost recovery, prices should be adjusted until the marginal deadweight loss in the market for termination equals the marginal deadweight loss in the market for origination.

[357] WIK, p. 16.

[358] 'Normal profit' is defined as when all resources employed by the firm are just earning their opportunity costs. In particular, when the financial capital and the entrepreneurial skills used by the firm are being compensated enough to keep them from leaving and going into some other line of productive activity, it is said that they are earning a normal profit. See R. Waud, P. Maxwell, A.

If the normal-profit constraint is not satisfied, and an MNO is making some level of 'excess' economic profits (i.e. covering all costs plus opportunity costs with profits left over), then prices set according to the R-B pricing rule will not generate a socially-optimal outcome. In the first instance, this is because mark-ups on attributable costs will be set to effect the recovery of not only legitimate common costs (including common costs of production), but also 'excess' profits. On this issue, Braeutigam[359] contends that while the same pricing structure would emerge in this circumstance (i.e. higher mark-up on the attributable cost of termination, compared to origination), the overall *level* of prices would be higher. Further, and as noted by Joskow:

> … the structure, though not the level, of the R-B prices is the same as the prices that would be charged by an unregulated monopoly with an opportunity to engage in third-degree price discrimination.[360]

This suggests that satisfaction of the normal-profit constraint is an important factor in assessing the *prima facie* appropriateness of the R-B mark-up in Vodafone's alternative approach to estimating MTAS prices, based on the Frontier model.

The necessity for monopoly power

The satisfaction of the normal-profit constraint is a necessary condition for optimal R-B pricing, however it is not necessarily a sufficient condition. This is because the R-B rule is dependent on prices being varied according to market demands, and these are not necessarily coincident with carrier-specific demands. To the extent that there is competition in the retail mobile market, MNOs will be forced to set prices according to their carrier-specific demands, rather than according to market demands. Carrier-specific demands will be more elastic than market demands; with the deviation from market demand being greater the more competitive is the market.

On this issue, WIK, has noted that:

> For profit-maximising firms this inverse elasticity rule refers to each firm's residual demand elasticities, which only coincide with the market elasticities in case of monopolies. The price structure in imperfectly competitive markets is therefore likely to differ from that of B-R prices.[361]

Given that R-B prices should be set according to market demands, *ergo*, the more competitive is the retail mobile services market, the more market prices are likely to diverge from R-B prices.

Attenborough, Foster and Sandbach recognised the difficulties presented by competitive markets for R-B pricing in a 1992 article:

> One difficulty in applying this to present day telecommunications markets is that the traditional Ramsey pricing analysis assumes one monopoly producer. In competitive markets

---

Hocking, J. Bonnici and I. Ward, *Microeconomics*, South Melbourne, Addison Wesley Longman Australia Pty Ltd, 3rd Edition, 1996, p. 182.

359 R.R. Braeutigam, 'An Analysis of Fully Distributed Cost Pricing in Regulated Industries', *Bell Journal of Economics*, 11, 1980, pp. 182-96, makes the point that the R-B prices can be derived for an allowed profit constraint that is greater than zero on p 189 in footnote 14, and on p 193 in footnote 17.

360 P. Joskow, 'Regulation of Natural Monopolies' in A.M. Polinsky and S. Shavell (eds.), *Handbook of Law and Economics*, Elsevier Science B.V, forthcoming, 2005. Draft available at: http://econ-www.mit.edu/faculty/download_pdf.php?id=1086.

361 WIK, p. 18.

> (where company specific elasticities differ from total market elasticities), Ramsey pricing … may not be sustainable.[362]

Similarly, the implications of competition for R-B pricing have been considered by Baumol and Sidak:[363]

> One final aspect of Ramsey analysis merits attention. In a competitive market, the own-price elasticity of demand is considerably smaller for a product than for a firm. If a firm unilaterally raises its price for a product, it will lose customers to other sellers, even if those customers are not lost to the industry.

Therefore, the R-B literature suggests that, were market forces in the mobile industry to result in normal-economic profits being made, they would tend to do this with an excessive price for mobile termination and deficient prices for retail services, as compared with the socially optimal R-B configuration.

Inclusion of all relevant services that give rise to common costs

In the simplified example, the two relevant services were mobile origination and termination. Therefore, to the extent that these were the only two services contributing to common costs, this was the correct specification of the R-B framework. In reality, however, an MNO is likely to supply a multitude of services that give rise to common costs. These include 'subscription', 'origination', 'termination', 'on-net' and mobile data services such as SMS and GPRS.

The correct approach would be to include all services that give rise to common costs in the R-B framework. If certain relevant services are excluded from the R-B framework, those services that are included will, other things being equal, bear a greater than appropriate portion of common costs.

