



**Australian  
Competition &  
Consumer  
Commission**

# **Mobile Services Review**

## ***Mobile Terminating Access Service***

***Draft Decision*** on whether or not the Commission should extend, vary or revoke its existing declaration of the mobile terminating access service

March 2004

## Table of contents

Executive Summary .....	i
Introduction.....	i
The Mobile Termination Service .....	i
The Commission’s approach to regulating this service to date .....	iii
Appropriate pricing principles for the mobile termination service.....	xvi
Draft Decision.....	xvii
1. Introduction.....	1
1.1 Background .....	2
1.2 Structure of this report .....	5
2. Timetable and process for the public inquiry .....	6
2.1 Making submissions to the public inquiry .....	6
3. Legislative background.....	8
3.1 The access regime .....	8
3.2 Maintaining, varying or revoking an existing declaration .....	8
3.3 The Commission’s approach to the LTIE test .....	9
3.3.1 Promoting competition.....	10
3.3.2 Any-to-any connectivity .....	12
3.3.3 Efficient use of, and investment in, infrastructure.....	12
3.4 Pricing principles for declared services .....	14
4. Service description.....	15
4.1 Principles for developing a service description .....	15
4.2 Background .....	16
4.3 Views of interested parties.....	16
4.4 Commission view.....	18
4.4.1 Extension of service description from termination of services on 2G mobile networks to include termination of services on 2.5G and 3G networks.....	18

4.4.2	Differences between FTM and MTM termination services.....	23
4.5	Conclusion .....	25
5.	Will declaration promote competition in telecommunications markets? .....	26
5.1.	The Commission’s approach to determining whether declaration will promote competition in telecommunications markets .....	26
5.2	What are the relevant markets?.....	28
5.2.1	The Commission’s approach to defining relevant markets.....	28
5.2.2	Defining the market in which the eligible service is supplied.....	29
5.2.3	Defining other markets in which declaration may promote competition .....	47
	Conclusion .....	51
5.3.3	Retail mobile services market.....	59
	(a) Market concentration.....	59
	(b) Barriers to entry.....	64
5.4	The extent to which competition would be promoted by declaration.....	94
5.4.1	The impact of declaration on competition in the market within which the eligible service is provided.....	97
5.4.2	The impact of declaration on competition in the market within which FTM services are provided.....	98
5.4.3	The impact of declaration on the market within which retail mobile services are provided.....	102
5.4.4	Conclusion .....	104
6.	Will declaration achieve any-to-any connectivity?.....	105
6.1	Views of interested parties.....	105
6.2	Commission view.....	105
6.3	Conclusion .....	108
7.	Will declaration encourage the economically efficient use of, and the economically efficient investment in, infrastructure?.....	109
7.1	Impact on efficient use of infrastructure.....	109
7.1.1	Views of interested parties.....	111

The Fixed-line Externality Argument.....	114
The Mobile Externality Argument.....	115
Ramsey Pricing Arguments .....	117
7.1.2    Commission assessment regarding whether declaration would be likely to encourage an efficient use of telecommunications infrastructure .....	119
7.2    Impact on efficient investment in infrastructure.....	140
8.    Pricing principles for a declared Mobile Termination Service.....	149
8.1    Legislative criteria .....	149
8.2    Which generic form of pricing principle is appropriate for a Mobile Termination Service?.....	150
8.2.1    Regulatory forbearance.....	151
8.2.2    Provision of pricing information to subscribers and FTM callers.....	153
8.2.3    Continuation of some form of retail benchmarking pricing principle .....	155
Telstra’s retail price movements.....	157
Vodafone’s retail price movements .....	157
Optus’ retail price movements.....	157
8.2.4    Cost-based pricing methodologies.....	161
8.2.5    An adjustment path towards a closer association of prices and costs for the mobile termination service .....	165
8.3    Issues associated with implementation of the Commission’s preferred pricing principle.....	166
Adoption of a target termination price.....	166
A gradual adjustment to the target price to address concerns regarding adjustment costs .....	167
8.4    Mechanisms to address FTM ‘pass-through’ .....	169
8.5    Conclusions.....	172
Appendix A – Service description .....	174
Appendix B – Submissions in response to the Discussion Paper .....	175

# Executive Summary

## Introduction

In March 2003, the Australian Competition and Consumer Commission (the Commission) announced that it would conduct a wide-ranging review of a number of issues associated with the regulation of the mobile services industry.

One aspect of this inquiry concerns whether or not the Commission should extend the expiry date for the declaration of the Domestic Global System for Mobiles (GSM) and Code Division Multiple Access (CDMA) terminating access service, or to allow this declaration to expire.<sup>1</sup> The expiry date for this declaration is 30 June 2004. This aspect of the inquiry also concerns whether or not this declaration should be varied or revoked or replaced by new declarations. The Commission is conducting this aspect of the inquiry pursuant to section 152ALA of the *Trade Practices Act 1974* (the Act) and Part 25 of the *Telecommunications Act 1997*.

Further, the Commission indicated that the review would also consider what form of regulation – and, in particular, what form of pricing principle – would be most appropriate for this service should it find that continued or varied declaration of a mobile termination service was appropriate.

In order to advance and inform this and other aspects of the review, and in accordance with Division 3 of Part 25 of the *Telecommunications Act 1997*, the Commission released a Discussion Paper on 24 April 2003.

In response to the Discussion Paper, the Commission received 27 submissions from interested parties. A list of these parties is contained in Appendix B of this report.

As part of this process, the Commission also held two public forums to aid consideration of the central issues in this review. These were held in Melbourne on 29 August 2003 and in Sydney on 11 September 2003.

## The Mobile Termination Service

The mobile termination service 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.<sup>2</sup>

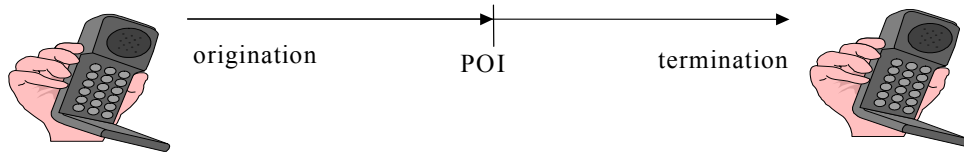
When a mobile call is made between consumers (or end-users), it will involve two essential elements – origination and termination. Origination refers to the carriage of a call from the end-user who makes, or originates, the call over the network to which this end-user is connected. Termination refers 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

---

<sup>1</sup> GSM and CDMA are alternate second generation/digital mobile network technologies.

<sup>2</sup> A full service description for the mobile termination service for the purposes of this inquiry can be found at Appendix A of this report.

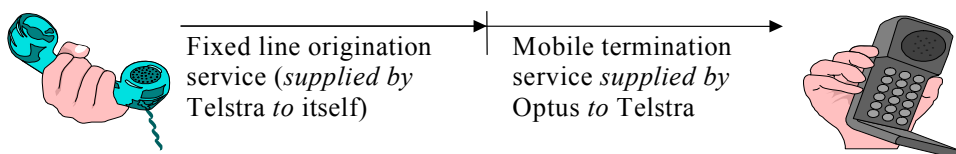
exist. Origination, termination and the POI for a call between end-users on two separate mobile networks are illustrated in Figure 1 below.



**Figure 1 - Use of the mobile termination service to supply a mobile-to-mobile call**

Under current commercial arrangements between network owners, the network owner that originates the call 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 or the ‘termination’ model.

An example of how the mobile termination service is used in the provision of a fixed-to-mobile (FTM) call is depicted in Figure 2 below. In this example, Telstra purchases access to Optus’ mobile termination service in order to provide a call from a Telstra fixed-line end-user to an Optus mobile end-user. Telstra would then bill its directly-connected consumer for providing a FTM call service.



**Figure 2 - Use of the mobile termination service to supply a fixed-to-mobile call**

Mobile termination is therefore an essential input into the provision of calls to mobile phone users where the mobile phone user is on a separate 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. It is also a key element in the provision of calls that terminate on 2.5G and third generation (3G) mobile networks.<sup>3</sup>

<sup>3</sup> 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

## **Declaration**

Under the Act, declaration of a service creates a requirement for those carriers supplying the service (known as ‘access providers’) to provide the service, upon request, to other service providers (known as ‘access seekers’).<sup>4</sup> In doing so, the access provider must take all reasonable steps to ensure that the technical and operational quality of the service is equivalent to that which the access provider provides to itself.<sup>5</sup>

Declaration ensures service providers have access to the inputs they need to supply competitive communications services to end-users. The terms and conditions of supply for a declared service can be agreed through commercial negotiations. If the access provider or access seeker cannot agree on the terms and conditions of supply, either party can seek Commission arbitration of disputes over access terms and conditions for the service. Where a relevant access undertaking (approved by the Commission) exists, an arbitration determination made by the Commission must not be inconsistent with that undertaking.

## **The Commission’s approach to regulating this service to date**

In 1997, the GSM termination service was deemed to be declared under section 39 of the *Telecommunications Act 1997* and Part XIC of the Act. At that time, the Commission considered that the GSM termination service should be deemed for the purpose of achieving any-to-any connectivity between end-users of a GSM network and end-users of any other telephony network.<sup>6</sup>

In subsequent years, a number of access disputes arising from disagreements over the terms and conditions of access to the GSM termination service were notified to the Commission under Part XIC of the Act. As a consequence of its arbitration of these disputes, the Commission developed pricing principles for the GSM termination service which it released in July 2001. The Commission determined that it would adopt a retail benchmarking pricing methodology in its arbitration of access disputes in relation to the service. Details of this particular pricing principle are contained in Chapter Eight of this report. After the release of this pricing principle, all remaining GSM access disputes were withdrawn. While the Commission was not required to apply its pricing principles to resolve any of these disputes, the Commission believes the issuing of pricing principles served a useful purpose in helping parties resolve disputes in relation to the mobile termination service.

Due to the unique and novel nature of this pricing principle, the Commission indicated at the time of its release that it would monitor the success of the methodology in achieving its intended goals, and conduct a review of the pricing principle after an initial two-year implementation period.

---

support much higher data rates, measured in megabits per second, intended for applications such as full-motion video, video conferencing and full Internet access.

<sup>4</sup> *Trade Practices Act 1974* (Cth) (the Act) para. 152AR(3)(a).

<sup>5</sup> Act para. 152AR(3)(b).

<sup>6</sup> ACCC, *Deeming of Telecommunications Services*. 30 June 1997, p. 19.

In March 2002, the Commission released a report examining a proposed variation to the GSM termination service declaration to make it technology-neutral, resulting in the definition of the service being varied to include termination on CDMA mobile networks.

As a result of the variation to the service declaration, the Commission released a report, in September 2002, setting out its pricing methodology for the varied GSM and CDMA mobile termination service. The Commission concluded that the retail benchmarking approach was still the most appropriate pricing methodology for use in arbitrating disputes in relation to the varied mobile termination service.

This current review fulfils the commitment made by the Commission in its July 2001 report on the pricing principle for the GSM termination service to review the success of the mobile termination pricing principle after two years. Separately, following changes made to the Act in December 2002, the mobile termination service is due to expire at the end of June 2004. This Draft Report fulfils the Commission's obligation under section 152ALA of the Act to consider:

- whether to extend or further extend the expiry date of the declaration;
- whether to revoke the declaration;
- whether to vary the declaration;
- whether to allow the declaration to expire without making a new declaration under section 152AL; and
- whether to allow the declaration to expire and then to make a new declaration under section 152AL.

In order to address these questions, the Commission has considered three general issues:

1. Whether declaration of a mobile termination service would continue to be in the long-term interests of end-users (LTIE);
2. If so, does the declaration need to be varied; and
3. What particular pricing principle would be most appropriate for a declared mobile termination service?

An overview of the Commission's key findings on each of these issues is outlined below.

### **Would declaration of a mobile termination service continue to be in the LTIE?**

Section 152AL of the Act provides that the Commission may declare an eligible service if it is satisfied that the making of the declaration will promote the LTIE of carriage services or services provided by means of carriage services. In turn, section



152AB of the Act provides that, in determining whether declaration promotes the LTIE, regard must be had only to the extent to which declaration is likely to result in the achievement of the following objectives:

- promoting competition in markets for listed services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied.

The impact of declaration on each of the three subsidiary LTIE objectives is addressed in turn below.

### **Will continued declaration promote competition?**

Chapter Five of the Draft Report considers in detail the Commission's analysis of whether declaration of the mobile termination service will promote competition in the markets for listed telecommunications services.

### **The source of market power**

Chapter Five outlines the Commission's draft view that providers of mobile termination services have 'bottleneck' control over access to an essential input in the provision of FTM and mobile-to-mobile (MTM) calls. Further, the Commission finds that mobile network operators are not constrained in their pricing decisions for the mobile termination service and have both the ability and incentive to raise the price of this service above its underlying cost of production. The Commission considers that providers of the mobile termination service are not constrained by the existence of alternative substitutes for the service. Further, the Commission finds that the mobile termination service is a wholesale service sold to consumers directly connected to other service providers. Hence, it is not sold as part of a bundle (or cluster) of retail mobile services such that provision of the mobile termination service is not constrained by competition for the provision of retail mobile services.

More specifically, the Commission finds that the termination services of individual mobile network operators are not substitutable for each other. This is the case irrespective of the size of individual mobile operators, or the type of network technology they employ. If an individual chooses to subscribe to Optus' GSM mobile phone network, other carriers whose subscribers want to call this individual on their mobile phone ultimately have no option but to seek interconnection with Optus' mobile network. That is, carriers cannot seek to have an alternative mobile network operator (such as Vodafone) ultimately terminate calls to consumers on Optus' network.<sup>7</sup> All calls to the Optus mobile subscriber must ultimately be terminated on Optus' mobile network.

---

<sup>7</sup> While the Commission acknowledges Vodafone could, via a transit arrangement, provide termination for carriers seeking to interconnect with Optus' GSM mobile telephony network, Vodafone would still, ultimately, need to seek termination of the call from Optus. Accordingly, the

The Commission has also considered whether other substitutable means of contacting a mobile phone user (such as calls to a fixed-line network, SMS messages, e-mail messages or calls using voice over Internet protocol technology (VoIP)) might be effective in acting as a constraint on the pricing decisions of providers of mobile termination services. In all cases, the Commission finds these potential substitutes to be lacking in that they either do not replicate the mobility characteristic key to the convenience of calling someone on a mobile phone (in the case of contacting mobile phone users on fixed-line, VoIP or e-mail technologies), and/or do not provide for sufficiently substitutable real time communications (in the case of e-mail and SMS communications). Hence, the Commission concludes that these alternative forms of communication are not sufficiently substitutable to constrain providers of mobile termination services.

The Commission has also considered whether mobile phone users might be able to constrain the pricing decisions of mobile network operators. In this regard, some parties to this inquiry have argued that competition for mobile subscribers constrains mobile operators' pricing decisions for the mobile termination service. The Commission believes, however, that mobile phone users do not have sufficient incentive to base their subscription decisions on which mobile network charges the lowest prices for mobile termination services. This is because mobile phone users do not pay for calls made to them, and therefore do not pay for the mobile termination service. That is, under current retail billing arrangements, it is the 'calling party' who pays for most calls to mobile phone users. This billing arrangement is reflected at the wholesale level where it is the carrier whose consumer initiates a call that pays for termination of calls to mobile phone users. Hence, receivers of mobile phone calls do not have to pay for calls made to them, and do not need to pay for the mobile termination service. Accordingly, mobile phone users generally have no incentive to insist that the mobile network they subscribe to sets lower mobile termination charges.<sup>8</sup> The Commission therefore believes mobile network operators are unlikely to be constrained in their pricing decisions for the mobile termination service by potential subscribers to their network.

Accordingly, the Commission finds that all mobile operators – irrespective of their size – have market power when it comes to terminating calls on their network. In turn, the Commission believes this gives mobile operators the ability to raise the price of the mobile termination service above its underlying cost of production.

### **Pricing structures likely to emerge in markets for mobile termination and retail mobile services**

Not only do mobile network operators have the ability to raise the price of mobile termination services above their underlying cost of production, the Commission

---

Commission believes that such transit arrangements do not overcome the control providers of mobile termination services have over access to essential infrastructure.

<sup>8</sup> The Commission notes exceptions to this can exist where individuals purchase mobile phones for close family members. The Commission expects this segment of the market is not, however, significant enough to constrain mobile operators' pricing of the mobile termination service. The Commission also believes that mobile operators are able to segment this portion of the market effectively through the use of 'on-net' call plans.

believes they also have an incentive to raise prices above cost (inclusive of a normal profit on infrastructure investments). By doing so, mobile operators generate greater-than-normal (or so-called 'economic') profits from providing mobile termination services.

Each mobile subscriber therefore brings with it a source of economic profits as it enables the mobile operator to charge above-cost prices for calls made to him/her. As a result of this, the Commission believes that mobile operators may, depending on the level of competition they face when attracting subscribers to their network, seek to attract more subscribers to their networks 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 mobile termination services 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 mobile termination services to retail mobile subscribers. The Commission believes, therefore, that mobile operators may determine a cross-subsidised structure of prices with higher-than-cost prices for mobile termination services and below-cost prices for some retail mobile services.

These expectations are supported by market observations that mobile operators appear to be setting charges for the mobile termination service that are likely to be at least double the underlying cost of providing this service.<sup>9</sup> Further, in retail markets for mobile services, mobile subscribers are often offered free handsets, or subsidised subscription charges, although there is no evidence that mobile retail pricing as a whole produces insufficient revenue to cover costs.

### **Impact on the state of competition in the market within which FTM services are provided**

One implication of this pricing structure is that above-cost prices for mobile termination services increase the costs of an essential input for providers of FTM calls. That is, in order for providers of FTM calls to provide this service to their consumers, they need – because of the CPP billing arrangement referred to above – to pay a fee to mobile operators to terminate FTM calls. By raising the price of mobile termination services above cost, mobile operators increase the cost to providers of FTM calls above the underlying cost of production for this service. In turn, this raises the price of FTM calls.

In addition to this, setting above-cost prices for mobile termination services allows vertically-integrated fixed and mobile network operators to raise the cost of rival FTM service providers that only operate fixed line networks in a way vertically-integrated operators are not subjected to. That is, fixed-line only operators (such as AAPT, Primus, MCI, PowerTel, MCT etc.), must pay above-cost prices to terminate *all* FTM calls. Vertically-integrated carriers such as Telstra and Optus, however, will only need to pay above-cost prices for calls that terminate on other mobile carriers'

---

<sup>9</sup> This is based on observations that the average price charged for the mobile termination service is 22.5 cents per minute, while estimates of the underlying cost of the service range between approximately 5-6 and 12 cents per minute. Full specification of the range of cost estimates can be found in s. 5.3 of this report.

networks. For all FTM calls that terminate on a vertically-integrated carrier's mobile network, the vertically-integrated carrier will only face the actual cost of terminating these calls.

This raising of costs for fixed-line only operators creates a number of effects in the downstream market within which FTM calls are provided:

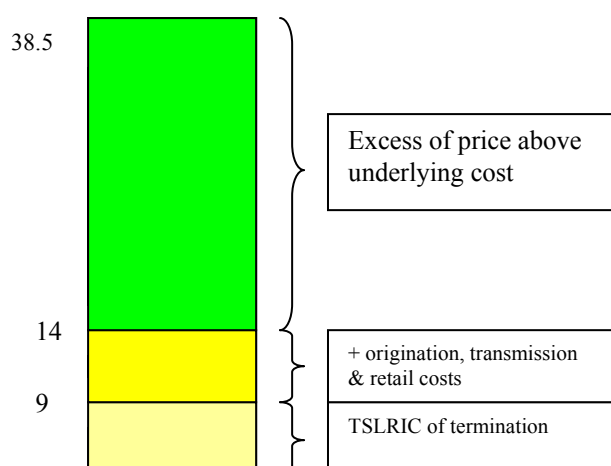
1. It eases competitive pressures in the market within which FTM calls are provided. In turn, this provides suppliers of FTM services with the ability to maintain prices for this service well in excess of its underlying cost of production;
2. It gives rise to allegations of anti-competitive conduct against some vertically-integrated carriers operating in the corporate segment of the market, where it has been alleged by a number of parties that vertically-integrated carriers are offering FTM calls to corporate consumers at prices below the price they charge their competitors for terminating FTM calls on their mobile networks; and
3. It gives rise to concerns from some smaller mobile operators that vertically-integrated carriers are bundling together FTM call offers to corporate customers with retail mobile service offers in a way that mobile-only operators cannot compete with.

Overall, evidence collected by the Commission shows that the price of FTM calls also appears to be at least double their underlying cost of production. That is, while the average price of FTM calls is around 38.5 cents per minute, the average underlying cost is likely to be in the order of 10-17 cents per minute (depending on assumptions regarding the cost of mobile termination services).<sup>10</sup>

The disparity between average price and underlying cost for FTM calls (using medium case estimates of the cost of the mobile termination service in the order of around 9 cents per minute) is illustrated in Figure 3 below.

---

<sup>10</sup> This figure is based on a range of estimates of the total service long-run incremental cost (TSLRIC) of providing mobile termination services in the range of roughly 6 to 12 cents per minute (see note 9). The Commission notes that this range is consistent with estimates of the TSLRIC of providing the mobile termination service based on data collected by the Commission as part of its Regulatory Accounting framework (RAF). In addition to this, the Commission has conservatively estimated that the TSLRIC of providing the other elements of a FTM call are likely to be in the order of 5 cents per minute.



**Figure 3 – The excess of the average price for FTM calls above underlying cost**

In addition to this, observations coming out of past annual reports prepared by the Commission on price changes for telecommunications services in Australia (the Division 12 Reports) show that the price of FTM calls has declined more slowly than that of other fixed-line services over recent years (despite significant increases in volume and hence expected cost savings due to economies of scale).<sup>11</sup> These observations are set to emerge even more starkly in the forthcoming Division 12 report for the 2002-03 financial year which is likely to show the average price of FTM calls fell by less in real terms across all consumer groups during 2002-03. Further, initial results show the average price paid by residential consumers for FTM calls is likely to have increased in real terms over this period.

Overall, the analysis in Chapter Five leads the Commission to believe that the market within which FTM calls is provided is far from effectively competitive. This is leading to higher-than-cost prices for FTM calls and, consequently, substantial losses in consumer welfare. Relative to a competitive market where the price of FTM calls would be expected to more closely resemble an underlying cost of around 14 cents per minute, the Commission estimates that the current average price of 38.5 cents per minute is reducing consumption of FTM calls by around 2.2 Billion minutes per annum.

<sup>11</sup> For instance, in previous years, the average price paid for FTM services declined by 7.9 per cent in 1999-00, 6.2 per cent in 2000-01 and 3.2 per cent in 2001-02. This compares with the average price paid for national long distance (NLD) calls which fell by 27.0 per cent, 17.2 per cent and 15.3 per cent over the same periods. Telstra's Annual Report for 2002-03 also showed that while revenue from FTM calls is now greater than that for NLD calls, the number of FTM call minutes was less than half that for NLD services. This implies a yield for FTM call minutes more than double that of NLD calls.

### **Impact of declaration on competition in the market within which FTM services are provided**

By continuing to declare a mobile termination service, the Commission believes competition in the market within which FTM services are provided can be improved. This would be the case if a pricing principle can be devised for the mobile termination service that ensures a closer association of the price of the service with its underlying cost of production. In doing so, the ability of vertically-integrated fixed and mobile carriers to raise the costs of rival providers of FTM services that do not operate mobile networks would be eroded, and consequent reductions in the price of the FTM service could be expected. Removing the ability of vertically-integrated fixed and mobile network operators to raise rivals costs could also help to remove their ability to leverage their market power in the market within which FTM services are provided into the retail mobile services market.

While some parties are currently concerned that reductions in mobile termination rates may not be 'passed-through' to FTM consumers in the form of lower prices for FTM services, the Commission expects that increased competition in the market within which FTM services are provided would create pressures on all providers of this service to pass-through reductions in the price of the mobile termination service to end-users.

### **Impact of declaration in the market within which retail mobile services are provided**

As indicated in Chapter Five, the Commission believes 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 is because there continues to be a high level of concentration at the carrier network level (where the combined share of Telstra, Optus and Vodafone is greater than 97 per cent of the market); barriers to entry into the market (associated with national coverage and sunk costs) remain high; and established mobile operators (and in particular Telstra and Optus) appear to be earning profits well in excess of those the Commission would expect in competitive markets for these services. In addition to this, the Commission notes that reductions in the prices paid for retail mobile services appear to have slowed in recent years, with some indication that prices may even have increased, on average, during the 2002-03 financial year.

Despite this, the Commission expects the greatest competitive benefit from continued declaration of the service is likely to occur in the market within which FTM services are provided. That said, the Commission expects that declaration has the potential to help promote competition in the retail mobile services market to the extent it serves to overcome the ability established mobile operators might have to frustrate new entrants interconnecting with established networks on reasonable terms and conditions. This issue is discussed in more detail in Chapter Six. The Commission also believes that declaration of the mobile termination service will lead to a more efficient use of and investment in the infrastructure used to provide retail mobile services. This is discussed in detail in Chapter Seven.

Whilst declaration may be expected to put in place pre-conditions that help to promote competition in the retail mobile services market, the Commission recognises that declaration is likely to affect different mobile operators in different ways. In this regard, the Commission has considered arguments from Vodafone that substantial reductions in the price of the mobile termination service might weaken its competitive position as compared to vertically-integrated fixed and mobile operators. This is because Vodafone believes there is no imperative on fixed carriers to 'pass through' lower prices for the mobile termination service to consumers of FTM services. Accordingly, Vodafone is concerned that if it is required to lower mobile termination rates, its 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, Vodafone believes a reduction in mobile termination prices will reduce the revenues of mobile operators 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 mobile operators have the ability to raise the price of mobile termination services above their underlying cost of production, and that this enables them to earn economic profits when providing this service. Accordingly, all mobile operators are likely to experience reduced economic profit from the provision of mobile termination services if a pricing principle is established that generates a closer association of prices and costs for the mobile termination service.

Whether or not particular mobile operators will suffer a proportionately larger reduction in overall revenues is, however, less clear. On the one hand, the Commission believes that mobile-only operators may, in the short-term, experience a relatively larger proportionate reduction in revenues from mobile termination services 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 declaration of the mobile termination service 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 mobile termination service could lead to even greater absolute reductions in the price of FTM 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. Hence, as competition in the market within which FTM services are provided becomes more intense, it is possible that reductions in the price of mobile termination services 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 mobile termination and FTM revenues of vertically-integrated operators reducing by relatively more than the mobile termination revenues of mobile-only operators. Accordingly, the relative impact of continued declaration on mobile-only and vertically-integrated fixed and mobile operators is uncertain and heavily dependent on the extent of FTM pass-through and the enhancement of competition in the retail FTM market.

More importantly, the Commission notes that, while the mobile termination service continues to be priced above its underlying cost of production, the service should continue to be a source of economic profit for mobile operators. This is especially the case given reductions in the price of the mobile termination service should lead to an increase in demand for the service and a consequent reduction in the unit costs of providing the service as economies of scale are generated.

Further, the overall profitability of mobile operators is affected by a number of factors other than simply the revenue they receive from the mobile termination service. Accordingly, the profitability of mobile network operators will depend on a number of factors in addition to regulation of the mobile termination service, including:

- the extent to which reductions in the price of the mobile termination service are offset by changes to the price of retail mobile services;<sup>12</sup> and
- the growth of other sources of revenue for mobile network operators, such as data, messaging and international roaming services.

The Commission notes that whilst revenue from termination of voice services on mobile networks is a significant component of the overall revenue of mobile network operators, its importance is expected to gradually decline into the future. This is supported by recent observations that the revenue growth of data, messaging and other value-added services for mobile operators appears to be exceeding that from mobile termination services. For example, Telstra's annual reports indicate that revenues from these sources grew by 94 per cent from \$339 million to \$657 million over the two years from 2000-01 to 2002-03, while the Commission's Regulatory Accounting Framework (RAF) data indicate revenues from termination and origination increased by a substantially smaller amount over the same period. The Commission also notes that the revenue Telstra earns from data and other value-added services is now substantially greater than that which it earns from the mobile termination and origination services. While the Commission does not have access to comparable figures for Vodafone, information available to it suggests that, although Vodafone is more heavily reliant on wholesale revenues than Telstra, a similar pattern of revenue change would have occurred.

### **Will continued declaration promote any-to-any connectivity?**

The Commission believes that any-to-any connectivity can be promoted through declaration of the mobile termination service. New entrants to the mobile services market rely on their ability to interconnect with all mobile network operators so that they can provide a full end-to-end service to consumers that subscribe to their

---

<sup>12</sup> That is, mobile operators may, depending on the state of competition in the retail mobile services market, seek to recover some of these lost profits by raising the price of some retail mobile services. The Commission notes, however, that market inquiries reveal this has not, to date, been the general response of UK mobile operators to the first round of regulated reductions in the price of the mobile termination service in 2003. Indeed, market inquiries indicate that the introduction of 3G mobile services in the UK has created competitive pressures that have led 2G mobile operators to absorb decreases in mobile termination service prices without consequent increases in the price of retail mobile services. It remains to be seen whether mobile operators in the UK continue with this practice as additional scheduled reductions in the price of the mobile termination service are implemented.



network. That is, Hutchison would find it very difficult to market its new third generation (3G) mobile network products to consumers if it was unable to interconnect with existing mobile networks for the provision of traditional voice services. Consumers would not be satisfied if they could not make voice calls to (and receive voice calls from) other consumers on other mobile networks.

Having control over access to all consumers directly connected to their networks gives established mobile operators the ability to frustrate a new entrant's ability to offer a full end-to-end service to its subscribers. Without declaration, there may be an incentive for established operators to frustrate the ability of new entrants to interconnect with their networks as this would reduce the competitive threat posed by new entrants. Declaration can help overcome this potential threat by giving new entrants a right of access to mobile termination on existing carriers' networks, and the ability to seek Commission arbitration of the terms and conditions of this access if needed. It is chiefly for this reason that the mobile termination service was originally deemed to be declared in July 1997. It is also a key reason why the Commission believes the mobile termination service should be defined to apply to termination of both FTM and MTM calls.

#### **Will declaration promote efficient use of, and investment in, infrastructure?**

Overall, the Commission believes that continued declaration of a mobile termination service would be likely to encourage economically efficient use of the infrastructure used to provide telecommunications services.

As indicated above, the Commission believes a pricing structure is likely to emerge across mobile termination, FTM and retail mobile services that involves:

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

The Commission believes the broadly cross-subsidised nature of this pricing structure is likely to emerge irrespective of the effectiveness of competition in the retail mobile services market.

In turn, this pricing structure is likely to generate direct efficiency losses in the market within which FTM services are provided. This is likely to be in the form of less than efficient consumption of retail FTM services. Based on plausible assumptions relating to the elasticity of demand for FTM calls and the starting quantities, prices and cost for FTM calls, the Commission estimates this direct efficiency loss could be as high as \$282 million per annum. Fuller specification of the basis of this estimate is outlined in Chapter Seven. Further, the Commission expects this pricing structure will generate greater than efficient consumption of retail mobile subscription services, and a consequent efficiency loss in the market for retail mobile services.

A number of arguments have been advanced by interested parties that attempt to defend the efficiency of this pricing structure. These include justifications based on fixed-line network externality, mobile externality and Ramsey pricing arguments.<sup>13</sup> As outlined in detail in Chapter Seven, the Commission believes none of these arguments justify revocation of the existing declaration of the mobile termination service. In particular, no party has provided any evidence to suggest mobile operators have sufficient incentive, in the absence of declaration of the mobile termination service, to efficiently internalise any such externalities or that the current configuration of prices for retail mobile and mobile termination services is Ramsey efficient.

The Commission is also concerned that the cross-subsidised pricing structure that exists with respect to the mobile termination, FTM and retail mobile services is likely to be creating distortions to efficient investment decisions by vertically-integrated, mobile and fixed-line only operators. In particular, the Commission is concerned that:

- above cost pricing of the mobile termination service is reducing demand for mobile termination (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 provide 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.

Whilst some parties have argued that regulation of the mobile termination service will reduce mobile operators' incentives to invest in 3G mobile technologies, this has not been the case in the UK where regulation of the service has not prevented mobile operators such as Vodafone committing to developing 3G mobile networks. In

---

<sup>13</sup> The fixed-line network externality is the benefit fixed-line consumers enjoy from greater subscriptions to mobile phone networks. That is, the greater the number of mobile subscribers, the greater the benefit for fixed-line consumers of FTM calls from having a greater number of mobile subscribers they can reach with FTM calls. The existence of such an externality has been argued by Optus to justify higher than cost FTM termination charges. Mobile network externalities refer to the benefits existing mobile subscribers receive from additional mobile subscribers. That is, it is often argued in economics that the value of a network is enhanced by additional subscribers to it. This is because it increases the potential number of mobile phone users existing mobile subscribers can contact using their mobile phone. Some parties have argued the existence of such externalities justifies a cross-subsidised pricing structure for mobile termination and retail mobile services. Ramsey pricing concepts address situations where a number of services share common costs of production. Hence, if all these services were priced only at their attributable costs, these common costs would fail to be recovered. Ramsey pricing concepts therefore deal with finding a configuration of prices that would ensure that these common costs are recovered in the least distortionary way. Under a Ramsey configuration, the structure of prices across a collection of services sharing common costs would ensure higher proportionate mark-ups above attributable costs for those services with relatively inelastic demands (i.e. relatively lower demand responsiveness to changes in price), according to the inverse-elasticity or 'Ramsey-Boiteux' rule. Some parties have argued mobile termination services should be priced well in excess of cost due to assertions of its relatively inelastic own-price elasticity of demand.

Australia, investment in the infrastructure used to provide mobile telephony services has been strong in recent years, despite declaration of this service. The Commission also notes that Vodafone has announced it is investing in the development of a network capable of providing 3G mobile services by 2005.<sup>14</sup>

Overall, therefore, the Commission believes continued declaration of the mobile termination service can help to:

- promote competition in markets for listed services;
- achieve any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encourage the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied.

Accordingly, the Commission believes continued declaration of the mobile termination service is in the LTIE.

### **Should the service description be varied?**

Throughout the course of this inquiry, the Commission has considered whether the mobile termination service description needs to be varied to include termination of:

- voice services on 2.5G and 3G networks; and
- data services on mobile telephony networks.

The Commission believes that many of the market power concerns raised in relation to the termination of voice services on GSM and CDMA networks identified above are likely to exist with regard to the provision of voice termination services on more advanced 2.5G and 3G networks. The Commission also considers that the termination of voice services on mobile networks is a sufficiently mature service such that it should be regulated irrespective of the network type over which it is provided.

The Commission is not convinced, however, that the provision of data services – and especially those provided on 2.5G and 3G networks – is sufficiently mature such that the Commission should seek to regulate termination of these services at this point in time. However, the Commission does believe that many of the market power concerns that currently exist with regard to the termination of voice services on mobile networks may arise with regard to the provision of termination of data services on mobile networks in the future. Accordingly, the Commission will continue to monitor the development of these services with a view to determining whether declaration of data termination services on mobile telephony networks is in the LTIE at some later point in time.

---

<sup>14</sup> Communications Day, *Vodafone 3G Launch a Strategy Reversal*, 16 February 2004, [www.commsday.com.au](http://www.commsday.com.au).

## **Appropriate pricing principles for the mobile termination service**

When the Commission released its GSM termination pricing principles in July 2001, it identified concerns that the existing price of GSM mobile termination services were likely to be well in excess of costs, and that this was generating outcomes in a number of markets that were not in the LTIE. However, the Commission considered, at the time, that adoption of a cost-based pricing principle – such as the total service long run incremental cost (TSLRIC) methodology that it uses for determining access prices for other declared services – was not appropriate in this instance. Rather, the Commission sought to develop a relatively light-handed pricing principle that would ensure a gradual reduction in the price of the mobile termination service towards costs over time.

In particular, the Commission determined that a retail benchmarking pricing principle was most appropriate for the GSM termination service. Under this approach, the price of GSM termination services for each carrier would be required to decrease in line with reductions in its average price of a bundle of retail mobile services. At the time it released this pricing principle, however, the Commission noted its success would depend, to a large extent, on expected reductions in the average price of the bundle of retail mobile services. Without this, there would be no pressure on providers of mobile termination services to reduce the price of their service towards cost. In order to measure the success of this pricing principle, the Commission indicated it would monitor changes in the retail price of a bundle of GSM services over an initial two-year implementation period, with a view to reviewing the suitability of the pricing principle in two-years time.

The final results of the Commission's retail benchmarking monitoring program are outlined in Chapter Eight of the Draft Report. In summary, the results indicate that the retail price of the bundle of GSM mobile services has not declined as much as the Commission initially expected. Indeed, in some periods, the average price of the bundle of retail GSM services for some carriers has increased. In short, this implies the pricing principle would not, had it been applied in an arbitral setting, be guaranteed to have led to significant reductions (if any) in the price of mobile termination services towards cost.

Accordingly, the Commission's monitoring of the retail benchmarking pricing principle has led it to believe that a more direct mechanism is needed to generate a closer association of the price of the mobile termination service with its underlying cost of production. That said, the Commission still has concerns about the suitability of it adopting a TSLRIC pricing principle for this particular service at this point in time. This is because the Commission believes adoption of such a pricing principle would be time consuming and costly to implement, and immediate adoption could generate significant 'rate shock' into the mobile industry. Were adoption of a TSLRIC pricing principle to be immediately implemented in July 2004, it is likely the price of the mobile termination service would fall very substantially in a short space of time. This would be likely to generate significant and potentially harmful disruption to the operations and planning of a number of telecommunications carriers.

As a result of these concerns, the Commission has decided it would be more appropriate to determine a 'target' price for the mobile termination service based on

benchmarking against a range of estimates of the cost of providing the mobile termination service. Using benchmark estimates outlined in Chapter Eight, the Commission has settled on a conservative target price of 12 cents per minute for the mobile termination service. This figure lies at the top of a range of cost estimates for the mobile termination service in a number of overseas jurisdictions. The Commission also notes that information it has collected under the Regulatory Accounting Framework (RAF) indicates the TSLRIC (inclusive of a contribution towards organisational-level costs) of providing the mobile termination service in Australia is likely to lie within a range of cost estimates collected from overseas jurisdictions. 12 cents per minute is also significantly higher than other corroborative sources of information the Commission has available to it regarding the cost of the mobile termination service.

Rather than require an immediate reduction in the price of this service, however, the Commission has determined that this target price should be approached gradually over a succession of periods. Based on market inquiries, the Commission understands the lowest available price in the market for the mobile termination service is 21 cents per minute. However, the Commission understands that some access seekers may be paying as high as c-i-c cents per minute for this service. The Commission believes an appropriate starting point for its gradual reduction in the price of the mobile termination service should be the lowest available price in the market. Starting from an initial price of 21 cents per minute on 1 July 2004, the Commission believes a steady 3 cents per minute reduction in the price of the mobile termination service should follow on 1 January in each of the next three years. This would ensure the target price of 12 cents per minute for the mobile termination service is reached gradually by January 2007.

### **Draft Decision**

The Commission has formed a draft view that declaration of a varied mobile termination service would be in the LTIE, and is therefore appropriate under Part XIC of the Act. More specifically, the Commission believes the existing declaration of the mobile termination service should be varied to include voice services terminating on 3G mobile networks. The full varied service description can be found at Appendix A of this report.

Further, the Commission has reached a draft decision that its pricing principles for the mobile termination service should also be amended. In particular, the Commission believes a new pricing principle should be adopted that ensures the price of the mobile termination service gradually decreases towards a conservative benchmarked target of 12 cents per minute over a staged adjustment period commencing on 1 July 2004 and concluding on 1 January 2007. Details of this pricing principle can be found in Chapter Eight of this report.

# 1. Introduction

In March 2003, the Australian Competition and Consumer Commission (the Commission) announced that it would conduct a wide ranging review of a number of issues associated with the regulation of the mobile services industry.

One aspect of this inquiry concerns whether or not the Commission should extend the expiry date for the declaration of the Domestic GSM and CDMA terminating access service, or to allow this declaration to expire. The expiry date for this declaration is 30 June 2004. This aspect of the inquiry also concerns whether or not this declaration should be varied or revoked or replaced by new declarations. The Commission is conducting this aspect of the inquiry pursuant to section 152ALA of the *Trade Practices Act 1974* and Part 25 of the *Telecommunications Act 1997*.

Further, the Commission indicated that the review would also consider what form of regulation – and, in particular, what form of pricing principle – would be most appropriate for this service should it find that continued or varied declaration of a mobile termination service was appropriate.

In order to advance and inform this and other aspects of the review, and in accordance with Division 3 of Part 25 of the *Telecommunications Act 1997*, the Commission released a discussion paper on 24 April 2003.

In response to the Discussion Paper, the Commission received 27 submissions from interested parties. A list of these parties is contained in Appendix B of this report.

As part of this process, the Commission also held two public forums to aid consideration of the central issues in this review. These were held in Melbourne on 29 August 2003 and in Sydney on 11 September 2003.

Based on its investigations thus far, the Commission has formed a draft view that declaration of a varied mobile termination service would be in the long-term interests of end-users (LTIE), and is therefore appropriate under Part XIC of the Act. More specifically, the Commission believes the existing declaration of the mobile termination service should be varied to include voice services terminating on third generation (3G) mobile networks. The full varied service description can be found at Appendix A of this report.

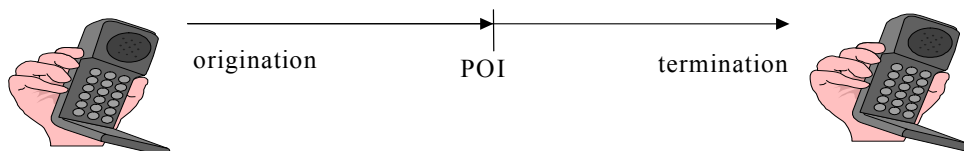
Further, the Commission has reached a draft decision that its pricing principles for the mobile termination service should also be amended. In particular, the Commission believes a new pricing principle should be adopted that ensures the price of the mobile termination service gradually decreases towards a benchmarked target of 12 cents per minute over a staged adjustment period commencing on 1 July 2004 and concluding in 1 January 2007. Details of this pricing principle can be found in Chapter Eight of this report.

## 1.1 Background

### The mobile termination service

The mobile termination service 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.<sup>15</sup>

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. Origination, termination and the POI are illustrated below.



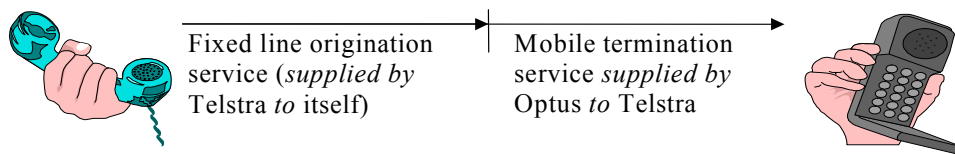
*Figure 1.1 - Use of the mobile termination service to supply a mobile-to-mobile call*

Under current commercial arrangements between network owners, the network owner that originates the call 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 or the ‘termination’ model.

An example of how the mobile termination service is used in the provision of a fixed-to-mobile (FTM) call is depicted in the diagram below. In this example, Telstra purchases access to Optus’ mobile termination service in order to provide a call from a Telstra fixed-line end-user to an Optus mobile end-user. Telstra would then bill its directly-connected consumer for providing a FTM call service.

---

<sup>15</sup> A full service description for the mobile termination service for the purposes of this inquiry can be found at Appendix A of this report.



**Figure 1.2 - Use of the mobile termination service to supply a fixed-to-mobile call**

Mobile termination is therefore an essential input into the provision of calls to mobile phone users where the mobile phone user is on a separate 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. It is also a key element in the provision of calls that terminate on 2.5G and third generation (3G) mobile networks.<sup>16</sup>

### **Declaration**

Under the Act, declaration of a service creates a requirement for those carriers supplying the service (known as “access providers”) to provide the service, upon request, to other service providers (known as “access seekers”).<sup>17</sup> In doing so, the access provider must take all reasonable steps to ensure that the technical and operational quality of the service is equivalent to that which the access provider provides to itself.<sup>18</sup>

Declaration ensures service providers have access to the inputs they need to supply competitive communications services to end-users. The terms and conditions of supply for a declared service can be agreed through commercial negotiations. If the access provider or access seeker cannot agree on the terms and conditions of supply, either party can seek Commission arbitration of disputes over access terms and conditions for the service. Where a relevant access undertaking (approved by the Commission) exists, an arbitration determination made by the Commission must not be inconsistent with that undertaking.

### **The Commission’s approach to regulating this service to date**

In 1997, the GSM<sup>19</sup> termination service was deemed to be declared under section 39 of the *Telecommunications Act 1997* and Part XIC of the Act. At that time, the

<sup>16</sup> 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.

<sup>17</sup> Act para. 152AR(3)(a).

<sup>18</sup> Act para. 152AR(3)(b).

<sup>19</sup> The first European digital standard developed to establish cellular compatibility throughout Europe. GSM operates at the 900 and 1800 MHz band.



Commission considered that the GSM termination service should be deemed for the purpose of achieving any-to-any connectivity between end-users of a GSM network and end-users of any other telephony network.<sup>20</sup>

In subsequent years, a number of disputes arising from disagreements over the terms and conditions of access to the GSM termination service were notified to the Commission under Part XIC of the Act. As a consequence of its arbitration of these disputes, the Commission developed pricing principles for the GSM termination service which it released in July 2001. The Commission determined that it would adopt a retail benchmarking pricing methodology in its arbitration of access disputes in relation to the service. Details of this particular pricing principle are outlined in Chapter Eight of this report. After the release of this pricing principle, all remaining GSM access disputes were withdrawn. While the Commission was not required to apply its pricing principles to resolve any of these disputes, the Commission believes the issuing of pricing principles served a useful purpose in helping parties resolve disputes in relation to the mobile termination service. The Commission indicated at the time that it would review the success of the methodology after two years.

In March 2002, the Commission released a report examining a proposed variation to the GSM termination service declaration to make it technology neutral. The report resulted in the definition of the service being varied to include termination on Code Division Multiple Access (CDMA)<sup>21</sup> mobile networks.

As a result of the variation to the service declaration, the Commission released a report, in September 2002, setting out its pricing methodology for the varied GSM and CDMA mobile termination service. The Commission concluded that the retail benchmarking approach was still the most appropriate pricing methodology for use in arbitrating disputes in relation to the varied mobile termination service.

This current review fulfils the commitment made by the Commission in its July 2001 report on the pricing principle for the GSM termination service to review the success of the mobile termination pricing principle after two years. Separately, following changes made to the Act in December 2002, the mobile termination service is due to expire at the end of June 2004. This Draft Report fulfils the Commission's obligation under section 152ALA of the Act to consider:

- whether to extend or further extend the expiry date of the declaration;
- whether to revoke the declaration;
- whether to vary the declaration;
- whether to allow the declaration to expire without making a new declaration under section 152AL; and
- whether to allow the declaration to expire and then to make a new declaration under section 152AL.

---

<sup>20</sup> ACCC, *Deeming of Telecommunications Services*, 30 June 1997, p.19.

<sup>21</sup> A digital wireless telephony transmission technique. CDMA allows multiple frequencies to be used simultaneously (spread spectrum). CDMA operates in the 800 MHz band.