Knowledge of elasticity estimates

The simple example also implicitly assumed that the relevant own-price (and cross-price) elasticities of demand for origination and termination were known, or could be estimated, with sufficient accuracy. In reality, however, and as indicated by a number of economists and regulators around the world, there are practical difficulties associated with estimating the own and cross-price demand elasticities required to implement R-B pricing successfully. These difficulties appear to be one of the main reasons why R-B pricing has not previously been applied in practice in relation to mobile termination services. For example, Baumol and Sidak have noted that:

> The data requirement is one reason why most regulators and consulting economists have rejected the use of the Ramsey formulas even to provide approximations for the prices that the regulated firm should be permitted to charge for its products.[364]

Further, Baumol and Sidak note that, whilst marginal costs are difficult enough to estimate:

> … up-to-date estimates of the full set of pertinent elasticities and cross-elasticities are virtually impossible to calculate, particularly in markets where demand conditions change frequently and substantially. As a result, an attempt to provide the regulator with an extensive set of

---

362 N. Attenborough, R. Foster and J. Sandbach, 'Economic Effects of Telephony Price Changes in the UK', n/e/r/a Topics, London, September 1992, p. 8. See also N. Attenborough, 'Regulation of Competitive Telecommunications Markets', n/e/r/a Topics 12, London, April 1993, pp. 6, 14.

363 W. Baumol and J. Sidak, *Toward Competition in Local Telephony*, MIT Press and AEI, 1994, p. 40. However, in the Commission's view, Baumol and Sidak incorrectly proceed to conclude that this will still result in appropriate mark-ups.

364 Baumol and Sidak, *op. cit.*, p. 38.

> Ramsey prices is likely to be beset by inaccuracies, by obsolete data, and by delays that will prevent the firm from responding promptly and appropriately to evolving market conditions.[365]

Similarly, the US affiliate of CRA has warned of 'difficult and costly' data requirements; that resulting prices might be 'less efficient than the prices produced in a competitive market for retail mobile services'; and that 'they may not be appropriate in a dynamic and a competitive environment'.[366]

As Vodafone notes:

> While regulators around the world have typically accepted the positive efficiency properties of Ramsey pricing and recognising externalities when considering the appropriate price for the MTAS, they have generally decided not to explicitly incorporate them (and more so Ramsey pricing) into calculating a regulated price for the MTAS predominately on the basis of complexity and the lack of robust data.[367]

These perspectives suggest that the successful implementation of R-B pricing requires up-to-date and accurate knowledge about the own and cross-price elasticities of the relevant services. Even then, it is possible that the dynamics of a quasi-competitive market may overwhelm any attempt at accurate implementation.

Single-part pricing

Another assumption of the simple analysis outlined above is that the entire burden of common cost recovery falls on 'single-part' linear prices rather than multi-part or non-linear ones.[368] Where some aspect of the pricing is unrelated to usage, some of the burden of common costs is taken away from usage, therefore reducing the required mark-ups. Therefore there is some question as to whether this is a realistic assumption in the case of mobile telecommunications markets, where prices are often set on a multi-part basis.

The recognition of relevant 'cross-price' effects

The simplified example considered above also implicitly assumed that there were no cross-price effects between origination and termination services. In other words, it assumed that a change in the price of origination did not affect the demand for termination (and *vice versa*). However, a more realistic scenario is one where the demand curves for these services are interdependent, or that a price change for one of the services will affect the demand for the other service to some extent. More broadly, there will be a myriad of inter-relationships between different mobile services and between mobile services and fixed-line services.

The R-B literature suggests that allowing for cross-price effects will change the optimal structure, and level, of R-B prices that should be applied to each service. In the case of the simplified example discussed above, if the two services are substitutes (e.g. an increase in the price of termination increases the demand for origination, and

---

365 Baumol and Sidak, *op. cit.*, p. 39.

366 Charles River Associates (B. Mitchell and P. Srinagesh), *Economic Analysis of Fixed-to-Mobile Call Termination Charges*, prepared for BellSouth International, CRA No. 4021, 28 March 2003, p. 41.

367 Vodafone Australia, *Submission to the Australian Competition and Consumer Commission Access Undertaking MTAS*, 26 November 2004, p. 16.