## **1.2 Structure of this report**

The remainder of this report is structured as follows:

- Chapter Two of this report sets out the timetable and processes for the remainder of the public inquiry;
- Chapter Three discusses the relevant legislative framework for the inquiry;
- Chapter Four discusses the service description;
- Chapter Five discusses whether continued declaration would promote competition in telecommunications markets;
- Chapter Six discusses whether continued declaration will promote any-to-any connectivity between end-users;
- Chapter Seven discusses whether continued declaration will promote efficient investment in and efficient use of the mobile termination service;
- Chapter Eight discusses pricing principles;
- Appendix A provides the varied mobile termination service description; and
- Appendix B contains a list of those interested parties who have provided submissions on the Discussion Paper.

## **2. Timetable and process for the public inquiry**

In accordance with Division 3 of Part 25 of the Telecommunications Act 1997, the Commission invites written submissions from interested parties on its draft decision by Friday, 30 April 2004.

Following consideration of these issues, the Commission aims to publish a final report setting out its final decision in June 2004.

In the event that the Commission is satisfied that it would be in the LTIE to continue to declare a mobile termination service, the declaration would be made shortly after the release of the final report.

As indicated in Chapter One of this report, the Commission's consideration of the mobile termination service is part of a broader Mobile Services Review. The Commission intends to release draft reports outlining its findings in relation to its consideration of other mobile services in separate reports. The Commission intends to release these draft reports during April 2004.

Further details of the Commission's approach to declaration inquiries is outlined in its paper *Telecommunications services – Declaration provisions, July 1999*.

### **2.1 Making submissions to the public inquiry**

The Commission seeks comment from all industry participants, other stakeholders and the public more generally. It encourages these groups to consider the key issues of this Draft Report, and make submissions to the Commission to further assist it in determining whether to continue to declare a mobile termination service.

To foster an informed and robust consultative process, the Commission proposes to treat all submissions as non-confidential, unless the submissions indicate otherwise. Unless the author of a submission requests that the submission be kept confidential, written submissions given to the Commission will be made available to interested parties upon request. If submissions contain confidential information, then the author of the submission should provide the Commission with a copy that is marked confidential and a masked copy of the submission. This masked copy may be made available to interested parties upon request.

Submissions can be addressed to:

Richard York  
Director – Regulatory  
Telecommunications  
Australian Competition and Consumer Commission  
GPO Box 520J  
Melbourne VIC 3001

In addition to a hard copy, people making submissions are encouraged to provide an electronic copy of the submission to [richard.york@acc.gov.au](mailto:richard.york@acc.gov.au).

Enquiries can be made to Richard York on (03) 9290 1883 or Adrian Trantino on (03) 9290 1987.

## **3. Legislative background**

### **3.1 The access regime**

Part XIC of the Act sets out a telecommunications access regime. The Commission may determine that particular carriage services and related services are declared services. Once a service is declared, carriage service providers (CSPs) are required to comply with standard access obligations in relation to any such service that they supply. The standard access obligations facilitate the provision of access to declared services by service providers in order that service providers can provide carriage services and/or content services. In addition to its standard access obligations, a carrier, CSP or related body must not prevent or hinder access to a declared service.

### **3.2 Maintaining, varying or revoking an existing declaration**

Section 152ALA of the *Trade Practices Act 1974* ('the Act') requires the Commission to review each declaration within the year preceding its expiry date.

The purpose of the review, as set out in section 152ALA(7) of the Act, is to determine whether or not the expiry date for the declaration should be extended, or whether a declaration should be allowed to expire. The review is also to determine whether or not a declaration should be varied or revoked or a new declaration made. An extension to an expiry date, or the expiry date for a new declaration, may not be for a period exceeding five years.

Pursuant to section 152ALA of the Act, the Commission must:

- hold a public inquiry in accordance with Part 25 of the *Telecommunications Act 1997* on whether to extend the expiry date for the declaration, vary or revoke the declaration, or allow the declaration to expire (with or without a new declaration being made); and,
- prepare and publish a report setting out the Commission's findings.

The Commission's powers to extend the expiry date for a declaration, vary or revoke a declaration, or allow a declaration to expire (with or without a new declaration being made), are set out in sections 152AL, 152ALA and 152AO of the Act. In exercising these powers, the Commission is required to consider the effect on the LTIE of carriage services and services provided by means of carriage services.

### **3.3 The Commission’s approach to the LTIE test**

The Commission must decide whether declaring the service would promote the LTIE of carriage services, or of services supplied using carriage services (‘listed services’). Section 152AB of the Act provides that, in determining whether declaration promotes the LTIE, regard must be had only to the extent to which declaration is likely to result in the achievement of the following objectives.

- promoting competition in markets for listed services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied.

Section 152AB also provides further guidance in interpreting these objectives. The three objectives are discussed below.

#### **Promoting competition**

Subsections 152AB(4) and (5) provide that, in interpreting this objective, regard must be had to, but is not limited to, the extent to which the arrangements will remove obstacles to end-users gaining access to listed services. The Explanatory Memorandum to Part XIC of the Act states that:

...it is intended that particular regard be had to the extent to which the...[declaration]... would enable end-users to gain access to an increased range or choice of services.<sup>22</sup>

#### **Any-to-any connectivity**

Subsection 152AB(8) provides that the objective of any-to-any connectivity is achieved if, and only if, each end-user who is supplied with a carriage service that involves communication between end-users is able to communicate, by means of that service, or a similar service, with other end-users whether or not they are connected to the same network.

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

Subsections 152AB(6) and (7) provide that, in interpreting this objective, regard must be had to, but not limited to, the following:

- whether it is technically feasible for the services to be supplied and charged for, having regard to:
  - the technology that is in use or available;

---

<sup>22</sup> *Trade Practices Amendment (Telecommunications) Act 1997 (Cth)* explanatory memorandum.

- whether the costs that would be involved in supplying, and charging for, the services are reasonable; and
- the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks;
- the legitimate commercial interests of the supplier or suppliers of the service, including the ability of the supplier or suppliers to exploit economies of scale and scope; and
- the incentives for investment in the infrastructure by which the services are supplied.

These matters are interrelated. In many cases, the LTIE may be promoted through the achievement of two or all of these criteria simultaneously. In other cases, the achievement of one of these criteria may involve some trade-off in terms of another of the criteria, and the Commission will need to weigh up the different effects to determine whether declaration promotes the LTIE. In this regard, the Commission will interpret long-term to mean the period of time necessary for the substantive effects of declaration to unfold.

### **3.3.1 Promoting competition**

The first criterion requires the Commission to make an assessment of whether or not declaration would be likely to promote competition in the markets for listed services. The concept of competition is of fundamental importance to the Act and has been discussed many times in connection with the operation of Part IIIA, Part IV, Part XIB and Part XIC of the Act.

In general terms, competition is the process of rivalry between firms, where each market participant is constrained in its price and output decisions by the activity of other market participants. The Trade Practices Tribunal (now the Australian Competition Tribunal) stated that:

In our view effective competition requires both that prices should be flexible, reflecting the forces of demand and supply, and that there should be independent rivalry in all dimensions of the price-product-service packages offered to consumers and customers.

Competition is a process rather than a situation. Nevertheless, whether firms compete is very much a matter of the structure of the markets in which they operate.<sup>23</sup>

Competition can provide benefits to end-users including lower prices, better quality and a better range of services over time. Competition may be inhibited where the structure of the market gives rise to market power. Market power is the ability of a firm or firms profitably to constrain or manipulate the supply of products from the levels and quality that would be observed in a competitive market for a significant period of time.

---

<sup>23</sup> *Re Queensland Co-operative Milling Association Ltd; Re Defiance Holdings Ltd* (1976) ATPR 40-012, 17,245.

The establishment of a right for third parties to negotiate access to certain services on reasonable terms and conditions can operate to constrain the use of market power that could be derived from the control of these services. Accordingly, an access regime such as Part IIIA or Part XIC addresses the *structure* of a market, to limit or reduce the sources of market power and consequent anti-competitive conduct, rather than directly regulating conduct which may flow from its use, which is the role of Part IV and Part XIB of the Act. Nonetheless, in any given challenge to competition, both Parts XIB (or IV) and XIC may be necessary to address anti-competitive behaviour. To assist in determining the impact of potential declaration on downstream markets, the Commission will first need to identify the relevant market(s) and assess the likely effect of declaration on competition in each market.

Section 4E of the Act provides that the term ‘market’ includes a market for the goods or services under consideration and any other goods or services that are substitutable for, or otherwise competitive with, those goods or services. The Commission’s approach to market definition is discussed in its *Merger Guidelines*, June 1999 and is also canvassed in its information paper, *Anti-competitive conduct in telecommunications markets*, August 1999.

The second step is to assess the likely effect of declaration on competition in each relevant market. As noted above, subsection 152AB(4) requires that regard must be had to the extent to which declaration will remove obstacles to end-users gaining access to listed services.

The Commission considers that denial to service providers of access to necessary upstream services on reasonable terms is a significant obstacle to end users gaining access to services. In this regard, declaration can remove such obstacles by facilitating entry by service providers, thereby providing end users with additional services from which to choose. For example, access to a mobile termination service may enable more service providers to provide fixed to mobile calls to end-users. This gives end-users more choice of service providers.

Where existing market conditions already provide for the competitive supply of services, the access regime should not impose regulated access.<sup>24</sup> This recognises the costs of providing access, such as administration and compliance, as well as potential disincentives to investment. Regulation will only be desirable where it leads to benefits in terms of lower prices, better services or improved service quality for end-users that outweigh any costs of regulation.

In the context of considering whether declaration will promote competition, it is therefore appropriate to examine the impact of the proposed service description on each relevant market, and compare the state of competition in that market before and after the proposed declaration. In examining the market structure, the Commission considers that competition is promoted when market structures are altered such that the exercise of market power becomes more difficult; for example, because barriers to entry have been lowered (permitting more efficient competitors to enter a market and thereby constrain the pricing behaviour of the incumbents) or because the ability of firms to raise rivals’ costs is restricted.

---

<sup>24</sup> *Trade Practices Amendment (Telecommunications) Act 1997 (Cth)* explanatory memorandum.



### 3.3.2 Any-to-any connectivity

The objective of ‘any-to-any’ connectivity is achieved if, and only if, each end-user of a service that involves communication between end-users is able to communicate, by means of that service or a similar service, with every other end-user even where they are connected to different telecommunications networks.<sup>25</sup> The reference to ‘similar’ services in the Act enables this objective to apply to services with analogous, but not identical, functional characteristics, such as fixed and mobile voice telephony services or Internet services which may have differing characteristics.

The any-to-any connectivity requirement is particularly relevant when considering services that involve communications between end-users.<sup>26</sup> When considering other types of services (such as carriage services that are inputs to an end-to-end service or distribution services such as the carriage of pay television), the Commission considers that this criterion will be given less weight compared to the other two criteria.

### 3.3.3 Efficient use of, and investment in, infrastructure

The third objective under section 152AB is to encourage the economically efficient use of, and economically efficient investment in, the infrastructure used for the supply of carriage services.

Economic efficiency has three components.

- Productive efficiency refers to the efficient use of resources within each firm such that all goods and services are produced using the least cost combination of inputs.
- Allocative efficiency refers to the efficient allocation of resources across the economy such that the goods and services that are produced in the economy are the ones most valued by consumers. It also refers to the distribution of production costs amongst firms within an industry to minimise industry-wide costs.
- Dynamic efficiency refers to the efficient deployment of resources between present and future uses such that the welfare of society is maximised over time. Dynamic efficiency incorporates efficiencies flowing from innovation leading to the development of new services, or improvements in production techniques.

The Commission will need to ensure that the access regime does not discourage investment in networks or network elements where such investment is efficient. However, where it is inefficient to duplicate investment in existing networks or network elements, the access regime may play an important role in ensuring that existing infrastructure is used efficiently.

---

<sup>25</sup> Act s. 152(AB)(8).

<sup>26</sup> *Trade Practices (Telecommunications) Amendment Act 1997* (Cth) explanatory memorandum.

Paragraph 152AB(6)(a) requires the Commission to have regard to a number of specific matters in examining whether declaration will lead to achievement of this objective. Some of these are considered below.

### **The technical feasibility of supplying and charging for particular services**

This incorporates a number of elements, including the technology that is in use or available, the costs of supplying, and charging for, the services and the effects on the operation of telecommunications networks.

In many cases, the technical feasibility of supplying and charging for particular services given the current state of technology may be clear, particularly where there is a history of providing access. The question will be more difficult where there is no prior access, or where conditions have changed. Experience in other jurisdictions, taking account of relevant differences in technology or network configuration, will be helpful. Generally the Commission will look to an access provider to demonstrate that supply is not technically feasible.

Most of the issues under this criterion are discussed in Chapter Four, which considers the service description and technical feasibility of providing access to a mobile termination service.

### **The legitimate commercial interests of the supplier or suppliers, including the ability of the supplier to exploit economies of scale and scope**

A supplier's legitimate commercial interests encompass its obligations to the owners of the firm, including the need to recover the cost of providing services and to earn a normal commercial return on the investment in infrastructure. The Commission considers that allowing for a normal commercial return on investment will provide an appropriate incentive for the access provider to maintain, improve and invest in the efficient provision of the service.

A significant issue relates to whether or not capacity should be made available to an access seeker. Where there is spare capacity within the network, not assigned to current or planned services, allocative efficiency would be promoted by obliging the owner to release capacity for competitors.

Paragraph 152AB(6)(b) also requires the Commission to have regard to whether the access arrangement may affect the owner's ability to realise economies of scale or scope. Economies of scale arise from a production process in which the average (or per unit) cost of production decreases as the firm's output increases. Economies of scope arise from a production process in which it is less costly in total for one firm to produce two (or more) products than it is for two (or more) firms to each separately produce each of the products.

Potential effects from access on economies of scope are likely to be greater than on economies of scale. A limit in the capacity available to the owner may constrain the number of services that the owner is able to provide using the infrastructure and thus prevent the realisation of economies of scope associated with the production of multiple services. In contrast, economies of scale may simply result from the use of

the capacity of the network and be able to be realised regardless of whether that capacity is being used by the owner or by other carriers and service providers. Nonetheless, the Commission will assess the effects of the supplier's ability to exploit both economies of scale and scope on a case-by-case basis.

### **The impact on incentives for investment in infrastructure**

Firms should have the incentive to invest efficiently in infrastructure. Various aspects of efficiency have been discussed already. It is also important to note that while access regulation may have the potential to diminish incentives for some businesses to invest in infrastructure, it also ensures that investment is efficient and reduces the barriers to entry for other (competing) businesses or the barriers to expansion by competing businesses.

There is also a need to consider the effects of any expected disincentive to investment with any anticipated increases in competition to determine the overall effect of declaration on the LTIE. The Commission will be careful to ensure that services are not declared where there is a risk that incentives to invest may be dampened, such that there is little subsequent benefit to end-users from the access arrangements.

### **3.4 Pricing principles for declared services**

As a result of changes to the telecommunications provisions of the Act in September 2001, the Commission is now obliged to determine pricing principles (PP) relating to services that it declares.<sup>27</sup> The PPs must be in writing and must be made at the same time as, or as soon as practicable after, the Commission declares a service or varies a declared service.

The PPs may also contain price-related terms and conditions relating to access to the declared service. 'Price related terms and conditions' is defined to mean terms and conditions relating to price or a method of ascertaining price.

Before developing PPs, the Commission must publish a draft version, invite public submissions on the draft, and consider any submissions received. The Commission must then publish the PPs (in such manner it thinks appropriate). The Commission must have regard to the PPs if there is an arbitration in respect of the declared service.

The practical effect of these changes for the Commission is that the Commission should either call for submissions on PPs as part of a public discussion paper on a proposed declared service or conduct a separate public consultation on PPs as soon as possible after a service is declared. Although the Commission is not bound to follow the PPs in any arbitration, in practice it would unless there was good reason not to.

---

<sup>27</sup> Act s. 152AQA.

## 4. Service description

A fundamental step in determining whether a given service should be declared is to establish how the service in question should be described. This gives interested parties a basis point from which to discuss whether the service should be declared, and gives parties a firm idea of the service that access providers would be required to supply were the service to be declared. It also assists the Commission by giving it a field within which it can meaningfully analyse whether declaration of the service, so defined, would promote the LTIE.

As the note to sub-section 152AL(3) states:

Eligible services may be specified by name, by inclusion in a specified class or in any other way.<sup>28</sup>

The Explanatory Memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996 adds:

In making a declaration of an eligible service, the ACCC will have a high level of flexibility to describe the service, whether it be in functional or any other terms. This will enable, where appropriate, the ACCC to target the access obligations (which are triggered by a declaration) to specific areas of bottleneck market power by describing the service in some detail, or to more broadly describe a service which is generally important (such as services necessary for any-to-any connectivity).<sup>29</sup>

### 4.1 Principles for developing a service description

When developing the description of an eligible service, the Commission is guided by the object of Part XIC of the Act, which is to promote the LTIE. To this end, the Commission utilises the following principles:

- In most cases, some degree of technical specification is required. However, the Commission's preference is to describe the service in terms which are as functional as possible. In such a situation, the declaration will leave the access provider with flexibility to determine the most efficient way of supplying the service. This also provides more flexibility to the access seeker in the type of service that can be provided within the ambit of the declared service and avoid distorting technological or innovative developments. Technical terms may, however, be appropriate where a functional description would provide scope for ambiguity which could be exploited by the access provider in a manner that hinders access.
- The eligible service should be described in a manner which provides sufficient clarity for application of the standard access obligations.

---

<sup>28</sup> See *Acts Interpretation Act 1901* (Cth) s. 33(3A).

<sup>29</sup> Trade Practices (Telecommunications) Amendment Bill (1996) explanatory memorandum, item 6, proposed s. 152AL.

- The service should be one for which it is technically feasible to supply and charge. In addition, the service should be one that a potential access provider is supplying to itself or others.

## 4.2 Background

When the GSM termination service was deemed to be declared in 1997, it was described as:

an access service for the carriage of telephone calls (i.e. voice, data over the voice band) from a POI to B-parties assigned numbers from the GSM number ranges of the Australian Numbering Plan and directly connected to the AP's network.<sup>30</sup>

As a result of the Commission's inquiry into making GSM service declarations technology neutral, in March 2002 the service description was broadened to include CDMA. The declared GSM and CDMA termination service is now described as:

an Access Service for the carriage of telephone calls (i.e. voice, data over the voice band) from a POI to B-parties assigned numbers from the GSM and CDMA number ranges of the Telecommunications Numbering Plan 1997 and directly connected to the AP's GSM or CDMA network.<sup>31</sup>

The Commission noted in its 2003 Mobile Services Review Discussion Paper that it would assess whether the service description should be varied in any way. In particular, it indicated it is important to consider whether the service description should be expanded to include termination of services on 3G mobile networks. The Commission also noted, however, that the service declaration was varied only twelve months earlier, in March 2002.

## 4.3 Views of interested parties

In response to the discussion paper, interested parties expressed a range of views on the most appropriate description for the mobile terminating access service.

The mobile network operators with significant market shares (namely, Telstra, Optus and Vodafone) argue against extending the service description to 3G services. These parties argue that as 3G services are nascent in character, any access regulation at this stage would be premature.

Telstra argues that premature regulation of 3G services will undermine incentives for investment in 3G,<sup>32</sup> whilst Vodafone argues that carriers will be unable to set rates for termination on 3G networks at markedly different levels to those charged for termination on 2G networks, and that regulation should not be imposed until access problems in relation to these services arise.<sup>33</sup>

---

<sup>30</sup> ACCC, *Deeming of Telecommunication Services*, 30 June 1997, p. 47.

<sup>31</sup> ACCC, *Variation to make the GSM Service Declarations Technology-Neutral*, March 2002, p. 58.

<sup>32</sup> Telstra, *Telstra's Supplementary Response to the Discussion Paper of the ACCC*, July 2003, p. 7.

<sup>33</sup> Vodafone, *Submission to the ACCC Mobile Services Review 2003*, 13 July 2003, p. 11.

Although agreeing that 3G services are nascent in character, Optus also comments that to the extent that 3G networks are used in the supply of voice and basic data services, there should be no regulatory differentiation between 2G and 3G services.<sup>34</sup>

Hutchison supports changing the service description so that it is technology neutral with regard to terminating voice calls on mobile networks. It argues that the case for regulating a service terminating voice calls on a network using 3G technology is the same as that for regulating the current mobile termination access service.<sup>35</sup> This approach is also favoured by Mr Adam Lucas Johns.<sup>36</sup>

AAPT expresses the view that the current service description is technology neutral and therefore encompasses 2G, 2.5G and 3G technology.<sup>37</sup>

Other industry and consumer telecommunications bodies and groups commenting on the issues (that is, the Australian Telecommunications Users Group (ATUG),<sup>38</sup> the Small Enterprise Telecommunications Centre Limited (SETEL)<sup>39</sup> and the Competitive Carriers Coalition (CCC)<sup>40</sup>) favour not extending the service description to encompass services supplied using 3G networks, at this point in time. These parties suggest, instead, that the Commission should maintain a ‘watching brief’ on the development of 3G services, including data services. This position is also supported by the fixed-line only operator, MCI.<sup>41</sup>

With respect to content services provided on 3G networks, Hutchison and AAPT express concern that given content is likely to be a significant input to 3G data services, there is a strong possibility that control over premium content will become a tool for restricting competition in the 3G data services sub-market.<sup>42</sup>

Vodafone, however, suggests that there are benefits to be gained from the vertical integration of network services, user applications and content development. It also considers that concerns relating to the integration of content and other services would be more appropriately dealt with through the competition provisions of the Act.<sup>43</sup>

---

<sup>34</sup> Optus, *Submission to the ACCC on Mobile Services*, June 2003, p. 59.

<sup>35</sup> Hutchison 3G Australia, *Submission to the ACCC Mobile Services Review 2003 (public version)*, 16 June 2003, p. 7.

<sup>36</sup> Adam Lucas Johns, *Submission for ACCC Mobile Services Review 2003*, 13 June 2003, p. 3.

<sup>37</sup> AAPT, *Submission by AAPT Limited*, 13 June 2003, pp. 5-6;

<sup>38</sup> ATUG, *ATUG's Submission to the ACCC Mobile Services Review 2003 Discussion Paper*, p. 11.

<sup>39</sup> SETEL, *Submission by the Small Enterprise Telecommunications Centre Limited*, June 2003, p. 5.

<sup>40</sup> CCC, *Submission to the ACCC Mobile Services Review 2003*, p. 14.

<sup>41</sup> MCI, *Comments of MCI Regarding the ACCC Discussion Paper on Mobile Services Review 2003*, 13 June 2003, pp. 15-16.

<sup>42</sup> Hutchison 3G Australia, *Submission to the ACCC Mobile Services Review 2003 (public version)*, 16 June 2003, pp. 32-33; AAPT, *Submission by AAPT Limited*, 13 June 2003, p. 20.

<sup>43</sup> Vodafone, *Supplementary Submission to the ACCC Mobile Services Review 2003*, 2 July 2003, p. 13.

## 4.4 Commission view

The Commission has identified the following main issues emerging out of the submissions and market inquiries in respect of the service description:

- whether the existing service description should be extended from termination of services on 2G mobile networks to include termination of services of services on 2.5G and 3G networks; and
- whether the service description should apply to FTM or MTM termination services, or both.

Each of these issues is addressed in turn below.

### 4.4.1 Extension of service description from termination of services on 2G mobile networks to include termination of services on 2.5G and 3G networks

In determining whether the current service description for the mobile termination service should be extended to include services that can be supplied on the new 2.5G and 3G mobile technologies, the Commission will examine the following aspects of mobile services:

- the technical differences between 2G, 2.5G and 3G services;
- the extent of take-up of the different types of mobile services available using each technology and the scope for bottlenecks in the supply of each type of service; and
- the delivery of voice and data services on each type of network.

#### Differences between 2G, 2.5G and 3G services

2G and 2.5G mobile services are provided on GSM and CDMA networks in Australia. Telstra provides services nationally on both types of networks, whilst Optus and Vodafone provide services nationally on their own GSM networks. Hutchison provides 2G services in Melbourne and Sydney using its CDMA network under the 'Orange' brand name, with a roaming agreement with Telstra allowing for Orange customers to roam onto Telstra's CDMA network in other areas in Australia.

Hutchison also provides mobile services on its 3G network, '3', in Sydney, Melbourne, Perth, Adelaide, Brisbane and the Gold Coast. It roams onto Vodafone's GSM network in all other areas.

2G mobile services are narrowband services which are typically regarded as providing voice services and basic data services such as SMS.

3G mobile services, by way of contrast, provide for wideband communications capable of conveying multimedia, video and other capacity-demanding applications.<sup>44</sup> This widening of the bandwidth enables greater volumes of data to flow to mobile receivers allowing full broadband services such as full colour screens, video conferencing and Internet access.

A key characteristic of 3G traffic is that it does not solely originate from traditional circuit-switched networks, but includes content sourced from the Internet and other packet-based networks. 3G devices are capable of transmitting text, digitised voice, video and multimedia.

3G network development has been based on the International Mobile Telecommunications 2000 Standard. This standard was developed by the International Telecommunications Union (ITU) to ensure interoperability with existing mobile technology standards including GSM and CDMA. As such, it has always been recognised that 3G networks will terminate 2G services and vice versa with respect to common services.

3G services are supplied using the CDMA 2000 technology (based on the original CDMA technology) and W-CDMA technology, which is based on GSM technology.

In between 2G and 3G technologies is what is referred to as 2.5G services. These services tend to provide greater functionality through higher data rates. These technologies use the same spectrum as 2G networks and therefore are considered to be upgrades to the 2G GSM and CDMA networks. The 2.5G technologies use 1×RTT, GPRS and EDGE technologies. Whilst these technologies allow for services similar to those supplied using 3G technologies to be provided on the '2G spectrum', services that require high data transmission rates, such as video calls, are not possible. For example, full Internet graphics may not be available to the end-user of 2.5G services but a simpler set of graphics may be possible.

Essentially, 2.5G and 3G networks allow for the introduction of new mobile services that, due to transmission capacity limitations, are not able to be offered using 2G GSM and CDMA networks. They are also, however, able to provide a range of existing mobile services that are provided on 2G networks, specifically, voice and SMS. Therefore, from a consumer's or end-user's point of view, 2.5G and 3G services are likely to appear as 'add-on' services to existing mobile services, rather than as entirely new communications services.

#### The extent of consumer take-up of the different types of services available for each technology and the scope for bottlenecks

The level of consumer acceptance of the different services supplied using mobile technologies varies greatly between the services. For some services, such as voice calls, the market is relatively mature, whereas others such as video-calls are very much in their infancy.

---

<sup>44</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 86.



The Commission believes that an examination of the:

- extent of take-up of each service; and
- scope for bottlenecks in the supply of each of these services.

will assist in determining the appropriate form any service description should take. This exercise may also assist in avoiding excessively broad regulation of mobile services.

These issues are considered for the voice services, SMS and other data services below.

#### *Voice services*

The provision of voice services appears to be relatively mature. Recent data shows that average revenue per user (ARPU) for voice for each operator has been decreasing since 1998, suggesting that the provision of the services has already reached a level of maturity.<sup>45</sup> The minutes of use (MOU) per subscriber per month for Telstra, from the first quarter of the 2000/01 financial year to the third quarter of the 2002/03 financial year also show a declining usage profile, prior to stabilising in the past financial year.<sup>46</sup> This too supports the conclusion that the voice market has largely matured. The high penetration rate for mobile subscriptions (71.9 – 73.0 per cent of the population),<sup>47</sup> coupled with the fact that voice services were the first major services provided on mobile networks, tends to suggest that there is a strong level of consumer acceptance of the services and that they cannot be considered to be in the developmental stages.

As Vodafone notes in its submission to this inquiry,<sup>48</sup> voice calls made on 2.5G and 3G networks will not appear any different to consumers than those provided on 2G networks.

Similarly, the Commission considers that, in the absence of evidence to the contrary, the nature of the supply of 3G voice services is largely the same as the supply of 2G voice services. In both cases, the CPP model is used, where the network owner that originates the call will 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 price it charges its directly connected end-user for providing the call.

Accordingly, if the Commission finds the market for the supply of 2G voice termination services is an essential service with bottleneck characteristics, it follows that the same reasonably applies to 2.5G and 3G voice services.

---

<sup>45</sup> ABN AMRO, *Australian Telecommunications Services (2004)*, p. 31.

<sup>46</sup> JB Were, *Australian Telecommunications Sector Review 2003*, May 2003, p.22.

<sup>47</sup> ABN AMRO, *Australian Telecommunications Services (2004)*, 31; ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 85.

<sup>48</sup> Vodafone, *Submission to the ACCC Mobile Services Review 2003*, 13 July 2003, p. 11.

A declaration of voice termination services that applies only to 2G networks will allow the operators of 2.5G and 3G networks to price their voice termination services without the regulatory constraint imposed on operators of 2G networks. For reasons discussed in Chapters Five-to-Seven below, this is unlikely to be in the LTIE.

On the basis of the similarity in the consumption and supply of voice services on 2G, 2.5G and 3G networks, the Commission's preliminary view is that any service description of a mobile termination service should be varied to include the termination of voice services on all mobile networks.

#### *Short Messaging Services (SMSs)*

SMS is the first of a growing range of data services that may be terminated on mobile networks. Data services are generally characterised by asymmetric traffic flows, which may provide an incentive for mobile operators to use control over termination of these services to increase revenue (through data termination prices). As mobile data services mature (including SMSs), the number of complaints in relation to interconnection with mobile networks terminating data services may increase.

These services were first introduced in 1997 but did not become popular until 2000. Since then, the total number of SMS messages, the number of short messages per user per annum and the ARPU per month for this service for each carrier have all increased significantly.<sup>49</sup>

The Commission considers it is unclear whether SMS is fully mature at this point in time. This is based on the continued growth being seen in this market. The Commission also notes the absence of any pattern of complaints to it regarding interconnection with mobile networks in order to provide termination of SMS services, to date.

The Commission favours a light-handed regulatory approach with respect to the regulation of immature services. Accordingly, the Commission considers that declaration of a mobile termination service that includes the termination of SMS services is unlikely to result in a benefit that is in the LTIE at this time.

Therefore, the Commission's preliminary view is that any service description of a mobile termination service should not include termination of SMSs on mobile networks.

#### *Other data services*

Other data services such as videoconferencing and multimedia message services (MMSs) that are starting to become available with the commencement of operation of 2.5G and 3G networks are generally regarded as immature services.

Although there have been no complaints to the Commission to date regarding access to termination services for 3G data services, there is a risk, as noted above, that the

---

<sup>49</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 89; ABN AMRO, *Australian Telecommunications Services (2004)*, p. 31.

asymmetric traffic flows may provide an incentive for mobile operators to use their control over termination to increase revenue in the future.

One aspect of the new data services supplied on 3G networks that has been identified in a number of submissions as a possible bottleneck for the future has been the content supplied to end-users as the primary component (from a consumer perspective) of the new data services.<sup>50</sup>

The Commission considers that the potential for content to become a bottleneck depends upon the ability of one operator to gain exclusive control of premium content. This suggests that a necessary characteristic of such premium content is that it must be available from only one source, and that that source is willing to supply the content through only one distributor (or to only one operator).

Whilst this problem has been seen, to some extent, in the Australian Pay TV industry, the use of content to prevent a loss of consumers to competitors has been largely unsuccessful in the Internet Service Provider (ISP) industry to this time.

In the Australian Pay TV industry, Foxtel had control over premium content such as movies and sports which made the subscription packages offered by its rivals relatively unattractive to consumers. It is arguable this tended to limit competition in the Pay TV market and that this gave Foxtel an opportunity to use its control over content to restrict competition in the industry. However, private agreements between Pay TV providers, and the Commission's acceptance of undertakings by Foxtel pursuant to section 87B of the Act, to provide for access to this premium content by competitors, have addressed this problem to some degree.

In contrast, the lack of success of the 'walled garden'<sup>51</sup> approach by ISPs can be attributed to the difficulty in developing content that is sufficiently unique and popular to make other content available to subscribers of competing ISPs unmarketable, and the sheer range of content applications and information on the Internet with which the walled garden must compete. Walled garden content represents a miniscule fraction of all Internet content and most subscribers appear unwilling to forgo that wealth of information by spending their online time in 'the garden'. However, the Commission notes that Telstra's recent announcement that online AFL content will be exclusive to BigPond subscribers (without limiting the other online content available to subscribers) may presage greater use by ISPs of control over premium content to compete in the provision of Internet services.

The Commission considers that it is unclear at this point in time what direction 2.5G and 3G content applications will take. Whilst 3G technology is likely to allow a greater range of Internet applications and content to become available to mobile subscribers, it may also be the case that what is regarded as 'broadcast content' today (such as sports and movie content) will prove a significant driver of 3G development.

---

<sup>50</sup> Hutchison 3G Australia, *Submission to the ACCC Mobile Services Review 2003 (public version)*, 16 June 2003, p. 25; AAPT, *Submission by AAPT Limited*, 13 June 2003, p. 20.

<sup>51</sup> A 'walled garden' refers to the development of content by an ISP specifically for subscribers to the ISP. The theory behind walled gardens is that if the content in the walled garden is sufficiently compelling subscribers will seek to only subscribe to the ISP with control of that content and competition from other ISPs is thereby avoided.

In any event, the possible solutions to addressing problems of market power in relation to 2.5G and 3G content do not appear to include declaration at this point in time. Declaration can only be made in relation to an eligible carriage service and it is unlikely that access to content could be considered to be a carriage service.

The Commission agrees with the CCC's characterisation of 3G data services as 'developing'. The Commission considers that access to termination of data services (including the content of these services), should be monitored to determine if regulatory intervention is necessary.

#### Delivery of voice and data services on each type of network

Mobile services are typically divided into two categories: voice services and data services.

The introduction of 3G technologies has the potential to blur these categories from a technical perspective.

All current mobile technologies (2G, 2.5G and 3G) transport traffic in the core network as digital packets. Accordingly, voice could be considered to be a data service in this context.

However, a distinction has been made to date by virtue of the use of reserved capacity to handle voice traffic. The packet routing for all mobile services is controlled by circuit switching technology which ensures that the order and route of each packet is the same and is determined by the network.

For 2G services, once packets reach the Mobile Switching Centre (MSC), the data packets are reassembled and forwarded to the mobile handset as a normal voice call. In contrast, packets of data (including voice) are reassembled at the handset on 2.5G and 3G networks (that is, on GPRS, EDGE, 1×RTT and the 3G technologies).

However, the Commission considers that the distinction between voice services and data services remains important from a consumer perspective, at this point in time.

Hence, while the Commission believes a distinction can be made between voice and data services at this time, the introduction of 2.5G and 3G services may blur the distinction between voice and data services in the future. Should this occur, the Commission may need to reconsider the suitability of a service description that focuses only on termination of voice calls on mobile networks.

#### **4.4.2 Differences between FTM and MTM termination services**

When two market operators enter interconnection agreements for the termination of mobile services on each other's network, it is possible that the termination charges paid by each operator to the other cancel out. This 'cancelling out' is also quite possible within the market as a whole, where all operators are interconnected.

In respect of traffic symmetry, GSM terminating access interconnection arrangements are not in the public domain. However, an examination of probability theory indicates that call minutes between mobile networks are likely to be zero (or close to zero).<sup>52</sup>

This is unlikely to be the case with regard to FTM services, however, where fixed only, mobile only and integrated network operators interconnect with each mobile operator. In this situation, it is unlikely that traffic flows between each operator will be equal, due to differing market shares of the various operators and differing levels of demand for FTM and mobile-to-fixed (MTF) services. The differences in the retail prices of FTM and MTF calls are also likely to contribute to different demand elasticities and therefore traffic flows.

Further, even if traffic flows between fixed and mobile networks were symmetrical, settlement arrangements would still not cancel each other out, as the cost of fixed termination is regulated at a little over 1 cent per minute, in contrast to FTM termination, which the Commission understands is currently charged at more than 20c per minute. Under these conditions, call minutes from a fixed network operator to a mobile network would need to be about 20 times higher than call minutes from a mobile network operator to a fixed network before the fixed operator could recover its mobile termination costs.

To date, complaints about the consequences of high termination rates have largely come from non-integrated providers of FTM voice services, as well as consumers of these services. Such complaints have not been made in relation to termination services for mobile to mobile services.

However, as discussed previously in the context of the level of consumer acceptance of voice services, the Commission considers that the nature of the supply of FTM termination on mobile networks is largely the same as the supply of MTM termination on mobile networks. Therefore, if the Commission finds the supply of either FTM termination services or the supply of MTM termination services is an essential input with bottleneck characteristics, then it follows that the supply of the other is also an essential input with bottleneck characteristics.

Further, for reasons outlined in Chapter 6 below, inclusion of mobile termination services for voice calls originating on mobile networks also is likely to promote the achievement of any-to-any connectivity.

The Commission considers that any service description for a mobile termination service should provide for access to termination of calls originating on both fixed-line and mobile networks.

---

<sup>52</sup> AUSTEL, *Interconnection Model: Multi-Service Deliverer Environment – Final Report*, March 1995.

## **4.5 Conclusion**

The Commission's preliminary view is that the service description should include FTM and MTM voice termination services regardless of the technology used, but should not include data termination services.

The full text of the Commission's proposed service description is set out in Appendix A to this Report.

For the sake of clarity, the Commission notes that it does not intend the service description of the domestic mobile termination service to include services that are supplied pursuant to international or domestic roaming agreements. The service description set out in Appendix A applies to voice calls that are received by end-users (B-parties) that are directly connected to an Australian carrier's digital mobile network (the access provider).

## **5. Will declaration promote competition in telecommunications markets?**

As indicated in Chapter Three, section 152AB of the Act provides that, in determining whether declaration promotes the LTIE, regard must be had only to the extent to which declaration is likely to result in the achievement of the following objectives:

- promoting competition in markets for listed services;
- achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
- encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied.

Chapters Five-to-Seven address each of these objectives in turn.

### **5.1. The Commission’s approach to determining whether declaration will promote competition in telecommunications markets**

The Commission believes that declaration can help promote competition in telecommunications markets under a range of different circumstances. A commonly recognised way is where specific market characteristics mean it is more efficient for there to be only one provider of a given telecommunications service. In these circumstances, however, it may be that there is scope for competition to occur in downstream and/or vertically related markets. Without access to the vertically related service, however, carriers in vertically related markets will be unable to provide a final service to end-users. Further, to the extent that access seekers will compete with vertically integrated access providers in downstream markets, the terms and conditions of such access can impact on the ability of access seekers to compete in these markets. In these circumstances, declaration can help promote competition in relevant markets by ensuring service providers in these markets can gain access at appropriate prices to essential ‘natural monopoly’ inputs.

The Commission notes, however, that declaration can also help promote competition in situations where there may be a number of potential access providers. This can be the case for interconnected telecommunications networks where consumers choose to be directly connected to the network of a given access provider. In these circumstances, service providers may have no choice but to seek access to the network(s) of the end-users which their customers choose to call. Hence, even though there may be a number of networks that provide access to their own networks, a given access provider may still have control over access to an essential facility. This can be the case if other service providers’ customers seek to make calls to end-users subscribed to the access provider’s network.

Where access providers have control over access to essential facilities, a key question for the Commission is whether or not unregulated market forces would generate

outcomes that would be likely to promote competition. This is particularly an issue in vertically related markets where the ability to acquire access, and the terms and conditions under which this access is provided, can have marked effects on the state of competition in downstream markets.

Under the Act, declaration of a service can promote competition for the provision of listed services by mandating access to those services that are supplied in vertically related markets. Further, under certain circumstances, the Act enables the Commission to set terms and conditions for access to these services. In turn, this can help ensure that outcomes in one market (the market in which the “eligible service” is supplied) do not prevent the development of competition in other related markets.

In most cases, the markets most likely to be affected by declaration are the market(s) for downstream services rather than the market in which the eligible service is supplied (where these markets are separate). This reflects a key rationale for access to essential infrastructure – that of promoting more competitive downstream markets by achieving a supply of essential inputs at reasonable terms and conditions of access. In this regard, the aim of promoting the LTIE guides the Commission to be particularly mindful of the impact of declaration on the supply of services at the retail level.

In order to determine whether or not declaration is likely to promote competition in telecommunications markets, it is important for the Commission to first understand the existing state of competition in the market within which the eligible service is provided and all other related markets. To assess this, it is necessary in the first instance to assess the boundaries of, and state of competition within, the markets in which the eligible service and other related services are supplied.

Once the boundaries of the relevant markets have been identified, the Commission can then consider whether the state of competition in these markets will be enhanced by declaration of the eligible service. In this regard, a useful tool for the Commission to use when assessing whether declaration will promote each of the LTIE objectives is the future ‘with or without test’. Under this approach, the Commission considers whether competition in identified markets would be likely to be further promoted with declaration as opposed to a structure where the service was not declared. Only by understanding market dynamics and the current state of competition in these markets can a meaningful vision of the likely future state of competition be understood.

In assessing whether declaration of a mobile termination service is likely to promote competition, therefore, the Commission undertakes a three-stage analysis:

- first, those markets relevant to determining whether declaration will promote competition are identified;
- secondly, the current state of competition and the dynamics that operate within these markets is assessed; and
- thirdly, if the current state of competition in any of these markets is found to be less than effective, an assessment is made regarding the extent to which competition would be promoted, or be likely to be promoted, in the future by declaration of the eligible service.



Each of these stages is undertaken in turn below for the market(s) in which the eligible service and related services are provided.

## **5.2 What are the relevant markets?**

### **5.2.1 The Commission's approach to defining relevant markets**

The process of market definition involves identifying the sellers and buyers that effectively constrain the price and output decisions of firms supplying the service(s) under consideration.<sup>53</sup>

To begin the process of market definition for the eligible service, the Commission defines the service under consideration and the firm(s) supplying that service. In general, this involves identifying the access provider(s) and their supply of the eligible service. For related markets, the market definition process starts with the access seekers and providers and the related services that they would supply using the eligible service.

Once the relevant service and source(s) of supply have been identified, the market boundaries are then extended to include all other sources and potential sources of close substitutes with which the firm supplying the service would compete. In terms of section 4E of the Act:

... "market" means a market in Australia and, when used in relation to any goods or services, includes a market for those goods or services and other goods or services that are substitutable for, or otherwise competitive with, the first-mentioned goods or services.

As noted by the High Court:

This process of defining a market by substitution involves both including products which compete with the defendant's and excluding those which because of differentiating characteristics do not compete.<sup>54</sup>

The availability of close substitutes (on both the demand and supply sides) constrains the ability of suppliers to profitably divert prices or quality of service from competitive levels.

As the Tribunal commented in *QCMA*:

A market is the area of close competition between firms or, putting it a little differently, the field of rivalry between them.... Within the bounds of a market there is substitution - substitution between one product and another, and between one source of supply and another, in response to changing prices.... it is the possibilities of such substitution which set the limits upon a firm's ability to 'give less and charge more'.<sup>55</sup>

---

<sup>53</sup> See ACCC, *Anti-competitive Conduct in telecommunications markets – an Information Paper*, and ACCC, *Mergers Guidelines*, June 1999, for more detail on how the Commission undertakes the process of market definition.

<sup>54</sup> *Queensland Wire Industries Pty Ltd v. BHP Ltd* [1989] ATPR 40-925, 50008 (Mason CJ and Wilson J).

<sup>55</sup> *Re Queensland Co-operative Milling Association Ltd; Re Defiance Holdings Ltd (1976)* ATPR 40-012, 17,247.

Generally, a greater range of substitutes points to a broader market in which individual firms have less power, and consequently competition is more effective. Substitutability may be thought of in terms of a price elevation test: what would be the response on the demand side and the supply side to a relatively small percentage increase in the price of a firm's product?

...in determining the outer boundaries of the market we ask a quite simple but fundamental question: if the firm were to 'give less and charge more' would there be, to put the matter colloquially, much of a reaction?<sup>56</sup>

Where the relevant market should be delineated is a question of degree. The Tribunal stated in *Tooth & Tooheys*:

... all competition or substitution does not cease at the outer boundaries of the market; the economy as a whole is a network of substitution possibilities in consumption and production; competition is a matter of degree.<sup>57</sup>

Markets can be delineated in terms of their product, geographic, functional and temporal boundaries.

In identifying relevant markets, Part XIC of the Act does not require the Commission to take a definitive or determinative stance on market definition as may be the case in a Part IV or Part XIB case.<sup>58</sup> The Federal Court also endorsed this approach in its decision to uphold the validity of certain broadcasting access declarations by the Commission.<sup>59</sup>

Furthermore, over time, declaration itself might affect the dimensions of these markets, particularly in relation to the functional dimension. Accordingly, market analysis under Part XIC should be seen in the context of providing an analytical framework to examine how declaration would promote competition rather than in the context of developing 'all purpose' market definitions.

### **5.2.2 Defining the market in which the eligible service is supplied**

#### ***Views of interested parties***

Throughout the inquiry, interested parties have presented a broad range of views regarding the appropriate definition of the markets within which the eligible service, and other related services, are provided. With regard to the market(s) within which the eligible service is provided, the Commission finds it useful to distinguish between the views provided by interested parties on the following issues:

- What is the relevant product;
- What demand and supply-side substitutes exist for the relevant product;

---

<sup>56</sup> *Ibid.*, 17,247.

<sup>57</sup> *Re Tooth & Co. Ltd.; re Tooheys Ltd.* (1979) ATPR 40–113, 18,196–18,197.

<sup>58</sup> See ACCC, *Telecommunications services – Declaration provisions*, July 1999.

<sup>59</sup> *Foxtel Management Pty Ltd v Australian Competition & Consumer Commission* [2000] FCA 589.

- What are the functional dimensions of the market;
- What are the geographic dimensions of the market; and
- What are the temporal dimensions of the market?

The views of interested parties on each of these issues are set out in turn below.

*What is the relevant product?*

A key step in defining the product dimensions of the market is to first determine what the product itself is. In this regard, a number of parties are divided on the question of whether termination on a given mobile network should be considered as the relevant product from which to begin an assessment of the relevant product space for the market in which the eligible service is provided. While some parties subscribe to this view, others argue that mobile termination is provided as part of a broader bundle (or cluster) of services that also includes retail mobile services. In turn, these parties argue this broader mobile services bundle should be considered as the relevant product from which the Commission should begin its market definition analysis.

For instance, Frontier Economics (on behalf of Vodafone), argues that the mobile termination service is part of a cluster of mobile services because complementarities in demand and supply mean that mobile operators are only able to compete by providing the whole bundle of services.<sup>60</sup> Frontier Economics comments that:

Customers do not purchase only mobile termination or origination services, and nor do mobile network carriers sell only mobile termination or originating services as individual products at either a retail or a wholesale level.<sup>61</sup>

Similarly, Optus contends that the mobile termination service is more properly described as an ‘element’ of a mobile call. As a result of this, Optus believes it would be inappropriate for the Commission to conduct its market analysis by focusing on the mobile termination service in isolation of the broader inter-relationships between this and other mobile services. Optus considers such an approach would be far removed from the Commission’s previous analysis of the mobile services market where it found mobile termination and retail mobile services represented interdependent revenue streams from bundled services. Optus argues that:

Because of the interdependencies of the mobile revenue streams, Optus believes it would be inappropriate for the ACCC to consider that termination operates in its own market... Failure to consider the interdependencies will result in the inefficient pricing of mobile services generally... Furthermore, the value customers receive from mobile telephony cannot be assessed against the prices charged for the individual services.<sup>62</sup>

In contrast, however, some parties argue that mobile termination should not be considered as being provided as part of a bundle that includes retail mobile services

---

<sup>60</sup> Frontier Economics, *Market Definition Issues in the ACCC’s Mobile Service Review 2003*, June 2003, p. 6.