368 Linear or single-part pricing is where the price per unit remains constant as the amount consumed varies. Non-linear or multi-part pricing is where the price varies as the amount consumed varies, most commonly where there is a component of the tariff structure that is invariant with the amount consumed.

vice versa), the optimal R-B prices consistent with the recovery of common costs would be *lower* than if there were no cross-price effects. Alternatively, if the two services are complements, the optimal R-B prices consistent with the recovery of common costs would be *higher* than if there were no cross-price effects.[369]

Elasticity estimates which factor in both the own-price and cross-price effects are typically referred to as 'super-elasticities'.[370] The same intuition relating to the simple 'inverse-elasticity' rule carries over into the case where demand functions for each service are interdependent. In this case, the inverse-elasticity rule relates to the ratio of the proportionate mark-ups to the inverse ratio of the 'super-elasticities'. The expression of the rule in terms of equal proportionate reductions in demand and the equation of the marginal deadweight losses carry over into these more complex circumstances.

This suggests that any serious attempt to implement an optimal R-B pricing structure should factor in the impact of cross-price effects between all mobile services, and further, between mobile services and complementary or substitutable services from other networks, such as the fixed-line network. Thus, WIK advises:

> … it was known from the beginning of the Ramsey pricing literature that this is legitimate only if the other industries are competitive … [and] independent in demand … Otherwise, adjustments have to be made. In the current case, interactions with the fixed network industry are potentially large, among others, because of increasing fixed-to-mobile substitution.[371]

---

[369] The analysis of R-B pricing where there are non-zero cross-elasticities of demand is considered in section 2.2.1 of the report prepared by WIK.

[370] Where more than one price is changed simultaneously, the impact on demand of any one service will depend on the responsiveness of demand to its own price and the impact of other prices through substitutability and complementarity relationships. All of these price effects are captured by the 'super-elasticities'.

[371] WIK, p. 28.

Appendix 4: Theoretical basis for the 'network externality surcharge'

Externalities are a category of market failure that arise where acts of consumption or of production give rise to benefits or costs to other than the immediate consumer or producer and where these 'external' effects are not subject to a market transaction. This means that, in these circumstances, private decision makers will not consider any external effects in their own behavioural decisions, and therefore will result in too little of an activity with a positive external effect, and too much of an activity with a negative external effect.

Importantly, an 'externality' only exists where an external effect cannot be internalised through some means of market transaction – and not, more broadly, whenever an external effect is identified. In this regard, Liebowitz and Margolis argue that:

> Network effects should not properly be called network externalities unless the participants in the market fail to internalize these effects. After all, it would not be useful to have the term 'externality' mean something different in this literature than it does in the rest of economics. . Although the individual consumers of a product are not likely to internalize the effect, ... the owner of a network may very well internalize such effects ... [and] they are no longer externalities.[372]

Although an examination of the literature reveals some ongoing definitional issues, there appear to be two main kinds of externalities relevant to telecommunications networks – 'network' externalities and 'call' externalities. These are discussed in turn below.

A4.1 Network externalities

'Network externalities' are thought to arise when existing telecommunications network subscribers (fixed and mobile) attribute some value to a new subscriber joining a telecommunications network. However, the private value placed on these subscriptions (i.e. the marginal subscriber's willingness to pay) does not take into account this external benefit to existing subscribers.

For example, in the context of mobile networks, it is often argued that new subscribers bring benefits to existing subscribers because the expansion of the subscriber base increases the range of communication opportunities available to existing subscribers. That said, economic theory suggests that a marginal subscriber will only take into account the benefit he/she derives from subscription (i.e. calls made, calls received) and will not factor into their private valuation the external benefits that accrue to existing subscribers. The consequences of this situation are noted by WIK:

> In this case a person may not derive enough private benefits to cover the price of subscription even though economic welfare or social benefits would be enhanced if that person would join the network. In that case the number of subscribers or penetration would be below its (socially) efficient level.[373]

---

[372] S. Liebowitz. and S. Margolis, 'Network Externalities (Effects)', undated, p. 1. (http://www.utdallas.edu/~liebowit/palgrave/network.html.)

[373] WIK, p. 37.

Two different types of 'network externalities' are often identified in the literature; the network 'usage' externality and the network 'option' externality. In the context of the mobile network example above, the 'usage' externality captures the benefit that existing subscribers (mobile and fixed) receive by being able to call, and receive calls from, new mobile subscribers. The existence (if not the value) of such a benefit can be observed via the change in the *volume* of FTM and MTM calls that are made by existing subscribers when a new subscriber joins a mobile network.

In contrast, the 'option' externality captures the benefit that existing subscribers (fixed and mobile) derive from having the option of calling new mobile subscribers, even if an existing subscriber never exercises that option. For example, an employer may gain some benefit if one of its employees purchases a mobile subscription on their own initiative, even if they never actually call that employee. The benefit could arise from simply the knowledge that in the case of an urgent situation, that employee can be contacted.