<sup>61</sup> *Ibid.*, p. 10.

<sup>62</sup> Optus, *Submission to the Australian Competition and Consumer Commission on Mobile Services*, June 2003, p. 56.

because termination is a wholesale service not paid for by mobile subscribers. That is, mobile termination is a wholesale service paid for by other telecommunications carriers who pass this cost on to their customers when they seek to make calls to a mobile subscriber. Hence, while mobile subscribers pay for a number of retail mobile services – such as subscription and calls originating on mobile networks – they do not pay for mobile termination services. In this regard, MCI contends that:

... a bundled product market can only exist when buyers purchase the products together and when there is a close functional correlation between these products.<sup>63</sup>

Similarly, AAPT argues that:

To begin with a mobile call, and to consider what may be substitutable with this service, as the Commission did in its 2001 Report, is to fail to reflect the actual situation in which mobile termination services are bought and sold in the market. Mobile termination is essentially a wholesale product – individual callers do not separately negotiate with mobile service operators for termination services; instead they rely upon their fixed-line or mobile service provider to negotiate for termination services. Mobile calls, on the other hand, are essentially a retail product – they are consumed by individual retail consumers.<sup>64</sup>

Accordingly, these parties argue that the relevant product should be termination on each individual mobile carrier's network.

*What demand and supply side substitutes exist for the relevant product?*

Once the relevant product is determined for the purposes of market definition analysis, the product dimensions of the market can then be expanded to include all other products or services that act as demand or supply-side substitutes for the relevant product. Clearly, parties' views on the relevant product influences their views on the demand and supply-side substitutes for this product.

Those parties that argue that the relevant product should be a mobile termination service on each individual mobile operator's network tend to argue there are no demand or supply-side substitutes for this product. For instance, with regard to the existence of supply-side substitutes for the mobile termination service on a given network, AAPT argues that:

...supply-side substitution would require that calls to a mobile customer could be terminated on a network other than the network to which the customer is subscribed for the purposes of making outbound calls. This does not and cannot, occur.<sup>65</sup>

Similarly, MCI argues:

...that there are no supply side substitutes for mobile termination services by a given mobile operator. It is impossible to substitute call termination on one network, because calls to a particular mobile network must be terminated on the network to which that user has subscribed.<sup>66</sup>

---

<sup>63</sup> MCI, *Comments of MCI Regarding the ACCC Discussion Paper on Mobile Services Review 2003*, June 2003, p. 8.

<sup>64</sup> AAPT, *Mobile Services Review 2003, Submission by AAPT Limited*, 13 June 2003, p. 9.

<sup>65</sup> *Ibid.*, p. 10.

<sup>66</sup> MCI, *op. cit.*, pp. 8-9.

With regard to demand-side substitutes, some parties considered what substitution options exist for a network operator seeking to purchase termination of calls to a particular mobile network. For such ‘wholesale’ transactions, MCI argues that:

An operator wishing to allow its customers to call users of any particular network has no alternative but to purchase termination services from that network. The termination services of other networks cannot be considered a substitute.<sup>67</sup>

Similarly, AAPT argues that:

In order to offer a viable service in any relevant retail telephony market, it is necessary to purchase termination services from each mobile service provider. The termination service of one mobile service provider will not prove an adequate substitute for the termination services of another; nor will any telephony service provide the necessary any-to-any connectivity.<sup>68</sup>

AAPT argues further, however, that consideration of demand-side substitutability is complicated by the need to recognise that demand for the mobile termination service is derived from retail consumers of calls to mobile subscribers. Accordingly, AAPT argues demand-side substitutability also needs to be considered from the perspective of two groups of retail consumers:

1. Those end-users seeking to make calls to mobile networks (the ‘A-party’ in calls to mobile networks); and
2. Those end-users choosing which mobile network to subscribe to (the ‘B-party’ in calls to mobile networks).

In this regard, AAPT argues that:

At the retail level, demand side substitution fails to provide a constraint on the pricing of termination services. Neither the A-party making the call nor the B-party receiving the call will constrain the price of termination services. For the A-Party, substitution possibilities are limited – while there are a number of different ways that a person can be contacted, it is nevertheless the case that other technologies do not provide significant substitution for mobile phones.<sup>69</sup>

Further, AAPT argues that not only are A-parties unable to substitute between calls to mobiles and other types of services in response to high prices for calls to mobile networks, A-parties are also unable to switch between different B-parties on the basis of higher termination charges. That is, AAPT argues that:

...even if the A-party is trying to call any B-party from a particular class – for instance, any plumber – the A-party is still unable to call the B-party whose network offers the lowest termination charge. This ignorance has only increased with the advent of mobile number portability, which removes the ability of A-parties to determine the mobile network on which their call is being terminated.<sup>70</sup>

---

<sup>67</sup> *Ibid.*, p. 8.

<sup>68</sup> AAPT, *op cit.*, p. 14.

<sup>69</sup> *Ibid.*, p. 11.

<sup>70</sup> *Ibid.*, pp. 12-13.

Similarly, Core Research (on behalf of Hutchison) argues that consumers are generally unaware of the specific network to which their calls to mobile networks are going to be terminated on. In turn, this limits consumers' ability to substitute away from calls to a particular mobile network if it chooses to raise the price of termination of calls on its network:

This effect, where a customer calling a mobile number cannot ex ante identify exactly which mobile network is associated with a particular mobile number, and so cannot identify the network that they are 'buying from,' is referred to as customer ignorance. Its implications are profound: even if fixed line networks passed through termination rates to fixed line customers, differential termination rates cannot be used as a locus of competition. In the end, customer ignorance will tend to drive the use of uniform charges for calls to mobiles as a differential charge will be of limited use to a consumer in choosing which network to make calls to.<sup>71</sup>

With regard to the ability of mobile subscribers to constrain the pricing of termination on mobile carriers' networks, AAPT argues that:

For the B-party, termination charges do not affect the purchasing decision, or do so only to a limited extent. The reason is that B-parties do not pay the termination charges. The limited exception to this is for closed user groups, where subscribers are as concerned about termination rates as they are about the price of making a phone call. However, as the Commission itself has recognised in its 2001 Report, the ability of mobile service providers to discriminate between closed user groups and other consumers by offering different prices for on-net and off-net termination reduces the effect of this possible source of substitution...<sup>72</sup>

On the basis of these views regarding the relevant product, and the absence of demand and supply-side substitutes for it, AAPT and MCI argue that termination on each mobile network represents an individual market of its own. In other words, AAPT and MCI subscribe to a 'single operator' market definition for the mobile termination service. In this regard, AAPT argues that:

Following the Commission's recommended approach to market definition, and accepting the Commission's previous findings regarding the lack of substitution for the mobile termination services of a particular network, leads to the conclusion that the relevant market is a market for termination services on each individual network.<sup>73</sup>

In its submission to the discussion paper, ATUG included the paper which the International Telecommunications Users Group (INTUG) submitted to the UK Competition Commission's 2002 review on references under section 13 of the UK *Telecommunications Act 1984*. In its paper, INTUG supports the 'single operator' market definition applied by Oftel and the Competition Directorate-General of the European Commission in their considerations of the relevant market within which the mobile termination service is provided.

In contrast with these comments, however, some parties have argued during this inquiry that there are a number of substitution possibilities that can act to constrain mobile operators' pricing of the mobile termination service. For instance, with regard

---

<sup>71</sup> Core Research, *Price Regulation of Mobile Termination: Promoting Competition and Investment in Telecommunications*, 26 June 2003, p. 12.

<sup>72</sup> AAPT, *op. cit.*, p. 13.

<sup>73</sup> *Ibid.*, p. 14.

to the demand-side substitution possibilities available to carriers seeking to purchase mobile termination services on behalf of their end-users, Optus argues that transit agreements exist which provide an alternative means for fixed line operators to interconnect with mobile networks. In this regard, Optus argues that:

In the mobile services market, the wholesale level is characterised by the operation of transit arrangements. Transit arrangements are an aspect of the market that removes the ability of mobile operators to exercise market power in the setting of termination charges.<sup>74</sup>

Further, with regard to FTM calls, Optus argues that:

...a number of options are available at the wholesale level for fixed telephony operators if a mobile operator charges a relatively high price for elements such as terminating access. With carrier pre-selection, the fixed operator has the option of routing calls through to another fixed line operator. That second fixed operator will be chosen by the pre-selected carrier on the basis that it has negotiated a better terminating access charge with the relevant mobile operator.<sup>75</sup>

With regard to the demand-side substitutes available to end-users at the retail level, Optus and Vodafone both argue there is growing awareness amongst A-party consumers regarding the mobile networks they are calling when they make MTM and FTM calls. For instance, Vodafone points to the existence of ‘closed user groups’ which refers to groups of consumers who choose to subscribe to the same mobile network in order that calls made between them may be charged at a lower ‘on-net’ rate.<sup>76</sup> The existence of closed user groups was presented by Vodafone as evidence that end-users are aware of the mobile networks which they call and that consequently mobile operators are constrained when setting mobile termination prices. Vodafone commented that:

...an on-net/off-net pricing differential is a common pricing feature offered by both mobile and fixed carriers (including integrated carriers). Given that the commercial rationale for such a pricing structure is based on the assumption that consumers are aware of the network called, it seems difficult to sustain a view that consumer ignorance exists across the market. If consumer ignorance did exist, then there would be no commercial benefit from offering a differential prices for on-net and off-net calls.<sup>77</sup>

Furthermore, Optus also argued that research commissioned by itself, Telstra, Hutchison and Vodafone indicates that consumers are ‘generally aware’ of the mobile networks on which their calls to mobiles terminate.<sup>78</sup> Optus contends that the survey results, combined with its own billing data, demonstrate that for at least 42 per cent of all FTM calls, callers know on which mobile network their calls terminate.<sup>79</sup>

---

<sup>74</sup> Optus, *Optus Submission to Australian Competition and Consumer Commission on Mobile Services*, June 2003, p. 47.

<sup>75</sup> *Ibid.*, p. 47.

<sup>76</sup> Calls between consumers on the same network are often referred to as ‘on-net’ calls as the call remains on the one network throughout its duration. Calls made between consumers on different networks are sometimes referred to as ‘off-net’ calls.

<sup>77</sup> Vodafone, *Submission to the ACCC Mobile Services Review 2003*, 13 June 2003, p. 13.

<sup>78</sup> Amrinteractive, *Fixed to Mobile Research*, June 2003.

<sup>79</sup> Optus, Letter to the Commission, 29 August 2003.

Optus also argues that mobile operators are constrained in their pricing of the mobile termination service by a range of demand-side substitutes. Optus argues that:

Mobile carriers do not compete only with other mobile carriers, but also against a range of substitutes to mobile telephony. Examples of these substitutes include fixed telephony, email, facsimile, and paging services. The existence of these substitutes provides additional pressure on prices particularly for...highly price sensitive customers.<sup>80</sup>

More broadly, those parties that argue the mobile termination service is provided as part of a bundle or cluster of mobile telephony services argue that the service is provided in a broader 'cluster' market. For instance, Frontier Economics argues that:

Complementarities in production and demand mean it is inappropriate to define the relevant market as the wholesale market for either mobile termination services, or mobile originating services alone.<sup>81</sup>

Further, those in favour of a cluster market definition argue that the presence of at least four main providers of the mobile services bundle place a competitive constraint on the pricing of the bundle as a whole.

The CCC submitted that the 'single operator' market definition has merit and should be considered by the Commission. However, it also noted that it does not necessarily advocate that the mobile termination market be defined separately for each MNO. The CCC considers that a 'single market' for mobile termination could be defined and an analysis of this market could then be undertaken to determine the extent of market power of each MNO.<sup>82</sup>

The CCC considers that a 'broad mobiles market' definition would risk diverting the Commission's attention from the 'core' issue of mobile termination.<sup>83</sup>

The CCC also commented that it:

...recognises that, under Part XIC, service declaration does not require the determination of a definitive market definition as is required for a Part XIB case. However, market definition is a useful tool in being able to assess the LTIE criteria.<sup>84</sup>

*What is the functional dimension of the market in which the eligible service is provided?*

With regard to defining the functional dimensions of the market in which the eligible service is provided, interested parties are again influenced by their assessment of whether or not the mobile termination service should be considered as part of a bundle of mobile services which includes retail mobile services. For instance, those parties that believe the mobile termination service is provided in a series of 'single operator' markets implicitly are arguing these are wholesale markets that do not have retail functional levels. That is, mobile termination is sold in a series of wholesale markets

---

<sup>80</sup> Optus, *op. cit.*, p. 12.

<sup>81</sup> Frontier Economics, *Market Definition Issues in the ACCC's Mobile Services Review 2003: Report prepared for Vodafone*, June 2003, p. 10.

<sup>82</sup> Competitive Carriers Coalition, *Submission to the ACCC Mobile Services Review 2003*, June 2003, p. 15.

<sup>83</sup> *Ibid.*, p. 15.

<sup>84</sup> *Ibid.*, p. 16.



to carriers and service providers that use the service to provide FTM and MTM services to end-users in a series of separate retail markets.

Those parties who believe in a broader product market definition, however, argue that while the mobile termination and retail mobile services are provided in the same market, there are different retail and wholesale functional levels within this market. That is, whilst retail mobile services are provided at the retail level, the mobile termination service is provided at the wholesale level of the market.

Within this broader market definition framework, Frontier Economics argues that the relevant market contains both wholesale and retail functional components and includes the mobile access service, outgoing call services to other networks (including fixed networks), mobile termination services and mobile origination services.<sup>85</sup>

*What are the geographic dimensions of the market in which the eligible service is provided?*

With regard to the geographic dimension, submitters who commented on this issue agreed with the Commission's previous view that the market in which the mobile termination is provided is national. For instance, Optus comments that:

The ACCC has previously taken the view that the geographic dimension of the market in which mobile calls are supplied is a national one. That is, the wholesale and retail elements of a mobile call are currently supplied nationally by mobile carriers to other carriers, service providers, and to end-users.

Optus' believes that this view that there is a single geographic market must be maintained. Optus notes that the Productivity Commission did not endorse submissions that called for the recognition of "regional" markets. This informed the Productivity Commission's view that:<sup>86</sup>

*"...there is unlikely to be a strong case for the declaration of mobile roaming in regional areas."*<sup>87</sup>

*What are the temporal dimensions of the market within which the eligible service is provided?*

With regard to the temporal dimension of the market, Optus submits that:

...the temporal dimensions of both the mobile market and the fixed-to-mobile market demonstrate increasing substitutability in the product and functional dimensions. The development and uptake of new technologies therefore has a strong bearing on potential substitutes in the content of convergence...Optus therefore submits that time will continue to play a pivotal role as new technologies develop and their uptake becomes more widespread within the mobile market and fixed-to-mobile market.<sup>88</sup>

---

<sup>85</sup> Frontier Economics, *op. cit.*, p. 10.

<sup>86</sup> Optus, *Optus Submission to Australian Competition and Consumer Commission on Mobile Services*, June 2003, p. 48.

<sup>87</sup> Productivity Commission, *Telecommunications Competition Regulation*, December 2001, p. 507.

<sup>88</sup> Optus, *op. cit.*, p. 49.

### ***Recent regulatory decisions in Australia and other jurisdictions***

Under the European Union's (EU) new telecommunications regulatory framework agreed upon in March 2002, national telecommunications regulators in EU member countries were required to assess competition in the market for mobile termination services. As a result, a number of overseas telecommunications regulators have recently assessed the market for mobile termination services.

The Commission also understands that in their analysis of the relevant market for the mobile termination service, France, Germany, Italy and the United Kingdom have all identified a separate wholesale mobile product market for call termination on mobile networks.<sup>89</sup> The Italian and UK regulators further specified a single operator market approach. However, the German regulator did not take a definitive position on the issue.<sup>90</sup>

The UK regulator responsible for telecommunications, Ofcom (previously Oftel), analysed the market for mobile termination in work that it commenced in July 2000 on a new price control regime. In its December 2001 report, Oftel proposed that all four UK 2G operators should be subject to price regulation and a price cap of RPI-12 per-cent until 2006.<sup>91</sup>

Oftel's proposals were reviewed by the UK Competition Commission after being challenged by the four mobile operators. In its January 2003 report, the UK Competition Commission also proposed that the four mobile operators implement significant RPI-X price reductions. Vodafone, Optus and T-Mobile then took the matter to Judicial Review, whose decision of 27 June 2003 supported Oftel and the UK Competition Commission.<sup>92</sup>

In accordance with the new EU telecommunications regulatory framework, Oftel reviewed the market for mobile wholesale voice termination in the UK and released a discussion paper in May 2003. It subsequently released a draft report in December 2003 in which it repeats its earlier view that the mobile termination service should not be considered as part of a bundle of mobile services.

...the CPP (calling party pays) arrangement means that the decision to purchase a fixed-to-mobile or mobile-to-mobile call (involving the wholesale supply of a termination service to the originating operator) is not made by the consumer that purchases the bundle of access and outgoing call services. Consequently, the wholesale termination service cannot be considered to be part of the retail bundle unless consumers take into account the wholesale charges levied (i.e. for calls received by them) in their purchasing decisions. The Director does not believe that the evidence on consumers' behaviour discussed in Annex A supports this and maintains his view that termination services are therefore not linked by a cluster market analysis in the same way as the provision of origination services. Oftel has previously addressed the issue in more detail and its view was

---

<sup>89</sup> Squire Sanders and Dempsey, *Market Definition for Regulatory Obligations in Communications Markets*, November 2003, p. 258.

<sup>90</sup> *Ibid.*, p. 259.

<sup>91</sup> Citigroup Smith Barney, *European Telecoms, a New Regulatory Era*, 24 July 2003, p. 33.

<sup>92</sup> *Ibid.*, p. 33.

supported by the Competition Commission at paragraph 2.109 of the CC report, based on its own survey evidence.<sup>93</sup>

In its July 2001 final report on the pricing methodology for the GSM termination service, the Commission concluded that the relevant product for the purposes of delineating the relevant product market was a GSM mobile call. In the 2001 GSM Final Report, the Commission determined that the provision of GSM mobile calls is made up of four key elements:

- the GSM origination service (which differs from the declared GSM origination service in that it allows a mobile subscriber to call other mobile and fixed line networks and not just 13/1300 and 1800 number services offered by fixed line networks);
- the GSM termination service (which allows a mobile subscriber to receive a mobile call);
- the mobile access (subscription) service including connection, a handset and monthly access; and
- outgoing call services, which use a combination of GSM origination services, possibly GSM termination services or PSTN termination services (depending on whether the call is made to a mobile or fixed line), and mobile access services.

At this time, the Commission found that without the interaction of all of these elements, a GSM mobile call could not be provided.

Further, the Commission found that the revenue streams flowing from these elements are interdependent. In this regard, the Commission observed that the revenue sources associated with the provision of these joint services were:

- access prices for GSM termination services, from fixed network and mobile network carriers;
- charges for mobile access services from mobile subscribers; and
- charges for outgoing call services from mobile subscribers.

In essence, therefore, the Commission found that the relevant product for consideration was broader than simply the mobile termination service alone.

### ***Commission view***

As indicated above, the process of market definition for the eligible service begins by defining the service in question and the firm(s) supplying the service. With regard to defining the relevant service, this process has already been discussed in Chapter Four.

---

<sup>93</sup> Oftel, *Wholesale Mobile Voice Call Termination, Proposals for the Identification and Analysis of Markets, Determination of Market Power and Setting of SMP Conditions, Explanatory Statement and Notification*, 19 December 2003, pp. 19-20.

With regard to who are the potential suppliers of this service, the Commission understands that within Australia, there are four providers of mobile termination services on six mobile networks. More specifically, Optus and Vodafone both operate 2G GSM networks; Hutchison Telecommunications operates a 2G CDMA network and a 3G W-CDMA network; and Telstra operates a 2G GSM and a 2G CDMA network.

*What is the relevant product?*

In determining what is the relevant product for the purposes of this inquiry, the Commission believes that, at the retail level, mobile operators sell a bundle of services to end-users that includes a range of subscription services and the ability to make outgoing calls. Accordingly, the Commission believes it is appropriate to consider these retail services as being supplied within the same 'cluster' market.

The Commission is not convinced, however, that the mobile termination service should be considered as being supplied as part of the same cluster of retail mobile services. While the Commission agrees there are some complementarities in demand and supply with regard to the mobile termination and retail mobile services, the Commission is not convinced that these forms of complementarity mean that the provision of mobile termination services (as opposed to the ability to receive calls) should be considered as being *sold* in the same bundle as other mobile services sold at the retail level to mobile subscribers. This is because standard cluster market analysis is usually applied in cases where the bundle is *sold* to a single consumer. The distinguishing feature between normal cluster market analysis and the scenario that exists with regard to mobile telephony services is that, for mobile services, different elements of the proposed bundle (or cluster) of services are *paid* for by different consumers. That is, while the mobile subscriber pays for outgoing calls and subscription, under a CPP model it is the party originating MTM and FTM calls that pays (indirectly) for termination services when its carrier purchases termination services in order to provide FTM and MTM calls. In other words, while the provision of mobile termination services provides benefits to both the maker and receiver of a call (and is therefore jointly consumed), it is not paid for by both consumers.

On balance, therefore, the Commission does not believe that the relevant product for the purposes of market definition analysis in this inquiry should be defined more broadly than the mobile termination service. This is not to say, however, that the services don't have complementarities in demand and supply. Further, this should not preclude the Commission from analysing the inter-relationships between retail and wholesale services when considering what does or does not constrain and provide incentives for the pricing decisions of mobile carriers when determining pricing structures across the full range of retail and wholesale mobile telephony services. These incentives, and the impacts they have on the likely pricing structure for the mobile termination and retail mobile services in the absence of declaration, are discussed in more detail in section 5.4 and Chapter Seven below.

Hence, whilst from a strict market definition perspective it is appropriate in this instance to specify mobile termination as the relevant product, the Commission continues to believe any meaningful analysis of the impacts of declaration on

competition in telecommunications markets needs to have regard to the inter-relationships that exist between the revenue streams for mobile termination and mobile retail services. However, the fact that these revenue streams are inter-related does not necessarily mean that these services should be defined as being sold in the same bundle. Accordingly, the Commission is not convinced that mobile termination services are sold as part of the same bundle of services that retail mobile services are.

*What are the product dimensions of the market?*

In considering the product dimensions of the market, the Commission finds it useful to address three key questions:

1. Are there any substitute services that might constrain mobile operators pricing of the mobile termination service;
2. To what extent are termination services on different mobile networks substitutable with each other from the perspective of A-party consumers making calls to mobile networks; and
3. To what extent are B-party consumers receiving calls to mobile networks likely to be willing and able to constrain mobile operators pricing of the mobile termination service?

Each of these questions is addressed in turn below.

Are there any substitute services that could constrain pricing of the mobile termination service?

With regard to the substitution possibilities available to retail consumers considering calls to mobile networks, the Commission has examined the substitution possibilities available to A-party consumers presented by a range of options, including:

- calling a mobile subscriber on a fixed-line network;
- sending a mobile subscriber an e-mail message;
- sending a subscriber an SMS message;
- calling a mobile subscriber using voice over Internet protocol (VoIP) technology; and
- utilising call-back arrangements.

The Commission concluded in its July 2001 report on GSM pricing principles that although there is likely to be some substitution of fixed services for mobile services, such services were unlikely to constrain the prices charged for mobile calls to such a degree that they would be considered in the same market.<sup>94</sup> In relation to substitution between FTF and FTM calls, the UK Competition Commission, in its December 2002

---

<sup>94</sup> ACCC, *Pricing Methodology for the GSM Termination Service*, July 2001, p. 28.

Reports on references under section 13 of the *Telecommunications Act 1984 (UK)*, contended that calling a fixed-line phone instead of a mobile phone is clearly a possibility if the calling party knows that the mobile subscriber is located near a fixed line phone and knows that fixed phone's number. However, it concluded that fixed and mobile telephone clearly have 'fundamentally different characteristics' such that a call to a fixed line will 'rarely' be a wholly satisfactory substitute for locating someone on a mobile telephone.<sup>95</sup> Consistent with this view, the Commission considers that due to the mobility characteristic of mobile telephony, the degree of substitutability between a call to a fixed-line phone and a call to a mobile phone is limited. A call to a fixed-line phone should therefore not be included in the same market as FTM calls on these grounds.

Mobility is also a feature not commonly present in e-mail and VoIP services. In addition, e-mail does not allow simultaneous communication. The Commission therefore considers that, at this time, the extent of substitutability between these services and a voice call terminating on a mobile network also appears to be limited.

Likewise, the Commission considers that the extent of substitution between SMS messaging and a voice call which terminates on a mobile network appears to be limited. The Commission is of the view that at this stage, the extent of substitution of SMS (and web-based SMS) for FTM would be relatively limited. SMS messaging is a truncated form of communication that is not simultaneous. In the event of an increase in the price of mobile calls, the Commission believes that the extent of substitution towards SMS messaging would be small.

The Commission considers that 'call back' is a strategy to reduce the amount paid for calls and therefore is not a genuine alternative to calling a mobile phone. This view is also consistent with the view formed by the UK Competition Commission in its December 2002 report.

In all cases, therefore, the Commission finds that these alternatives are not sufficiently substitutable for calls to mobile networks. Accordingly, the Commission believes none of these alternative services should be included in the same product market as the mobile termination service.

In reaching this conclusion, the Commission has had regard to the findings of the Consumer Awareness Survey conducted by the four mobile carriers in 2003. Whilst the survey does indicate consumers use a wide variety of communications methods (such as fixed-line calls, mobile calls, e-mail, SMS and faxes), and that cost is an important factor for consumers when choosing to use alternative means of contacting people other than by calls to mobile networks, the Commission notes that the survey does not indicate the degree of substitutability between these services. In other words, the survey does not indicate the extent to which consumers would substitute away from making calls to mobile networks if an increase in the price of the mobile termination service (and hence, by assumption the retail price of calls to mobile networks) were to occur. Accordingly, the Commission is not convinced that the

---

<sup>95</sup> UK Competition Commission, Vodafone, O2, Orange and T-Mobile, *Reports on References under s. 13 of the Telecommunications Act 1984 on the Charges made by Vodafone, O2, Orange and T-Mobile for Terminating Calls from Fixed and Mobile Networks*, December 2002, p. 35.

survey indicates these other services are sufficiently substitutable to constrain the price of the mobile termination service.

Whilst the Commission expects that mobile operators would experience some decrease in demand for calls to their networks if they chose to increase the price of the mobile termination service, the Commission does not believe this would be because of any significant switch by consumers to any of the alternative service offerings considered above. That is, a decrease in consumer demand when a firm increases prices does not necessarily indicate an absence of market power. For example, a monopolist will still face a decrease in demand when it increases prices above cost to profit-maximising levels. Hence, evidence of less demand for FTM calls in response to an increase in mobile termination rates alone would not be evidence of a lack of market power.

Whether or not mobile termination services on each individual network should be considered in a product market of its own depends on the extent to which termination on different carriers' networks are substitutable with each other. In other words, to what extent are calls to different mobile networks substitutable with each other?

To what extent are termination services on different mobile networks substitutable with each other?

In its July 2001 Final Report on the pricing methodology for the GSM termination service, the Commission concluded that mobile operators have control over access to all calls that are made to end-users subscribing to their network. That is, if an individual subscriber to another telephony network (fixed, mobile or otherwise) seeks to make a call to an end-user subscribing to a particular mobile network, the first individual's network operator has no option but to seek terminating access on the mobile subscriber's network in order for the call to be completed. As a result of this, the Commission concluded that there is no possibility of substitution, and that this means that all mobile carriers – irrespective of their size – have control over access to termination of calls to end-users subscribed to their network.

The Commission continues to believe that, from the perspective of the A-party making a call to a mobile subscriber, it would appear substitution possibilities between different mobile networks are unlikely. To the extent an A-party wants to call a particular individual on a mobile phone, the A-party has little option but to initiate a call that will ultimately terminate on the B-party's chosen network. That is, if the B-party chooses to subscribe to a particular network, the A-party would not be able to call the B-party by placing a call through to an alternative network.

The Commission has had regard to arguments that A-parties could choose amongst different B-party end-users from a general class of end-user – such as plumbers – based on differences in mobile termination charges under certain circumstances. That is, some parties have argued that to the extent that differences in mobile termination prices were reflected in different prices for calls to mobile networks, A-parties might choose to substitute between different B-parties within a given class of end-user based on the network to which they are subscribed. However, in order for such substitution to be possible, the A-party would have to be aware of:

- which particular network all individual end-users of a particular class are connected to; and
- the difference in the price of calling different mobile networks.

In general, the Commission believes it is highly unlikely A-parties will be aware of this information. With regard to the first point, the Commission believes the evidence presented by the four mobile carriers is not compelling in terms of indicating consumers have widespread awareness of the mobile networks to which they call. While the Consumer Awareness Survey indicates end-users have some knowledge of the network to which the person they call most is connected, the level of awareness appears to tail off substantially once the end-user considers the 4<sup>th</sup> and 5<sup>th</sup> most often called mobile subscriber. This is particularly the case for FTM calls. Overall, the Commission considers that, whilst there is likely to be some awareness when calling close friends and family members, consumer knowledge is likely to be incomplete. Consumers are unlikely to be aware of which networks other mobile users (such as tradespeople, business contacts, etc) are connected to. This is further complicated by the presence of mobile number portability meaning the calling party can not determine the mobile network of the receiving party by looking at the first four digits of the mobile telephone number.

With regard to the second point, the Commission considers that, even if consumers are aware of the mobile networks that the people they call are connected to, there does not appear to be any current pricing mechanism that can convey a change in the price a mobile carrier sets for mobile termination on its network. This is because FTM service providers appear to charge the same rate for FTM calls irrespective of the mobile network to which the call recipient is connected. Hence, any change in mobile termination rates by one mobile carrier is not indicated to consumers of FTM or MTM calls.

Whilst some mobile operators do differentiate between on-net and off-net calls for MTM services, this does not appear to reflect any difference in the mobile termination rates charged amongst the different mobile operators. That is, all off-net MTM calls seem to be charged at the same rate irrespective of the mobile network being called by an A-party consumer. Finally, to the extent that any differences in termination were reflected in final prices for FTM calls, it is likely consumers will find the amount of information regarding the price their fixed network pays for termination on mobile networks both confusing and overwhelming.

With regard to the use of transit agreements as an alternative to seeking direct interconnection with a given mobile operator, the Commission has not been provided



with evidence during this inquiry to suggest these arrangements have been effective in constraining the pricing decisions of providers of the mobile termination service. In the first instance, the Commission has not been provided with evidence to suggest transit arrangements are widely used by mobile carriers in order to provide MTM calls. With regard to FTM calls, the Commission has previously indicated it understands that transit arrangements currently in place exist because of the relative cost of installing switches and switch ports rather than because of an attempt by fixed-line operators to avoid the high prices mobile operators set for direct mobile termination services. That is, fixed-line carriers are motivated to seek transit arrangements in order to overcome the cost of setting up switches to directly terminate low numbers of calls to particular mobile networks. The Commission also understands that the price of transiting calls is the same, or more, than the (above-cost) access price for directly purchasing mobile termination services. This supports the view that the effect of transit is to reduce differences in access prices between carriers, and not to drive access prices towards cost. Therefore, the Commission continues to believe that transit arrangements do not mitigate control over access to mobile termination services.

To what extent will B-party consumers be willing and able to constrain pricing of the mobile termination service?

From the perspective of the B-party receiving calls on mobile phones, it could be argued that mobile phone users can exert a constraint on mobile phone network operators' pricing of mobile termination if mobile phone users were to change operators in response to their mobile operator increasing termination prices. For this to occur, however, mobile phone users would need to:

- a) care more about those calling them than they would care about themselves;  
and
- b) be aware of differences in mobile termination rates between carriers.

With regard to (a), those operators that set lower termination charges may, in some cases, chose to recover the lost revenue from termination through higher prices for retail mobile services. This would especially be the case if, as some assert, mobile operators are earning zero economic profits across the whole of their business. Hence, in order for the B-party mobile subscriber to exert a constraint on the price of the mobile termination service (paid for, indirectly, by the A-party), s/he would need to be prepared to pay a higher price for the retail mobile services s/he purchases.

Hence, for a mobile subscriber to choose those carriers with lower termination charges, the Commission believes that the subscriber would need to be so highly altruistic as to place a higher value on a dollar of benefits to those people calling him or her than retaining that dollar for him or her self.<sup>96</sup> There is no evidence of such strong altruistic tendencies amongst mobile telephone subscribers. Indeed, evidence from studies conducted by overseas mobile operators (O<sub>2</sub> in the UK) found that:

...it was the cost of making calls from their mobile phone and the overall value for money of the packages available that were more important to respondents than the cost to others of calling them. Nearly three-quarters of respondents said that the cost to other people of calling them on their mobile phone was an unimportant factor when they decided which mobile network to join. Under one-fifth said it was important.<sup>97</sup>

Whilst some mobile subscribers may countenance lower termination charges in circumstances where they may be purchasing a mobile phone for other family members in order to be able to call them more easily or if they are a business wanting to encourage potential clients to call them, this is self-interested behaviour. This would especially be the case if mobile operators (and hence B-party consumers) can not be certain that lower termination charges will be passed through in the form of lower FTM prices paid by A-party consumers. Further, the Commission does not believe this customer profile represents the dominant scenario in mobile telephony markets.

Secondly, with regard to (b), as indicated above, consumers have no knowledge of differences in termination rates between mobile operators. Whilst they may realise it is cheaper to call someone on the same network they are connected to, there appears to be no mechanism in the market to indicate differences in termination rates to other mobile networks as all off-net calls are charged at the same rate irrespective of the network on which a call terminates.

Hence, the Commission believes that mobile phone users have neither the incentive nor the awareness of differences in mobile termination rates, to enable them to choose between networks according to the different mobile termination rates charges by mobile operators.

### Summary

As indicated above, the Commission does not need to be as determinative in its choice of product market definition (or any other aspect of market definition) for the purposes of a declaration inquiry under Part XIC of the Act as it needs to be for a matter considered under Part IV or Part XIB of the Act. That said, an understanding of relevant market boundaries and the forces that constrain the pricing of the eligible service are important for the Commission's consideration of whether declaration will promote competition in telecommunications markets.

---

<sup>96</sup> This would suggest that mobile subscribers should be willing to make *voluntary* cash transfers to those wanting to call them.

<sup>97</sup> UK Competition Commission, *Vodafone, O<sub>2</sub>, Orange and T-Mobile Reports on References under s. 13 of the Telecommunications Act 1984 on the Changes made by Vodafone, O<sub>2</sub>, Orange and T-Mobile for Terminating Calls from Fixed Mobile Networks*, December 2002, Volume 1, p. 42.

It is the Commission's draft view that it is unlikely that there are adequate demand- or supply-side substitutes that will constrain mobile network operators in their pricing decisions for the mobile termination service. Further, the Commission does not believe that mobile termination services 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. This, 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.

Accordingly, the Commission believes all mobile operators are unlikely to be constrained in their pricing decisions for the mobile termination service. Crucially, however, this is not to imply that the revenue streams from retail mobile and mobile termination services are not inter-related. The Commission continues to believe they are and that these inter-relationships are a key factor in its assessment of the extent to which declaration of a mobile termination service would (or would not) be likely to promote competition in telecommunications markets, discussed in section 5.4 below.

*What are the functional dimensions of the market?*

Delineation of the relevant functional market requires identification of the vertical stages of production and/or distribution which comprise the relevant arena of competition. In the case of mobile termination, given it involves an access provider selling access to an access seeker, and not directly to an end-user, the service is considered to operate at the wholesale stage of production. The service is an input, used by telecommunications service providers, to provide retail FTM and MTM services.

As indicated above, the Commission believes that the revenue streams mobile operators generate from the provision of the mobile termination service and retail mobile services are inter-related. The extent of this inter-relationship is discussed in section 5.4 and Chapter Seven below. The Commission does not, however, believe that the retail stage of production is able to constrain the pricing of the mobile termination service. Accordingly, the Commission's draft view is that retail mobile services should be considered to be in a separate market to the wholesale mobile termination service.

*What are the geographic dimensions of the market?*

In delineating the geographic dimensions of telecommunications markets, factors such as the area over which major suppliers operate are considered to ensure that the relevant arena of competition is described.

In its July 2001 report on GSM pricing principles, the Commission considered the geographic market in which mobile calls are supplied to be a national one. The Commission's current analysis of the geographic dimension of the relevant market leads it to the same conclusion. That is, the Commission continues to believe that the geographic boundary of the relevant market is national.

Although Hutchison's network only operates in distinct geographical locations, the Commission understands that it provides a national mobile service. This is made possible through roaming agreements with other mobile carriers. As noted below, the existence of national coverage (whether or not by utilising roaming agreements) is considered essential to compete.

#### *What are the temporal dimensions of the market?*

The temporal dimension of the market refers to the timeframe over which substitute services could potentially exert a competitive constraint on the pricing and output behaviour of a provider of the eligible service. A timeframe that is too short may exclude alternatives on the demand or supply side that are actually constraining conduct in the market in question. Whereas, one that is too long risks including those services which are not effectively constraining behaviour currently or for the foreseeable future.

At this stage, the Commission does not foresee any developments in mobile telecommunications technology, or in other communications technology, that will produce any substitute services for the mobile termination service in the short-to-medium term other than those considered under the product market discussion above.

### **5.2.3 Defining other markets in which declaration may promote competition**

Often the markets in which competition is likely to be promoted as a result of declaration of the eligible service are downstream markets. In general, the Commission will be interested in identifying only those markets in which declaration of the eligible service is likely to have a material effect. Where there are several markets that could be affected by declaration, it may be sufficient for the Commission to focus its attention only on the main or major markets in which declaration may promote competition.

#### *Views of interested parties*

All submitters who presented a view on the markets in which continued declaration of the mobile termination service may affect competition identified the market in which FTM services is provided as a relevant downstream market. Some parties also identified the market in which MTM calls are made as a relevant downstream market and some parties identified the mobile services market as a downstream market.

Frontier Economics, on behalf of Vodafone, considers the relevant downstream market is the market in which FTM telephony services are supplied. In turn, Frontier Economics considers that FTM telephony services are part of the service offering of a fixed-line telecommunications service provider. Frontier Economics argues that:

The Fixed-to-mobile service is one of a number of complementary services that make up a fixed line service offering. It is, therefore, necessary to consider whether it is more appropriate to define the fixed-to-mobile service as being provided in a market(s) for fixed line telephony services, rather than in the fixed-to-mobile market.<sup>98</sup>

---

<sup>98</sup> Frontier Economics, *ACCC Mobile Services Review 2003: Market Definition Issues*, June 2003, p. 13.

Similarly, Optus considers the 'retail FTM market' to be a relevant downstream market. However, it argues that competition in this market is not affected by termination rates. In this regard, Optus contends that:

Retail fixed-to-mobile services are important to this review and are certainly of relevance because they are a downstream service of mobile termination. However, competition in the retail fixed-to-mobile market is not affected by termination rates or by ignorance on the part of the calling party. There are adequate market forces to ensure an efficient pass-through of negotiated termination rate reductions.<sup>99</sup> For example, there are numerous carriers and providers competing for long distance and fixed to mobile services and the retail fixed to mobile rate is regulated in the retail price control arrangements (as recommended by the ACCC).<sup>100</sup>

Hutchison also identified the market in which FTM services is provided as a relevant downstream market. In addition, it also identified the market in which MTM services are provided as a relevant downstream market.

Similarly, the CCC argues that if the market for the mobile termination service is defined as it was by regulators in the UK or the Netherlands, then the downstream markets would be the FTM and MTM markets. The CCC also considers that these services each form part of other separate telephony markets. In this regard the CCC commented that:

Recognising that the M2M market could be considered as part of the broader mobiles market, then such consideration would extend to this downstream market. This was the approach adopted in the UKCC Report. For the same reasons, because competition issues in F2M impact upon competition in the full suite of pre-selected services, then consideration should also be extended to this broader downstream market.<sup>101</sup>

Similarly, AAPT also considers that the relevant downstream markets in which competition may be promoted are the markets for FTM and MTM call services.<sup>102</sup>

PowerTel did not explicitly identify markets in which it considers competition may be affected by continued declaration but it suggested that the Commission assess the residential and corporate/business FTM retail markets when considering the question of FTM pass through.<sup>103</sup>

Likewise, the Australian Consumers' Association's (ACA) submission did not specifically identify markets in which it considers competition may be affected by declaration. However, its discussion of the FTM services market clearly indicates that it considers this to be a market in which competition may be affected.<sup>104</sup>

INTUG also does not specifically identify downstream markets but it discusses the retail MTM and FTM markets in its consideration of the interests of end-users.

---

<sup>99</sup> Even if the ACCC believes the retail fixed to mobile market has monopoly characteristics, a rational profit maximising monopolist will pass on a reduction in marginal cost (eg. termination rates) in lower retail prices.

<sup>100</sup> Optus, *Optus Submission to the Australian Competition and Consumer Commission on Mobile Services*, June 2003, p. 6.

<sup>101</sup> CCC, *Submission to the ACCC Mobile Services Review 2003*, p. 15.

<sup>102</sup> AAPT, *Submission by AAPT Limited, 13 June 2003*, p. 7.

<sup>103</sup> PowerTel, *Submission by PowerTel Limited*, 18 August 2003, p. 5.

<sup>104</sup> Australian Consumers' Association, *Response to ACCC Discussion Paper*, p. 2.

### *Commission's View*

The following downstream services are identified as those being most relevant to the inquiry:

- the market within which FTM services are provided; and
- the market for retail mobile services.

#### *Market within which FTM services are provided*

The Commission follows the same market definition processes for defining relevant downstream markets as it does when defining the market in which the eligible services are provided. Therefore, in order to define the market in which FTM calls are provided, the Commission will first consider the relevant product and then consider the product, functional, geographic and temporal dimensions of the market.

The Commission's assessment of the relevant product has let it to consider 'cluster market' concepts and issues surrounding pre-selection determination.

As indicated above, a literature has emerged in recent years that suggests that services provided in a bundle should be considered to be supplied in the same 'cluster' market.<sup>105</sup> The essence of the cluster market concept is that complementarities in demand or production mean that a firm will, under certain circumstances, only be able to compete by producing a bundle (or cluster) of services rather than simply by providing individual elements of the bundle in isolation. Where this is the case, it is argued that producers in a relevant market compete to supply the cluster of services jointly. When conducting market analysis, the cluster should be considered as being provided in the relevant market, and analysis undertaken to determine whether providers of the bundle (or cluster) of services have market power over the provision of the bundle.

In previous discussions on this issue when determining pricing principles for the GSM termination service, the Commission concluded that:

While the Commission is not of the view that long-distance and international calls are in the same market as fixed-to-mobile calls, it notes that the competitive forces on long-distance and international calls may have some impact on the provision of fixed-to-mobile calls. Essentially, the pre-selection determination means new entrants are likely to consider their competitiveness and profitability in the provision of all three call types and not just fixed-to-mobile calls.<sup>106</sup>

---

<sup>105</sup> See for example H. Ergas, *Cluster Markets: What are they and How to Test for Them*, Centre for Research in Network Economics and Communications, Auckland, 1985, p. 2.

<sup>106</sup> *Pricing Methodology for the GSM Termination Service - Final Report*, ACCC, July 2001, p. 44.

However, in the local telecommunications services inquiry undertaken by the Commission in July 1999, it indicated it did treat national long-distance and international calls as being supplied in the same market. This view was reached based on an analysis of the services in terms of the bundles or clusters within which they are supplied. In this regard, the Commission noted that:

With current pre-selection arrangements end-users must choose a single service provider for both national long distance and international calls (known as 'single basket preselection'). Over-ride codes do, however, enable end-users to use different service providers for national and international long-distance calls on a call-by-call basis. On balance, for the purposes of examining the impact declaration is likely to have on competition, the Commission did not believe it necessary to form a definitive view. It decided to treat national long distance and international long distance calls as being supplied in the same market.<sup>107</sup>

Since that time, the Commission notes that FTM calls have been added to the single basket of pre-selected services. Accordingly, 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 not frequently used.

On balance, the Commission continues to agree with its assessment of July 2001 that competitive forces on long-distance and international calls may have some impact on the provision of FTM calls. Accordingly, it is important to consider the inter-relationships between these services when considering the impact of declaration on the provision of FTM calls. While the Commission is not required to form a definitive view on the boundaries of the market within which FTM calls are provided for the purposes of this declaration inquiry, it has decided to treat FTM calls as if they were being provided in the same market as national long-distance and international calls.

It is important to note, 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.

In assessing the product dimension of the market, the Commission seeks to identify demand-side and supply-side substitutes for the relevant product. The Commission considers there is a range of services which may potentially be considered substitutes for the bundle of services containing FTM services, national long distance and international calls. In particular, the Commission believes it is relevant to consider the potential substitutability offered by FTF calls, MTM calls and SMS services.

As discussed in the section on the product dimensions of the market within which the eligible service is provided, however, the Commission considers none of these alternatives to be a fully effective substitute for FTM calls. Accordingly, with the

---

<sup>107</sup> *Declaration of local telecommunications services – a report on the declaration of an unconditioned local loop service, local PSTN originating and terminating services, and a local carriage service under Part XIC of the Trade Practices Act 1974*, ACCC, July 1999, p. 38.

exception of national long distance and international long distance calls (which are, due to preselection, sold as part of the same bundle as FTM calls), the Commission does not believe they should be included in the same market as FTM call services.

The Commission considers that the relevant functional level of the market in which FTM calls are provided is the retail level. The Commission is of the view that while FTM calls are provided using the wholesale PSTN origination and mobile termination services, competition at the retail level for FTM calls would not constrain the access prices for these services. In support of this conclusion, it is noted that PSTN origination is regulated and that the Commission has elsewhere expressed its view that there are particular features of mobile termination services which mean that the competitive forces in place are weak, allowing mobile carriers to set access prices above cost. The Commission, therefore, considers that FTM calls are provided at a retail level and that the wholesale PSTN origination and mobile termination services are part of separate markets.

The Commission considers there to be a national market for the provision of FTM calls. The Commission notes that all providers of FTM services offer a national product, with the only limitation being the geographic coverage of the mobile network being called.

#### Conclusion

The Commission considers the relevant market within which FTM calls are provided 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 related downstream market of the mobile termination services market, and is likely to be provided in the same market as national long-distance and international calls.

#### *Retail mobile services market*

As with the market within which FTM services are provided, in order to identify the market in which mobile services are provided, the Commission first starts by identifying the relevant product. The Commission considers the relevant product in this instance is a retail mobile service. The provision of a retail mobile service consists of the following elements:

- a mobile origination service;
- the mobile access (subscription) service including connection, a handset and monthly access; and
- outgoing call services.