Because the network externality is often thought to benefit both existing fixed and mobile subscribers, the following distinction can be made:

- *Mobile subscription network externality* – where existing mobile subscribers value the addition of new mobile subscribers because it gives them more communications possibilities; and
- *Fixed-line mobile network externality* – where existing fixed subscribers value the addition of new mobile subscribers because it gives them more communications possibilities.

Despite the intuitive theoretical case for network externalities, some economists have questioned the relative importance of this effect. For example, in the context of fixed-line networks, Lewis Perl argued that:

> Thus, while there probably is a network externality associated with telephone services, taking it into account has little effect on the estimated gains from cost-based pricing … Because of the small size of the externality, its existence also has very limited effects on optimal pricing policy. associated with telephone service, taking it into account has little effect on the estimated gains from cost-based pricing.[374]

Moreover, and as discussed further below, given the linkages between fixed and mobile networks, there may also be network externalities associated with fixed subscription as well. This issue becomes more relevant given anecdotal evidence of an increasing trend of fixed-to-mobile substitution in Australia.

A4.2 Calling externalities

'Calling externalities' are thought to arise when the consumption of a telecommunications 'call' service generates benefits (or costs, in the case of unwanted calls) other than those experienced by the person paying for the call. To the extent that such external benefits are not internalised between the calling party and the called party, it is argued that call externalities may be generated.

---

[374] L. Perl, 'The Consequences of Cost-Based Telephone Pricing' in J. Mitchell (ed.) *Telecommunications and Equity: Policy Research Issues*, North-Holland, Amsterdam, 1986, p. 240.

A significant feature of telecommunications services is that they usually involve some means of communication between two (or more) individuals. Hence, consumption of the service is (generally) 'joint' and provides benefits for more than one consumer. While consumption is joint, a particular unit of the service (e.g. a phone call or an SMS) is often paid for by only one consumer.

Under a Calling Party Pays (CPP) system, which operates in Australia, the person who initiates a call (the *calling* party) pays for it. This means that although the *called* party also receives benefits from the call, they do not generally contribute to the payment for that particular unit.

The recognition of this externality effect would suggest that an existing subscriber (fixed or mobile) places some value on the incoming calls they receive, which is independent or separate from the value placed on those calls by the calling party. To the extent that call externalities exist (i.e. are not fully internalised), therefore, this would suggest that the number of calls being made is less than would be efficient. As Armstrong and WIK have noted, such a situation may provide an *a priori* case for the subsidisation of termination/call charges to encourage increased call volumes.[375]

That said, it should be noted that there is disagreement within the literature as to the relevance of this 'externality'. For example, some economists have emphasised the ability of the *calling* and *called* parties to internalise any external benefits that arise from the CPP billing system through bilateral calling arrangements or understandings. For example, Maldoom has noted that:

> Models of telecommunications demand generally assume that call externalities between the caller and the called party are internalised. Often, this situation arises as a result of regular, repeated communication. In such repeated bilateral calling relationships, calls in either direction may serve the purpose of communicating news … Where this call direction substitution occurs, subscribers have an indirect interest in the cost of being called.[376]

In line with this view, the Rohlfs 'base case' model which was utilised by Ofcom assumed that call externalities (they appear to have been termed 'usage' externalities by Rohlfs) were fully internalised. However, Rohlfs also noted that his model allows the user to examine the effects of small positive (uninternalised) call externality effects (i.e. by setting the relevant model parameters to 1.1) and that externalities of this magnitude 'significantly reduce the optimal usage prices and termination charges'.[377] On the extent to which call externalities are internalised, WIK states in its report to the Commission that:

> Indeed usual communication patterns and behaviour internalise a great deal of call externalities. Communication normally is not a one-way road. The more people communicate to each other, the more probable is the outcome that the number of calls from both sides is close to equal, which roughly internalises the externalities associated to their calls.[378]

That said, WIK also noted that external benefits from calls received from outside the 'community of interest' may not be efficiently internalised.

---

375 M. Armstrong, 'Call Termination on Mobile Networks', paper for Oftel, 11 April 2002.

376 D. Maldoom, 'Caller-called Party Interaction: Implications for Call Termination', DotEcon Discussion Paper No. 02/03, London, September 2002, pp. 2-3.

377 Jeffrey H. Rohlfs, 'A Model of Prices and Costs of Mobile Network Operators', paper for Oftel, Strategic Policy Research, 22 May 2002, p. 5.

378 WIK, p. 39.

Appendix 5: Note on the 'waterbed' effect

Vodafone's original supporting submission, and the report prepared on its behalf by Frontier, did not directly address the issue of the extent to which prices for other mobile services (i.e. 'retail mobile services') would adjust in the event of a regulated reduction in MTAS rates.[379]

However, as noted in Chapter 4, Frontier has subsequently prepared a paper on Vodafone's behalf (hereafter referred to as the 'Waterbed paper') addressing this issue in the context of both the MTAS undertakings submitted by Optus and Vodafone.[380] It has also submitted a response to one of AAPT's submissions criticising Frontier's analysis.[381]

The underlying contention of Frontier's 'Waterbed paper' is that a profit-maximising MNO will increase the price of retail mobile services following a (regulated) reduction in the MTAS rate, regardless of the level of competition in the market for (retail) mobile services. In reaching this view, Frontier argues that complementarity in demand and supply of mobile services are such that a profit-maximising MNO will seek to maximise the combined total revenue it receives from *both* retail services and the MTAS – and as such, a fall in the MTAS rate will drive prices for retail mobile services up, in order for the MNO to maintain the same level of revenue (and similarly, profits).

The effect of such a reduction in MTAS rates on prices for retail mobile services has been termed the 'waterbed effect'.[382]

Frontier submits that the level of competition in the (retail) mobile services market will affect the strength of the 'waterbed effect' – or the extent to which prices of retail mobile services may change as a result of a regulated reduction in the MTAS rate. In the case of perfect competition in the retail mobile services market, although it does not state this explicitly, Frontier appears to implicitly suggest that a 100 per cent 'waterbed effect' would operate in certain circumstances. In the case of a monopolist, Frontier argues that depending on whether 'linear' or 'constant elasticity' demand functions are assumed for FTM and retail mobile services, the 'waterbed effect' could be between 50 per cent to 'more than 100 per cent effective' in this case'.[383]

Vodafone and Optus consider that the 'waterbed effect' is a broadly accepted concept. The hypothesis, as stated by Frontier Economics, on behalf of Vodafone is that:

> [t]here is broad acceptance that a regulated reduction in mobile termination rates (MTRs) will affect the rates charged for other retail services such as mobile subscriptions and mobile originated services. [384]

---

379 Vodafone submission, March 2005.

380 See also Vodafone's letter of 8 July 2005, *Frontier Economics Report on 'The Waterbed Effect'*, which accompanied the Frontier Report when it was submitted in relation to the Optus DGTA undertaking.

381 Frontier Economics (Frontier), *Response to AAPT's Submission to the ACCC 'Estimates of Ramsey-Boiteux Mark-ups & Network Externality Effects*, A note prepared for Vodafone, November 2005.

382 As Frontier notes in its Waterbed report, this was termed the 'waterbed effect' by the Competition Commission in the UK and has subsequently been used in regulatory debates in other countries.

383 Frontier, *The Waterbed Effect,* A Report prepared for Vodafone, July 2005, p. 13.

384 Frontier, The Waterbed Report, p. 3.

Similarly, Optus claims that:[385]

> The waterbed effect is uncontroversial to most. It was accepted by the UK regulators and … by the New Zealand Commerce Commission … Hausman (2004) provides an algebraic proof …[386]

One of the key conclusions reached by Vodafone and Optus in this regard (based on the advice of their respective consultants) is that any analysis of the welfare effects of MTAS regulation should take into account the effect on welfare of changes in the prices of retail mobile services as well as the effect on welfare of a change in the price of FTM services.[387]

A5.1 Frontier's 'waterbed' assumptions

In its Waterbed report, Frontier notes that it is 'difficult to obtain empirical evidence from the mobile telecommunications industry about the extent to which the waterbed effect applies.[388] Frontier also notes that 'it is not aware of any study that has sought to isolate the impact of MTR regulation from the host of other factors affecting prices of retail mobile services'.[389]

That said, Frontier has considered it a 'reasonable approach to assume that in the case of the mobile services market in Australia, the waterbed will be 100 per cent effective'.[390] In other words, Frontier assumes that in response to lost revenue due to a reduction in MTAS rates, an MNO will be forced to increase prices for retail mobile services to recover those lost revenues. The assumption of a 100 per cent 'waterbed effect' would appear to be based on the premise that there is effective competition in the retail mobile market, and therefore, that an MNO is operating within a 'normal profit constraint' framework.

As noted above, Frontier does not explicitly address the 'waterbed' issue in its report which outlines its model to estimate the 'welfare-maximising' prices for the MTAS, which incorporate R-B and NES mark-ups. However, based on its subsequent submissions, the Commission understands that the Frontier model is based on a 100 per cent 'waterbed' assumption with respect to prices for retail mobile services.

The next section outlines submitters' views on this issue.