In establishing the boundaries of the product market, the Commission has considered whether 2.5G services, 3G services, fixed line services and SMS services are substitutes for a mobile call made on a GSM or CDMA network.



## 3G

When the Commission published its GSM pricing principles in July 2001, 3G services were not yet available and there was some uncertainty about how 3G technology would be applied and what services would be utilised. Since the introduction of 3G services by Hutchison in April 2003, however, it has become clear that voice call services provided on 3G networks compete with voice call services provided on 2G and 2.5G networks. Consequently, the Commission now considers that mobile calls utilising 2G, 2.5G and 3G technologies are sufficiently substitutable to be considered as part of the same mobile services market.

### Fixed line

As discussed previously in this section, the Commission considers that due to the lack of mobility associated with fixed-line telephony services, the ability for a fixed-line service to substitute mobile services is limited. A call which originates and terminates on a fixed-line network should therefore not be included in the same market as the market for retail mobile services.

### SMS

Similarly, SMS does not provide the same basic characteristics present in a mobile call. SMS offers a comparatively truncated form of communication which does not allow end users to communicate simultaneously. Consequently, the Commission believes that in the event of an increase in the price of mobile calls, the extent of substitution to SMS would be small. That said, the Commission understands that SMS services are sold as part of the same bundle of retail mobile services alluded to above. Accordingly, the Commission believes SMS services are provided in the same market as other retail mobile services.

In relation to the functional dimension of the market, it is the Commission's view that the retail mobile services are retail services

### Conclusion

The Commission's view is the relevant market is that in which retail mobile services are supplied. This is a national market operating at a retail functional level. It includes retail mobile services provided on 2G, 2.5G and 3G networks and SMS services, but does not include fixed-line SMS services.

## **5.3 State of competition in the relevant markets**

Having established the relevant markets for consideration, this section now seeks to determine the state of competition in these markets. This gives the Commission an insight into the likely effectiveness of competition in the future if the service ceased to be declared. Further, it can also provide some insights into the likely impact of declaration of the eligible service. That is, if competition in the relevant markets is already effective, then declaration of the eligible service may not significantly promote further competition. That said, consideration of the likely state of competition in relevant markets is complicated in this instance, as the mobile

termination service is already a declared service. Accordingly, analysing the current state of competition in relevant markets provides an indication of the state of competition under current forms of regulation as much as it provides an insight into the state of competition that would be likely to exist in the absence of declaration of the eligible service.

It is important to also note that assessing the effectiveness of competition is not a static analysis limited to a description of current conditions and behaviour. Rather, it is a dynamic analysis concerned with features affecting the competitive supply of services in the future. Nevertheless, current conditions will, in general, provide a solid starting point from which to consider the future effectiveness of competition.

When assessing the effectiveness of competition in a particular market, the Commission examines a range of both structural and behavioural characteristics. From a structural perspective, the Commission considers the linkage between supply of the eligible service and the supply of related services, barriers to entry, concentration levels, and the bargaining power of suppliers and buyers of the relevant services. From a behavioural perspective, the Commission may consider a range of market outcomes, including the level of price competition in the provision of a given service, the price-cost margins available to suppliers of a service, price changes over time, service differentiation, and comparisons with similar services provided in overseas jurisdictions.

Other features the Commission may consider include the regulatory environment and dynamic characteristics of the market (including growth, innovation and product differentiation).

The Commission's assessment of the state of competition in relevant markets begins by outlining the views of interested parties to this inquiry. It then considers the state of competition in each of the three market types outlined in section 5.2 above – the individual markets for the mobile termination service; the retail mobile services market and the market within which the FTM service is provided.

### **5.3.1 Views of interested parties**

A range of views are expressed by interested parties in relation to the current state of competition in the markets relevant to this inquiry. Telstra, Optus and Vodafone submit that the mobile services market (which they define to include both the mobile termination and the retail mobile services markets) is highly competitive, while AAPT, PowerTel, Hutchison, the CCC, Core Research, SETEL and ATUG express concerns about the level of competition in either or both of the retail mobile services market and the market in which FTM services are provided.

Telstra argues that the mobile services market is highly competitive. Telstra contends that this assessment accords with the views expressed by the Commission in earlier inquiries into mobile services and that competition has probably intensified since these views were expressed by the Commission.<sup>108</sup>

---

<sup>108</sup> Telstra, *Telstra's Initial Response to the Discussion Paper of the Australian Competition and Consumer Commission*, April 2003, p. 3.

Likewise, Optus considers the mobile services market is 'subject to fierce competition' at both the wholesale and retail levels, and that this is demonstrated by:

- the number of mobile networks and the number of mobile service providers in the market;
- the fact that, in its view, there is no dominant player with the ability to raise prices above cost without losing market share;
- MTM call pricing that is subject to 'intense competition';
- FTM call prices which reflect a 'very competitive' market; and
- product differentiation which is occurring in the mobiles market.<sup>109</sup>

Vodafone argues that the mobile services market is 'effectively competitive' and that it delivers cost-reflective prices. It argues that there are a large number of mobile service providers competing to provide mobile services and notes that since 1997 market penetration has increased and there has been a substantial increase in call volumes on mobile networks.<sup>110</sup>

Vodafone argues that the 'FTM retail market' is a market in transition. It considers that 'substantial margins' are currently being earned by FTM carriers, especially in the residential sector, but that these will be competed away over time.<sup>111</sup>

Contrary to some of these views, AAPT considers that recent increases in prices for retail mobile services would suggest that the retail mobile services market is 'not effectively competitive'.<sup>112</sup> AAPT notes that FTM prices have generally decreased in line with lower termination rates, but that the trend is inconsistent across different customer classes. This is because prices for residential and small business consumers have increased while prices offered to large corporations have reduced.<sup>113</sup>

PowerTel considers that competition in the market in which fixed-to-mobile services are provided is inhibited by the ability of integrated carriers to use above-normal profits from mobile termination to cross-subsidise retail FTM prices.

In the current market place the distortion of bottleneck pricing and cross-subsidisation has in some instances, led to the corporate customer achieving lower access prices than interconnecting carriers. PowerTel believes that there are corporate customers offered retail fixed-to-mobile calls (ie end-to-end call) at rates 25 per cent lower than what PowerTel is charged for wholesale mobile termination (ie Point of Interconnect (POI)-to-mobile).<sup>114</sup>

---

<sup>109</sup> Optus, *Optus Submission to ACCC on Mobile Services*, June 2003, pp. 9,11,13.

<sup>110</sup> Vodafone, *Submission to the ACCC Mobile Services Review Discussion Paper 2003*, 13 June 2003, pp. 5,8,9.

<sup>111</sup> *Ibid.*, p. 16.

<sup>112</sup> AAPT, *Submission by AAPT Limited*, 13 June 2003, p. 27.

<sup>113</sup> *Ibid.*, p.25.

<sup>114</sup> PowerTel, *Submission by PowerTel Limited*, 18 August 2003, p. 5.

PowerTel believes that, in contrast to these reductions in corporate FTM charges, residential FTM charges have decreased by a smaller amount – or even increased.<sup>115</sup>

Hutchison argues that competition in the mobile services market has been adversely affected by the introduction of the retail benchmarking pricing principles. Hutchison believes that:

...retail charges for mobile services have to some extent increased by reason of the retail benchmarking pricing principles adopted by the Commission. It is difficult however to be precise due to the variety of call plans available. Other examples of reduced competition are Vodafone's removal of handset subsidies, and Telstra's reduction in the level of its handset subsidies.<sup>116</sup>

Hutchison considers the 'FTM market' to be uncompetitive, as demonstrated by its estimates that Telstra has over 80 per cent market share in the provision of basic access and local calls; 80-90 per cent market share in the 'FTM market'; and 48 per cent of mobile subscribers.<sup>117</sup>

Further, Core Research argues (on behalf of Hutchison) that analysis by Macquarie Research Equities and Hutchison suggests that competition between carriers for the provision of FTM calls to residential and SME end-users 'may be relatively weak'. However, it notes that competition for the provision of FTM calls to larger corporate customers may be 'significantly greater'.<sup>118</sup>

The CCC expresses concern about the size of Telstra's and Optus' combined market share and argues that the behaviour of Telstra, Optus and Vodafone in commercial negotiations on FTM terminating access is 'inconsistent with what ought to apply in a competitive market'. The CCC considers that the scarcity of mobile spectrum means that there are high barriers to entry to the market.<sup>119</sup>

SETEL considers that competition in the mobile services market has 'developed over the past few years' but that there is still 'scope for further improvements' in relation to call charges and the 'transparency of differential pricing offerings'. SETEL argues that competition in relation to 'long distance mobile services' is not well developed and is unlikely to develop further in the foreseeable future.<sup>120</sup>

Based on its own research into pricing for telecommunications services, including mobile and FTM services, ATUG argues that the 'Australian telecommunications industry' is not internationally competitive.

This information suggests that however much progress may have been achieved through competition over the last decade in Australia, we still have progress to make

---

<sup>115</sup> *Ibid.*

<sup>116</sup> Hutchison, *Submission to the ACCC Mobile Services Review Discussion Paper 2003*, 13 June 2003, p. 16.

<sup>117</sup> *Ibid.*, p.12.

<sup>118</sup> Core Research, *Price Regulation of Mobile Termination: Promoting Competition and Investment in Telecommunications*, 26 June 2003, p. 6.

<sup>119</sup> CCC, *Submission to the ACCC Mobile Services Review 2003*, pp. 4,5.

<sup>120</sup> SETEL, *Submission by the Small Enterprise Telecommunications Centre Limited*, June 2003, p. 3.

to achieve our objective of international competitiveness in the Australian telecommunications industry.<sup>121</sup>

### **5.3.2 Mobile termination services markets**

As discussed in section 5.2, the Commission's draft view is that the relevant markets for the eligible service for the purposes of this inquiry are the markets for the wholesale mobile termination services on each individual mobile network operator's network.

An examination of the structural and behavioural characteristics of these markets, in order to determine the state of competition in the markets, need not be as extensive as that set out in sections 5.3.3 and 5.3.4 of this chapter for the retail mobile services market and the FTM services market, due largely to the definition of the mobile termination services market.

#### **(a) Market Concentration**

The level of market concentration is one indicator of the (likely) degree of competition within a market. The more suppliers within a market, the less likely it is that any one has sufficient market share so as to influence the prices paid by consumers.

Given mobile termination services provided on each individual mobile network are defined to be provided in their own individual product markets, it follows that each network operator has a monopoly over the provision of mobile termination services on its own network. Therefore, each mobile network operator can heavily influence the prices paid for the supply of termination services on its network, and in doing so has the ability set termination charges well above the underlying cost of providing the service.

#### **(b) Barriers to entry**

When assessing the state of competition in a market, the Commission also considers whether the threat of new entry will act to constrain the behaviour of existing market participants. Even if the number of participants in a market is low, their ability to extract economic profits from this market may be constrained by the threat of potential entry by new suppliers. Where barriers to entry into a market are significant, however, the threat of entry is likely to be low and is unlikely to act as a constraint on the behaviour of existing market participants.

As discussed above in section 5.2, the Commission does not believe there are practical substitutes available for termination services on a particular operator's network. Therefore, an absolute barrier to entry into the market exists, as another operator is unable to provide termination services on any other operator's network.

---

<sup>121</sup> ATUG, *ATUG's Submission to the ACCC Mobile Services Review Discussion Paper*, p. 8.

## ***Summary***

The Commission considers that the absolute power the individual operator exercises over the provision of termination services on its network, due to the monopoly nature of the market and the absence of practical substitutes, provides scope for that operator to set termination charges well above the underlying cost of providing the termination service.

### **(b) Pricing Conduct**

In principle, prices are said to be at competitive levels when they are close to or at cost, allowing for a normal rate of return. In examining price conduct of market participants, the Commission looks at changes in prices of services over time and the profitability of participants over time.

#### *Changes in prices over time*

In a competitive market, where the number of units consumed increases over time, it is expected that providers will experience economies of scale. This reduced cost per unit is then expected to be reflected in a lower price per unit for the service supplied.

Information available to the Commission, through submissions to this inquiry, carriers' financial reports and from data collected as part of the GSM retail benchmarking monitoring program, indicate that the number of call minutes on mobile networks has seen significant growth over time.<sup>122</sup> In contrast, however, the price of mobile termination services does not appear to have decreased significantly in recent periods. While mobile termination prices have declined during the last six years, the Commission notes that the reduction has occurred during a period when the mobile termination service has been declared and subject to regulation under Part XIC of the Act. Absent declaration, the Commission believes the incentives for mobile carriers to lower access prices are minimal and significant reductions should not be expected. Further, whilst the prices of mobile termination services are significantly lower than those observed in 1996, the vast bulk of this reduction appears to have occurred during the period prior to January 2001, by which time the price Optus paid Telstra for mobile termination had already fallen to around c-i-c cents per minute, and the average price Vodafone paid for mobile termination had fallen to a similar level. In the last two-and-a-half years, however, price falls have slowed significantly, with average prices now in the order of 22.5 cents per minute. Market inquiries indicate that price falls for the mobile termination service have largely stalled during the last 12 months while the Commission has considered appropriate pricing principles for this service.

#### *Profitability*

Information submitted by a number of interested parties to this inquiry suggest that the average wholesale mobile termination rates charged by mobile network operators currently lie at around 22.5 cents per minute.

---

<sup>122</sup> Optus, *Optus Submission to the ACCC on Mobile Services*, June 2003, p. 19; Telstra, *Half-year Report for the Half-year ended 31 December 2003*.

Information submitted by MCI, outlined below in Table 5.3, compares mobile termination rates in Australia against estimates of cost from Europe and the USA, which MCI argues may be closer to the efficient cost of providing the termination service. On the basis of this information, MCI argues that a competitive cost oriented level for mobile termination in Australia is around 6-12 cents per minute.<sup>123</sup>

**Table 5.3 Cost Estimates and Mobile Termination Proxy Indicators**  
(figures in Australian cents per minute)

	Average
Belgium (Proximus) estimate	6.34
US – Sprint estimate New York	7.85
US – Sprint estimate California	10.08
US – Sprint estimate Florida	13.30
Spain – average on-net mobile-to-mobile	10.13
Belgium (Proximus) on-net mobile-to-mobile	10.87
UK – Analysis LRIC + EPMU	11.92
UK – average on-net mobile-to-mobile	13.02
UK – MCI’s MVPN with Vodafone	14.42
Australia – average fixed-to-mobile	21.00

*Belgium and UK estimates in 2001; Australia in 2003*

Source: MCI 2003, Submission to the ACCC Mobile Services Review 2003, p. 5.

Further, cost data collected from carriers as part of the Regulatory Accounting Framework (RAF) could be used as a basis for calculating a TSLRIC proxy. In the case of Telstra for 2002-03, this procedure applied to the External Wholesale Account results in an estimate of c-i-c cents per minute, including Telstra’s allocation to organisational-level costs or c-i-c cents per minute if this allocation is excluded.

Third, a number of parties have suggested that retail prices for MTM calls could be used as a basis for inferring underlying cost. On this basis, PowerTel ‘estimates that the true cost for mobile termination is in the region of 5-6cpm’.<sup>124</sup> AAPT uses a similar analysis to conclude that ‘current termination charges are significantly above costs’.<sup>125</sup>

<sup>123</sup> MCI, *Comments of MCI Regarding the ACCC Discussion Paper on Mobile Services Review 2003*, 13 June 2003, p. 5.

<sup>124</sup> PowerTel, *Submission by PowerTel Limited*, 18 August 2003, p. 3.

<sup>125</sup> AAPT, *Submission by AAPT Limited*, 13 June 2003, p. 62.

Fourth, the Commission has had regard to a range of other information sources on the costs of GSM and CDMA termination, including those briefly reviewed in its 2001 Report.<sup>126</sup> These included modelling done by an Australian carrier and supplied to the Commission on a c-i-c basis, and which indicates costs comfortably within the range considered by the Commission.

Overall, therefore, the Commission has available to it a number of measures that could be used to estimate the cost of providing the mobile termination service. These range from 5-6 cents per minute to around 12 cents per minute.

### ***Conclusion***

The small reductions in mobile termination prices over time as mobile termination volumes increase, along with evidence which indicates that the prices for mobile termination services are significantly higher than the underlying cost of producing these services, strongly suggest that mobile network operators are enjoying above-normal profits for the supply of mobile termination services.

### **Overall conclusion about the state of competition in each individual wholesale mobile termination market**

Whilst the mere existence of a monopoly does not automatically imply that prices will be set at a level inconsistent with that expected in competitive markets, the Commission considers that both the structural and behavioural characteristics of the mobile termination services markets indicate that mobile network operators are using their market power in their individual markets to extract monopoly rents and enjoy economic profits from the provision of wholesale mobile termination services. Accordingly, the Commission considers that the state of competition in each of wholesale mobile termination services markets is not competitive.

### **5.3.3 Retail mobile services market**

For the purposes of this inquiry, the Commission believes, the following structural and behavioural measures are of most relevance for assessing the state of competition in the retail mobile services market:

- measures of market concentration;
- barriers to entry;
- market growth; and
- price conduct.

#### **(a) Market concentration**

As noted already in section 5.3.2, the level of market concentration is one indicator of the (likely) degree of competition within a market. The more suppliers within a

---

<sup>126</sup> ACCC, *Pricing Methodology for the GSM Termination Service Final Report*, July 2001, p. 14.



market, the less likely it is that any one has sufficient market share so as to influence the prices paid by consumers. That said, there may be markets that at first instance appear to be highly competitive due to the number of suppliers within each market. However, upon closer inspection, it may actually be that one or two of these suppliers control a large proportion of the market such that they are able to influence the prices paid by consumers in ways not expected in competitive markets.

The main types of market participants in the retail mobile services industry can be classified as:

- mobile network carriers – in the Australian mobile services industry there are currently four national mobile network carriers – Telstra, SingTel (Optus), Vodafone and Hutchison Telecommunications. Between them, these network carriers own and operate six mobile networks; and
- carriage service providers (CSPs) – these competitors retail and resell services to the public that are carried on the mobile network carriers’ networks.<sup>127</sup> The Australian Communications Authority (ACA) reports that in the 2001-02 financial year, the mobile industry consisted of 13 mobile CSPs, four of which are the mobile network carriers mentioned above.<sup>128</sup> In 2002-03, the ACA indicated that there had been a continuing expansion in the retail distribution of mobile phones, noting that while the main carriers and CSPs still maintain their own branded retail outlets, mobile phones are just as likely to be purchased from major electronics or department stores, and even from supermarkets, post offices, petrol stations and convenience stores.<sup>129</sup>

It is noted that CSPs can be further categorised into resellers and mobile virtual network operators (MVNOs). While there is some debate as to what constitutes an MVNO, some of the general characteristics of this type of competitor are that it:

- brings an existing well-known consumer brand to a mobile retail operation;
- uses the network of an existing mobile network carrier, but sets up a technical support layer that replicates the mobile network carrier’s mobile switching centre; and
- has control over the disposition of its customer base.

These characteristics, particularly the greater control an MVNO has over its retailing operation and therefore its greater capacity to provide different service offerings and prices, differentiates it from a pure reseller.<sup>130</sup> An example of an MVNO is Virgin Mobile, which was the first MVNO to launch services in Australia in late 2000.<sup>131</sup>

---

<sup>127</sup> For example, RSL Com resells Optus’ GSM services.

<sup>128</sup> ACA, *Telecommunications Performance Report 2001-02*, November 2001, p. 161.

<sup>129</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 88.

<sup>130</sup> See also P. Knott and D. Wilkins, *3G, MVNOs & Acquisitions: Opportunities for Entering New Markets*, 2000, <http://www.analysys.com/> for further details on the differences between MVNOs and resellers.

<sup>131</sup> Virgin purchases wholesale mobile capacity from Optus.

There is little reliable information available regarding the market shares of CSPs, resellers and MVNOs. However, as carriage on a mobile network is an essential input to any retail subscription package, an examination of the market shares of the mobile network carriers is a useful indicator of the degree of market concentration in the overall mobile services market.

Of the six networks referred to above, five of the existing networks currently employ 2G digital technologies using either GSM or CDMA standards. Two of these networks are operated by Telstra, which launched its GSM network in 1993. Telstra also has a nationwide CDMA network. Its CDMA network was launched following the closure of its analogue Advanced Mobile Phone System (AMPS) network in 2000.<sup>132</sup> Telstra has been the incumbent at the wholesale level since the first mobile network launch in 1987, while both Optus and Vodafone entered with GSM networks when the mobile market was partially opened up to competition in 1993. Hutchison entered the market in 1995 as a reseller for Optus GSM, and launched its own CDMA network in Sydney and Melbourne in July 2000. It ceased GSM reselling in October 2001.<sup>133</sup>

The remaining mobile telephony network is a third generation (3G) network operated by Hutchison. This network was launched on 15 April 2003 and uses the Wideband CDMA (W-CDMA) standard. At that stage the network enabled Hutchison to provide 3G telephony services to end-users in Sydney and Melbourne.<sup>134</sup> Hutchison expanded its 3G network to Perth, Adelaide, Brisbane and the Gold Coast in July 2003.

The Commission notes that another network, owned by One.Tel and based on the GSM standard, was closed in mid-2001 after One.Tel's exit from the telecommunications industry. The spectrum used by One.Tel for its network remains under the control of its administrator and negotiations regarding its purchase are yet to be resolved.<sup>135</sup>

Table 5.1 details the ownership, launch date, coverage and market shares of the current owners of mobile networks in Australia.

---

<sup>132</sup> AMPS is a first generation analogue solution, which was initially introduced into Australia in 1987 by Telecom Australia (Telstra).

<sup>133</sup> Optus, *Hutchison Telecoms and Optus in Mobile and Fibre Deals*, press release, 30 October 2001, [www.optus.com.au](http://www.optus.com.au)

<sup>134</sup> Hutchison Press Release, 'Hutchison launches 3', 15 April 2003.

<sup>135</sup> Sherman, Steven and Peter Walker, *One.Tel Ltd (In Liquidation)*, 2<sup>nd</sup> Annual Report pursuant to s. 508 Corporations Act, 6 August 2003, pp. 6-7.

**Table 5.1 Mobile networks in Australia and carrier market shares**

Carrier	Network	Launch	Coverage (% of population)	Market Shares*			
				FY2000	FY2001	FY 2002	FY2003
Telstra**	GSM	1993	96%	48.2% (45.8%)	46% (45.2%)	47.4% (43.5%)	45.8% (46.7%)
	CDMA	2000	98%				
Optus	GSM	1993	94%	33.4% (30.8%)	34% (32.6%)	33.8% (32.6%)	34.0% (33.2%)
Vodafone	GSM	1993	92%	18.3% (18.2%)	18.8% (16%)	16.9% (18.3%)	18.1% (17.3%)
Hutchison	CDMA	2000	Melb. & Syd.***	0.1% (5.7%)	1.1% (6.2%)	1.9% (5.6%)	
	W-CDMA	2003	Melb., Syd., Perth, Adel., Bris. & Gold Coast****				2.1% (2.8%)*** **

Source: BIS Shrapnel (2001), ACA report (2000-01), ACA Telecommunications Performance Report 2002-2003, ABN AMRO Telecommunications Services (2003), Macquarie (2002), mobile network carrier's annual reports

Notes: in addition to these six terrestrial networks, there are three satellite networks that Telstra, Optus and Vodafone use for mobile coverage.<sup>136</sup>

\*The market share estimates not contained within parentheses are based on subscriber numbers of the individual carriers in relation to overall numbers. The market share estimates in parentheses are based on the mobile carrier's revenue figures.

\*\* Market share estimates for Telstra show the estimated total market share of both its GSM and CDMA services.

\*\*\* Hutchison's customers roam onto Telstra's CDMA network when outside Hutchison's coverage area.