A5.2 Submitters' views

In assessing the merits of Frontier including R-B mark-ups on the MTAS, Hutchison submits that 'insufficient evidence' has been provided in support of the model's two key assumptions; the zero-profit constraint and a full 'waterbed effect'. With respect to the 'waterbed' assumption, Hutchison submits that Frontier 'makes no attempt to consider the workings of the Australian market' and 'simply refers to theoretical propositions'.[391] Hutchison also submits that in the absence of a 'full waterbed effect'

---

385 Optus second submission, August 2005, p. 12. Reference to Jerry Hausman, *Statement of Jerry Hausman*, statement on behalf of Optus, 17 December 2004.
386 Jerry A Hausman, 'Economic Analysis of Regulation of CPP', 29 November 2004, p. 9.
387 Frontier, Waterbed paper, p. 16.
388 Frontier, Waterbed paper, p. 11.
389 Frontier, Waterbed paper, p. 11.
390 Frontier, Waterbed paper, p. 16.
391 Hutchison submission, p. 35.

higher MTAS charges due to an NES result in greater profits for MNOs 'at the expense of the LTIE'.[392]

AAPT submits that reading the initial submission by Frontier in conjunction with its subsequent 'Waterbed report' is problematic for two reasons. Firstly, in AAPT's view the 'waterbed effect' arguments made by Frontier in the 'Waterbed report' are sustained using a theoretical model that is 'inconsistent' with Frontier's model to derive welfare-maximising prices for the MTAS.[393] Secondly, in AAPT's view, Frontier's 'waterbed effect' analysis appears to confuse the distinct concepts of network externalities and complements which can potentially lead to problems with measuring the overall welfare impact of price changes.[394]

The CCC engaged its own expert to look at the issue.[395] The author of this report, Dr Andrew Wait makes a number of points about this debate.

Firstly, it is not necessarily the case that a decrease in MTAS rates will lead to an increase in prices for retail mobile services. Indeed, it is possible that increased FTM call volumes and/or increased product market competition arising from lower MTAS rates could 'counteract or even outweigh any incentive to increase mobile retail prices'.[396]

Secondly, referring to lower MTAS prices as an 'increase in costs' misses the crucial (and complicated) relationship between the number of incoming calls and the other services provided by an MNO, and other factors not considered by Frontier may be more important in determining retail mobile prices.

Thirdly, even if a reduction in MTAS rates leads to an increase in retail mobile prices, this does not suggest that the Commission should not reduce MTAS rates as this could still lead to overall welfare increase.[397]

A5.3 The Commission's view

The issue of whether there will be any adjustments to prices for retail mobile services flowing from a change in the MTAS price involves analysing 'supply and demand' factors operating in the mobile industry. In analysing these effects, Vodafone and Optus refer to the 'waterbed' analogy and submit that this is a broadly accepted concept. On the other hand, other parties have been less supportive.

In the Commission's view, consideration of market realities suggests that an MNO *might* increase one or more retail prices in response to a decrease in the MTAS charge, but only if it were profit maximising to do so. Clearly, an MNO like Vodafone will set prices for the MTAS and for retail services according to profit-maximising principles, taking into account direct and indirect impacts on profits.

However, it is possible that the behaviour attributed by Vodafone in its support of the 'waterbed effect' would – if viewed as a general principle – be inconsistent with profit maximisation.

---

392 Hutchison submission, p. 36.
393 AAPT, submission on Ramsey-Boiteux and Network Externalities, p. 37.
394 AAPT, submission on Ramsey-Boiteux and Network Externalities, pp. 36-37.
395 Andrew Wait, *The Waterbed Effect: A Comment on Frontier Economics (2005)*, A report prepared for Competitive Carrier' Coalition Inc, November 2005.
396 Andrew Wait, p. 8.
397 Andrew Wait, pp. 3-4.

Prior to the regulation of the MTAS, the only reason why retail mobile service prices would be *reduced* by a profit-maximising MNO is if that action increased profits overall. In itself, reducing retail mobile prices has a negative primary impact on profits; most graphically in the form of the cost to the MNO of handset subsidies or reduced revenue from below-cost subscription fees. However, to the extent that the resulting increased demand for mobile subscription increased the demand for FTM calling, it would, in turn, have the effect of increasing demand for MTAS services.

As long as MTAS services are priced above their underlying TSLRIC+, this will lead to greater MTAS profits.[398]

The profit-maximising MNO would trade-off this increase in MTAS profits with the loss in profits from selling subscription below cost.

Now consider what might happen were the MTAS charge to be reduced by regulatory action. Given this profit-maximising condition, it would be irrational *necessarily* to respond in the retail mobile services market with actions designed to restore aggregate revenue to its level prior to the reduction in the MTAS charge. The profit-maximising MNO would likely, in addition to the direct impact on profits, consider the feedback into the market for FTM calling. For example, the attempt to retrieve revenue by increasing mobile subscription prices will be thwarted – at least in part – by losses in FTM revenue as the demand for FTM calls decreases due to a decline in the number of mobile subscribers.

Given the Commission's view that the price of the MTAS remains above its TSLRIC+, there will be profit losses in the market within which the MTAS is supplied. The marginal loss in MTAS profits through an inward shift of the demand for the MTAS (which is a derived demand from FTM calls) *could* be greater than the marginal profit gain from increasing the subscription charge (such as by reducing any handset subsidy), and no retail price increase would occur. Perhaps this result can be summarised thus: If it was a good idea to reduce retail prices before regulation of MTAS, it could still be a good idea to keep them low after regulation.

Proponents of the waterbed effect depict it in terms of standard market reactions to changes in (incremental) costs, and infer that the Commission is out of line with this fundamental economic analysis. Thus, Professor Hausman contends that:[399]

> … it would be an extremely inconsistent position … to assume that … FTM retail providers will pass on a portion of lower costs and yet to assume that competitive mobile providers … will not decrease the amount of their handset subsidies or increase their outgoing call price when their FTM call prices are decreased due to regulation.

The Commission does not consider that any such inconsistency exists. The reason for the reduction in the FTM price is that there is a reduction in a per-unit input cost (the MTAS charge), and standard market analysis predicts that some or all of this will be passed through in lower prices, with the amount of pass-through depending on the prevailing market form (e.g. monopoly or competition). In contrast, in the retail

---

[398] Using self-explanatory notation, the marginal profit gain from increased termination is equal to: $\Delta\pi_{TERM} \quad \Delta Q_{TERM} \times (P_{TERM} - TSLRIC_{TERM})$.

[399] Hausman Statement, paragraph 78. See also Michael Katz, *Competition, Efficiency, and the Long-Term Benefit of End-Users*, Report before the Commerce Commission, New Zealand, 30 November 2004, pp. 27-32. Hausman's and Katz's reports are both cited approvingly by Frontier (pp. 10-11).

market (despite the assertions of Frontier) there is no actual change in a per-unit input cost to act as a catalyst for a price adjustment. In this context, Professor Hausman appears to confuse an extraneous change in profits with a direct change in per-unit costs, and consequently draws an erroneous conclusion regarding the consistency of the Commission's position. In addition, Professor Hausman overlooks an input price change that actually does occur; leading to the need to qualify his analysis further. Specifically, a more complete analysis would consider that there is a change in a per-unit input cost of supplying off-net FTM calls, flowing from the reduction in the MTAS charge. This would lead, other things being equal, to a reduction in the off-net MTM retail price of up to the amount of the reduction in the MTAS charge.

Professor Hausman has also supplied an algebraic analysis of the effect on retail prices as an appendix to his statement,[400] and this has been cited approvingly by Frontier which claims that its own diagrammatic analysis is consistent with it. However, in the Commission's view, this algebraic analysis is not a completely accurate depiction of the circumstances facing a mobile carrier under the calling party pays (CPP) arrangement, and as described by Professor Hausman in the body of his report.

The Hausman algebraic model presents demand for subscription as a function of the price of subscription (–), the price of outgoing calls (–) and the 'per call terminating charge' (–). However, under CPP the receiving party does not pay for incoming calls, so that term should not be part of the analysis. Instead, the demand for subscription should be related to the number of incoming calls. This would accord with Professor Hausman's depiction of the demand for subscription earlier in his statement:

> … a mobile subscriber would place a very high value (consumer surplus) on incoming calls since they are free. [footnote: Consumer value for a service is measured as the maximum they would be willing to pay to receive the service minus the amount they actually pay. If an amount paid is zero, the value will be higher ceteris paribus.]

In the Commission's view, this effect is not captured adequately by Professor Hausman's algebraic analysis.

Frontier claims that its diagrammatic analysis is consistent with Professor Hausman's algebraic analysis. In defining supply and demand complementarities Frontier states that:

> Products are said to be complements in demand when a consumer's willingness to pay to obtain the products is together greater than the willingness to pay for each of the products separately. … Complementarities in supply, or economies of scope exist when the costs to a firm of supplying both products are less than the costs associated with supplying the products separately. In some industries, complementarities in supply are such that firms will generally supply any single product as part of a bundle of goods. [401]

However, having defined complementarity in an appropriate manner, Frontier then sets out an asymmetric model of the complementarity between FTM calling and mobile subscription. Thus an increase in the retail price (of subscription and/or MTM) will lead to a reduction in the number of subscribers and, therefore, a reduction in MTAS revenue; but an increase in the MTAS price (and thus a reduction in FTM calling) has no consequences for the demand for subscription. This akin to arguing

---

[400] Hausman Statement, *op. cit.*, paragraph 89. There appears to be a typographical error in the signing of (A5) where 'the numerator is negative' should read 'the numerator is positive'.

[401] Frontier Economics, *The Waterbed Effect*, A report prepared for Vodafone, July 2005, p. 5.

that an increase in the price of table knives will reduce the demand for table forks, but that an increase in the price of table forks will have no impact on the demand for table knives. If MTAS demand and retail mobile demand are indeed complements, the Commission would expect that an increase in the MTAS price would lead to a decrease in the number of FTM calls received by mobile subscribers, and therefore result in a shift downwards in the demand for mobile subscription, leading to a complementary fall in subscription.

This complementarity linkage appears to be absent from Frontier's analysis. This criticism of Frontier's analysis has been made by AAPT, who observes 'it has clearly not modelled a two-way effect'.[402] Frontier in its 'Response to AAPT' seems to misunderstand this criticism when it responds by characterising its diagrammatic analysis as:

> … merely a pictorial representation of part of the (algebraic) logic of Professor Hausman …[403]

However, while it is not properly developed, Professor Hausman's analysis does allow for a shift in the demand for subscription from an increase in the price of the MTAS,, and Frontier's analysis does not – either explicitly or implicitly. Were it to be a feature of Frontier's analysis the demand curve for retail services would (as Frontier appears to recognise)[404] need to shift, not remain static. Frontier claims it did not do this because:

> The same logic can be translated into words as follows: If the Commission were to impose a decrease in the price of subscription which, in turn, would increase demand for (and the price of) incoming calls.
>
> It is true that we did not represent this latter logic in our Waterbed Report … because we did not consider it to be relevant to the considerations of the Commission.

While it is true that the Commission does not contemplate imposing limits on the price of subscription, this is irrelevant to the proper approach to assessing the full effects of a change in the MTAS charge, and the Commission believes that Frontier has not taken such an approach.

Moreover, Frontier's attempt to model the effects of a regulated reduction in the MTAS charge does not take into account the existence of both mobile-only and integrated fixed-line and mobile operators in the Australian market. In this regard, a MNO with different circumstances with respect to its balance of MTAS receipts and payments will not necessarily be affected in the same way as Vodafone. That is, it is possible that a MNO that is a 'net payer' of MTAS charges could actually benefit from a regulated reduction in MTAS charges. Such an MNO would not have an incentive or requirement to increase retail mobile prices in response to a regulated reduction in MTAS charges. In this circumstance, an MNO such as Vodafone would not necessarily increase its total revenue from its mobile operations by increasing its retail mobile prices in response to a regulated reduction in MTAS charges.

In conclusion, the process that Vodafone calls the 'waterbed effect' is insufficiently developed by it and its consultant to provide a substantial understanding of the effects

---

402 See AAPT (*Estimates of Ramsey-Boiteux Mark-ups & Network Externality Effects*, submission to the ACCC, October 2005, p. 39.

403 Frontier 'Response to AAPT', p. 13.

404 Frontier 'Response to AAPT', p. 13 (last full paragraph).

of a change in the MTAS charge on retail mobile prices. The Commission holds this view for four main reasons.

Firstly, Frontier's analysis does not recognise that the reason why MNOs decrease subscription charges is to attract subscribers and, thus, increase profits from the MTAS. Otherwise, such subsidies would be illogical. While a lower MTAS charge remaining above cost may result in a lower loss of profit from a given increase in the subscription price, it will still likely be the case that MTAS profits will fall as a consequence of increasing the subscription charge.

Second, Frontier's analysis is partial. A full analysis would incorporate the symmetry of the complementarity between FTM calling and mobile subscription, thus recognising that an increase in the MTAS charge will reduce the attractiveness of mobile subscription by decreasing the volume of incoming calls received. As Professor Hausman's analysis infers, this will reduce the willingness to pay for subscription. In addition, the Frontier analysis does not appear to bring out the explicit welfare effects of the complex set of interactions following a change in the mobile subscription charge..

Third, the Frontier analysis does not incorporate the effect of other MNOs reducing their MTAS charges, thus allowing a reduction in the price of, and an increase in demand for, FTM calling. Other things being equal, this could be expected to flow through to a greater economic surplus from mobile subscription at its present price.

Finally, Frontier's analysis assumes a full 100 per cent 'waterbed effect' without, by its own admission, any empirical evidence in support of this assumption. In the Commission's view, even if the 'waterbed' proposition was accepted in this context, it is not necessarily clear that it would operate to such an extent.