\*\*\*\* Hutchison's '3' customers roam onto Vodafone's GSM network when outside Hutchison's coverage area.

\*\*\*\*\* The ACA reported 20,000 subscribers for Hutchison's W-CDMA network '3', in its *Telecommunications Performance Report 2002-2003*. The market share shown for Hutchison for the 2002-03 financial year is the total market share for both Hutchison's 2G network and its 3G network.

Two types of market share estimates are provided in Table 5.1 – one based on subscriber numbers and the other on revenue figures. Most analysts base their market share figures on subscriber numbers. However, subscriber numbers can be distorted by competitors introducing new strategies such as changing their mobile plans to

<sup>136</sup> Telstra uses the Inmarsat geostationary satellite network, which is similar to Optus' MobileSat. Vodafone's Globalstar is a Low Earth Orbit (LEO) satellite system. See ACA, *Telecommunications Performance Report 2000-01*, November 2001, pp. 78-79. This paper does not include a discussion on satellite mobile services in its analysis.

increase the longevity of their customer base. In addition, the greater uptake of pre-paid services can also distort measures of subscriber growth, as each recharge SIM card counts as a separate subscriber. Accordingly, market share estimates based on revenues of the mobile network carriers are also provided.

The Commission notes that although there is some variation between market share estimates using subscriber numbers and market share estimates based on revenue, these two forms of market share for each carrier are not significantly different.

The estimates in Table 5.1 indicate that Telstra has continued to maintain the largest market share over the years, followed by Optus, Vodafone and Hutchison.

These estimates also indicate that the three largest mobile carriers, Telstra, Optus and Vodafone, account for 97.9 per cent of the retail mobile services market, in terms of subscribers.<sup>137</sup> The Commission does note, however, that this has decreased from the 99 per cent level it was in July 2001.<sup>138</sup>

The Commission also notes that the relative market shares of the mobile carriers have not changed significantly since the 2000-2001 financial year, suggesting market share in the retail mobile services market is stabilising.

Using the market share estimates provided in Table 5.1, the Herfindahl Index shows a measure of concentration of 0.359 for 2002-03 (using market share based on both subscriber numbers and revenue).<sup>139</sup> This indicates a level of concentration in the market greater than that of three equal sized triopolists (0.333).

Although the number of subscribers to Hutchison's '3' network appears to be growing rapidly,<sup>140</sup> the Commission notes that even this increase in subscribers has little effect on concentration levels in the market (when accounted for in calculating market shares and the Herfindahl Index).

As noted above, there is little data available about the market shares of CSPs and MVNOs within the retail mobile services market. However, even if such operators have sufficient market shares to reduce the concentration levels within the retail mobile services market to any great extent, these providers would still be heavily dependent on access to the networks of the four mobile network operators in order to provide services to their consumers. As such, the level of market concentration at the

---

<sup>137</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 6.

<sup>138</sup> See ACCC, *Pricing Methodology for the GSM Termination Service, Final Report*, July 2001, p. 32.

<sup>139</sup> There are several ways of measuring market power and the strength of competition. The Herfindahl Index is the most sophisticated of the concentration measures and is calculated by summing the square of the proportionate market share of each firm in the industry. A complete monopoly therefore has a score of 1, while a textbook perfectly competitive market has a score approaching zero. Hence, the closer the score is to zero the less the concentration of firms within the market. This is because the squaring of market shares effectively places a greater weight on producers with a greater market share. Duopolists with equal market share get a score of 0.5, but if one has 0.75 of the market the score is 0.65 (ie.  $0.75^2 + 0.25^2 = 0.625$ ). A triopoly evenly dividing the market scores 0.333, while a triopoly where one firm 'dominates' will have a score between 0.333 and 1 – ie. it will be more concentrated. See, for example J. Black, *Oxford Dictionary of Economics*, Oxford University Press, Oxford and New York, 1997, pp. 209-10.

<sup>140</sup> In February 2004, Hutchison announced that it had more than 100,000 subscribers to '3', which indicates it more than doubled its subscribers since its reporting to the ACA in June 2003.

mobile network carrier level significantly influences the level of competition in the retail mobile services market.

Therefore, despite the large number of competitors and the variations in service offering in the retail mobile services market, the Commission believes that the market is highly concentrated amongst the mobile network carriers.<sup>141</sup>

### **(b) Barriers to entry**

As noted already in section 5.3.2, in assessing the state of competition in a market, the Commission considers whether the threat of new entry will act to constrain the behaviour of existing market participants.

The Commission considers the following to be potential barriers to entry to the mobile services market:

- the need to obtain spectrum;
- the importance of achieving wide geographic coverage; and
- sunk costs.

#### ***The need to obtain spectrum***

The electromagnetic spectrum is the total span of radiofrequencies and corresponding wavelengths. The spectrum is used for delivering a wide variety of communications services to Australians.<sup>142</sup>

All mobile telecommunications systems need to utilise radiofrequency spectrum. Therefore, the need to acquire spectrum and the process by which it is acquired limit the extent to which the threat of entry can constrain the behaviour of the major mobile carriers. Without a process to allocate spectrum, or in the absence of a secondary market for trading rights to use spectrum, a prospective new mobile carrier cannot enter the retail mobile services market.<sup>143</sup>

The market for spectrum is complicated by its heterogeneous nature. Useable spectrum covers a large range of frequencies, but some frequencies are better suited to particular purposes than others. Even where the technical characteristics of different frequencies are similar, substitution possibilities are constrained by both planning rigidities and equipment availability.<sup>144</sup>

---

<sup>141</sup> The ACA reports that there are over 700 different mobile service plans on offer from carriers and service providers in the mobiles market in its *Telecommunications Performance Report 2002-03*, December 2003, p. 91.

<sup>142</sup> ACA Fact Sheet, *About the ACA*, [http://www.aca.gov.au/aca\\_home/about\\_aca/aca\\_law/aboutaca.htm](http://www.aca.gov.au/aca_home/about_aca/aca_law/aboutaca.htm)

<sup>143</sup> The Commission notes that frequencies for mobile telephony services are licensed by spectrum licences and the licences are allocated by public auctions conducted by the ACA. See ACA Fact Sheet, *About the ACA*, [http://www.aca.gov.au/aca\\_home/about\\_aca/aca\\_law/aboutaca.htm](http://www.aca.gov.au/aca_home/about_aca/aca_law/aboutaca.htm)

<sup>144</sup> Productivity Commission, *Radiocommunications Inquiry Report, Report Number 22*, 1 July 2002, p. XXXII.

At present, the ACA manages access to the radiofrequency spectrum through spectrum planning and licensing. To make sure that spectrum is used efficiently, and to minimise the risk of interference between services, the ACA has a comprehensive system for licensing spectrum use. The ACA uses spectrum auctions for price-based allocation of certain frequencies.<sup>145</sup>

The spectrum used for the transmission of GSM signals between base stations and mobile stations or handsets was initially limited to the 900 MHz band. All three GSM carriers operate in the 900 MHz band. In 1998 and 2000, further spectrum in the 1800 MHz band was made available through a spectrum auction conducted by the Government. In addition to the existing three GSM carriers, several other operators purchased 1800 MHz spectrum. However, none of these other carriers is using the spectrum to provide mobile services at present.<sup>146</sup> Hutchison and Telstra use 800 MHz band spectrum to provide 2G and 2.5G CDMA services.

In March 2001, the Government auctioned 3G mobile spectrum licences in the 2GHz band. The release of this new spectrum provided an opportunity for new entrants to the retail mobile services market. Table 5.2 below outlines the successful bidders, spectrum bought, geographic coverage and the cost of the licence. In this regard, the Commission notes that Hutchison's 3G W-CDMA services use spectrum in the 2 GHz band that it acquired through the Government's auction of 3G mobile spectrum licences.

---

<sup>145</sup> ACA Fact Sheet, *About the ACA*,  
[http://www.aca.gov.au/aca\\_home/about\\_aca/aca\\_law/aboutaca.htm](http://www.aca.gov.au/aca_home/about_aca/aca_law/aboutaca.htm).

<sup>146</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 88.

**Table 5.2 Spectrum Holders of 3G licenses**

<b>Operator</b>	<b>Cost</b>	<b>Spectrum</b>	<b>Coverage</b>
Telstra	\$302 million	15MHz paired spectrum in all capital cities 10MHz paired spectrum in regional areas 5MHz unpaired spectrum in all capital cities	National
Optus	\$248 million	10MHz paired spectrum in all capital cities 5MHz paired spectrum in regional areas 5MHz unpaired spectrum in 5 cities	National
Vodafone	\$253 million	15MHz paired spectrum in all capital cities 5MHz paired spectrum in regional areas 5MHz unpaired spectrum in all capital cities	National
Hutchison	\$196 million	15MHz paired spectrum in Sydney and Melbourne 10MHz paired spectrum in Brisbane, Adelaide and Perth	5 Major Cities (Sydney, Melbourne, Brisbane, Adelaide and Perth)
3G Investments (Qualcomm)	\$153 million	10MHz paired spectrum in all capital cities	All capital cities
CKW Wireless (Arraycomm)	\$9.5 million	5MHz unpaired spectrum in all capital cities	

*Source: BIS Shrapnel (2001).*

While the largest bidders were the incumbent mobile network carriers (of whom, only one – Hutchison – has utilised the 3G mobile spectrum), the auction also saw the entry of two new entities into the Australian mobile market – Qualcomm and CKW Wireless. 3G Investments (Qualcomm) paid \$159 million for spectrum in all capital cities; and CKW Wireless (now Personal Broadband Australia, PBBA) paid \$9 million for unpaired spectrum<sup>147</sup> in all capital cities.<sup>148</sup> However, while PBBA has

<sup>147</sup> Paired spectrum allows for both the transmission and reception of information, with the same bandwidth upstream and downstream. This suits more symmetrical applications like voice. Unpaired spectrum allows for transmission only, generally with asymmetric bandwidth between upstream and downstream directions. This suits the asymmetric provision of data, particularly services such as the Internet.

<sup>148</sup> Productivity Commission, *Telecommunications Competition Regulation, Report Number 16*, 20 September 2001, p. 130.

announced new funding for its plan to install a national 3G network to provide wireless broadband, Qualcomm remains non-committal about its plans at this stage.<sup>149</sup>

The Commission notes that there have been no mobile spectrum auctions since 2001. Since this time, there has been a slowing of growth in the communications sector and the exit from the industry of a number of market participants, notably One.Tel, which closed its GSM network in mid-2001. The Commission notes that in addition to the spectrum used by One.Tel for its network, which remains unused, there are also other significant holdings of spectrum not currently being utilised, particularly in the 3G 2 GHz band.

The Commission also notes that in its *Forward Program of Spectrum Auctions and Conversions 2002-2004* report, the ACA identified the allocation of spectrum for mobile services as being of low priority, 'given expected demand'.<sup>150</sup>

Therefore, it appears that there is significant excess capacity with respect to mobile spectrum in the short to medium term.

The Commission also notes that as technology develops, currently unusable radiofrequencies may become capable for use in the delivery of communications, including mobile telephony services. This has the potential to limit the extent to which access to spectrum represents a barrier to entry.

### ***The importance of national geographic coverage***

The Commission believes that national geographic coverage is an entry-level constraint to the retail mobile services market, as consumers are unlikely to subscribe to a mobile network which limits the regions they could make calls from or to – especially if other carriers offer national coverage for an equivalent price. Accordingly, the need for national coverage by a new entrant's network can be a significant barrier to entry into the retail mobile services market.

At present, the combined CDMA and GSM networks of Telstra, Optus and Vodafone cover over 98 per cent and 96 per cent of the population, respectively.<sup>151</sup> These carriers continue to increase the terrestrial coverage of their networks, with Telstra building an additional 419 CDMA base stations, Optus installing 400 new GSM base stations and Vodafone installing 129 base stations during the 2002-03 financial year.<sup>152</sup>

---

<sup>149</sup> CKW Wireless installation of its network was underway in December 2002 and successful trials completed in 2003. The network focuses on the provision of broadband access to laptops or Personal Digital Assistants (PDAs). Vodafone is one of the partners in the provision of this service. See R. Ramsey, *Whatever Happened to the 3G Dream?*, Australian Telecom, North Sydney, September 2002, p.18; DCITA, *Australia Leads World in New Wireless Broadband Roll-out*, 19 December 2002, [www.dcita.gov.au](http://www.dcita.gov.au) and Personal Broadband Australia, *PBBA Enters New Phase with A\$12m in New Funding and Welcomes Jim Cooney as New CEO*, press release, 19 January 2004, [www.iburst.com.au/site/index.php](http://www.iburst.com.au/site/index.php)

<sup>150</sup> ACA, *Forward Program of Spectrum Auctions and Conversions 2002-2004*, May 2002, p. 14.

<sup>151</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 90.

<sup>152</sup> *Ibid.*



The Commission notes that it is possible for a new entrant to achieve national geographic coverage by entering into a roaming agreement, or roaming agreements, with other carriers who have such coverage. However, due to the ability of incumbents to control a new entrant's access to networks necessary to achieve national geographic coverage, the extent to which such entry represents a threat to the incumbents is diminished.

An example of the importance of national coverage can be seen in the case of Hutchison. Full national coverage is achieved by Hutchison through roaming agreements with both Telstra and Vodafone, for its 2G and 3G services respectively. If Hutchison only offered mobile services in regions where it had installed its own networks (Melbourne and Sydney for 2G, and Melbourne, Sydney, Perth, Adelaide, Brisbane and the Gold Coast for 3G), it would find it difficult to attract mobile subscribers to its networks. This is particularly likely with respect to Hutchison's 2G CDMA network, where roaming in areas where GSM services are not available is likely to be a key factor for consumers in subscribing to CDMA services.

### ***Sunk costs***

As noted previously, in order to be able to compete effectively in the retail mobile services market, a carrier needs to ensure national geographic coverage of its network. The costs associated with establishing base stations and other mobile infrastructure to achieve national geographic coverage necessitates significant up-front investment costs by new entrants and can represent a significant barrier to entry.

Table 5.3 details each mobile carrier's investment in infrastructure needed to provide mobile telephony services in Australia over the period 1998-99 to 2001-03.

**Table 5.3 Carrier expenditure on the infrastructure needed to provide mobile telephony services**

<i>Financial year (\$millions)</i>					
	<i>1998-99</i>	<i>1999-00</i>	<i>2000-01</i>	<i>2001-02</i>	<i>2002-03</i>
Telstra	616	628	390	255	449
Optus	Not reported	396	405	411	Not reported
Vodafone	253	349	700	250	Not reported
Hutchison	Not reported	745	660	411	362

*Source: carrier's annual reports, various analyst's reports*

Notes: the accounting period of the carriers vary. For instance, accounting year end for Telstra is 30 June, for Optus and Vodafone it is 31 March and for Hutchison it is 31 December.

Table 5.3 shows that all carriers have been investing heavily in infrastructure needed to provide mobile telephony services over recent years. The Commission believes fluctuations in investments over the years can largely be explained by the timing of the commencement and completion of major capital expenditure projects.

Whilst a mobile carrier can reduce commercial risk by setting up local networks and negotiating domestic roaming arrangements with other mobile network operators, the extent of any such reduction will depend on the terms and conditions of any roaming agreements. The Commission also notes that carriers may choose to overcome high sunk costs by entering into infrastructure sharing agreements with other mobile carriers.

A new market entrant may also choose to reduce commercial risk and avoid high sunk costs by becoming a MVNO. This may introduce some competition in the retail mobile services market but is unlikely to restrict the market power of the network owner who will still be able to influence the cost base of the new MVNO with respect to the network costs.

The Commission notes that there have been no new entrants building their own 2G mobile telephony networks since Hutchison and One.Tel launched their networks in 2000. Further, the Productivity Commission's belief that there are significant difficulties faced by new entrants in gaining sufficient market share for their networks in order for such investment to be viable in the mobile industry<sup>153</sup> suggests that sunk costs may be the most significant barrier to entry into the mobile services market.

The Commission notes that Hutchison announced the expansion of its 2G CDMA network capacity, which was to commence some time in March 2004.<sup>154</sup> However, it appears that Hutchison's roaming arrangement with Telstra, outside of Melbourne and Sydney, will continue, suggesting that sunk costs remain a significant barrier to full entry into the market.

Whilst 2003 has seen Hutchison implement its 3G mobile network in Melbourne, Sydney, Perth, Adelaide, Brisbane and the Gold Coast, the Commission notes that national coverage is achieved through a roaming agreement with Vodafone.

Further capital expenditure by the other incumbent carriers may also occur in the near future. Both Vodafone and Optus have announced their intentions to upgrade their networks to 3G technology. Analysts have also suggested that, if its main rivals move to 3G technology, then Telstra can be expected to bring forward its 3G network upgrade.<sup>155</sup> This is estimated to involve an increase of \$500 million in capital expenditure by Telstra per financial year for 2004-05 and 2005-06.<sup>156</sup> Although

---

<sup>153</sup> Productivity Commission, *Telecommunications Competition Regulation*, September 2001 p. 128. However, it should be noted that One.Tel's financial difficulties also extended beyond the mobile division.

<sup>154</sup> Hutchison, *Hutchison Expands Orange CDMA Network Capacity*, press release, 23 January 2004.

<sup>155</sup> Macquarie Research Equities, *Telstra Corporation IH04 result: Reconciling the results with the vision*, 13 February 2004, p. 16.

<sup>156</sup> *Ibid.*

PBBA has indicated an intention to install a national network to provide 3G services, it is yet to commence roll-out beyond the trial networks stage.<sup>157</sup>

### ***Conclusion***

The Commission considers there are certain barriers to entry to the mobile services market, including (to various degrees) the need to acquire spectrum, national geographic coverage and the sunk costs associated with a mobile network.

Access to spectrum for mobile telephony services represents a potential barrier to entry in the future. In the event that all spectrum identified for use for mobile telephony is utilised by incumbent carriers (that is, it has been both allocated and is not available for trading between carriers and potential carriers) and the ACA does not auction new spectrum to meet demand, then access to spectrum could be (but will not necessarily be) a significant barrier to entry to the retail mobile services market.<sup>158</sup>

The Commission recognises that the barriers of national geographic coverage and the sunk costs associated with a new network can be partially overcome through roaming arrangements with incumbent carriers that operate the relevant networks or via infrastructure sharing arrangements. However, the likelihood of new entrants using roaming agreements to achieve national coverage and avoid high sunk costs can significantly reduce the threat such entry represents to incumbents. This is because the incumbents will maintain control over their networks and will be able to control (to at least some extent) the costs faced by such new entrants.

Accordingly, the Commission's view is that there are substantial barriers to (full) entry to the retail mobile services market, which prevent the threat of entry operating as an effective constraint on the behaviour of incumbents.

### **(c) Market growth**

Whether a market is growing, or declining, can have significant implications for the potential erosion of market power over time. Markets which are growing rapidly are more likely to see new entry, the erosion of market power and greater competition over time.

The Commission considers the following to be useful indicators of the scope for growth in the retail mobile services market:

- subscriber growth and the level of penetration of mobile phones within the population;
- changes in average revenue per user (ARPU) and revenue growth versus cost growth; and
- technological developments for future services.

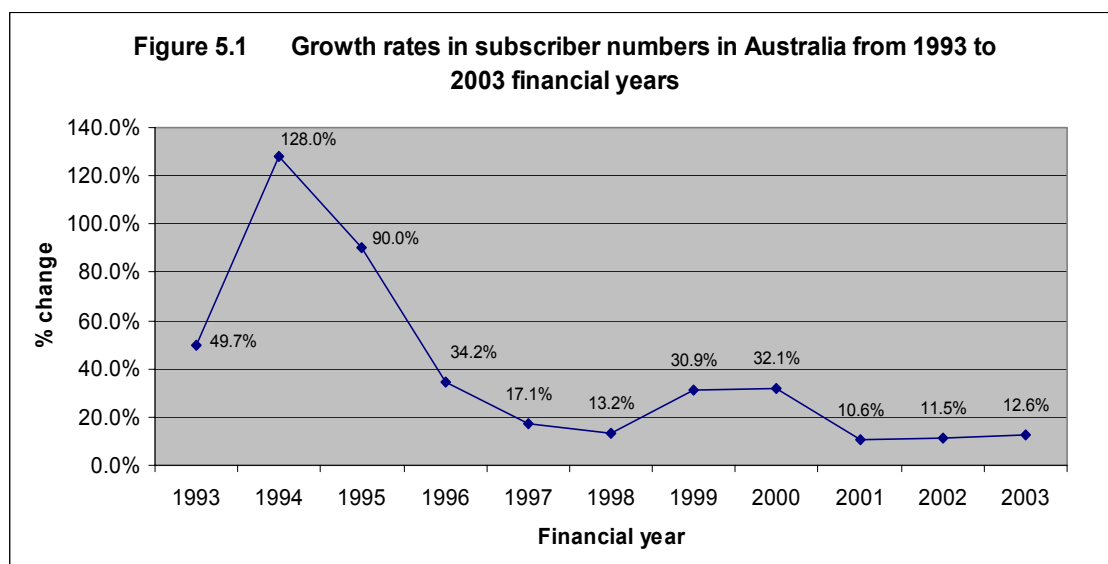
---

<sup>157</sup> PBBA, *op. cit.*

<sup>158</sup> The ACA has the ability to auction more spectrum as it is needed under the *Radiocommunications Act 1992*.

### ***Subscriber growth and mobile penetration rates***

The Australian retail mobile services industry experienced rapid growth in the ten year period from 1993 to 2003. However, from the 2000-01 financial year, growth in mobile subscriber numbers appears to have stabilised. Figure 5.1 provides an overview of growth rates in the Australian mobile subscriber base from the 1992-93 to 2002-03 financial years.



Source: BIS Shrapnel (2001), ACA (2002), ACA (2003).

As Figure 5.1 illustrates, from 1992-93 to 1993-94, mobile subscriptions increased by 128 per cent. Whilst this should not be entirely surprising given it was the period immediately after Optus and Vodafone commenced the provision of mobile telephony services in Australia, this was the highest growth rate in subscriber numbers, compared to all other periods. After this point there were progressively declining growth rates until 1998-99, where a growth rate in subscriber numbers of 30.9 per cent was achieved. For the next financial year the growth rate increased slightly to 32.1 percent. During the 2000-01 financial year subscriber numbers were still increasing at 10.6 per cent, but this was the lowest growth level for any period, to date. The 2001-02 financial year saw the subscriber growth rate increase slightly, to approximately 11.5 per cent. In the 2002-03 financial year the growth rate increased further, to 12.6 per cent.

Industry reports suggest that high growth in the Australian retail mobile services market has largely been driven by subscriber growth, which is now moderating as the mobile services market reaches maturity.<sup>159</sup> Information available to the Commission suggests that the penetration rate for mobiles was likely to be between 71.9 per cent and 73 per cent at 30 June 2003.<sup>160</sup>

The relatively high penetration rate for mobile phones and the relatively stable rates of subscriber growth in recent years suggest that the market for mobiles is reaching

<sup>159</sup> ABN AMRO, *Australian Telecommunications 2004*, Sydney, 2003, p. 30.

<sup>160</sup> *Ibid.*, p. 29; ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 90.

maturity and that new entry on the basis of rapid expansion of the market is highly unlikely.

### ***Revenue growth***

The extent to which revenue is growing in a market can indicate whether demand in the market is such that economic profits are being achieved by incumbents. As demand increases, operators are often able to achieve economies of scale by producing more output to meet demand whilst at the same time reducing the average cost of producing a single unit. This reduction in average costs often occurs while the average revenue per unit (ARPU) remains constant (or even rises), which allows the operators to enjoy economic profits. The presence of these economic profits can indicate that new entry into the market is likely, in response to the opportunity to capture these profits.

On this basis, the Commission looks at the changes in revenue, the changes in the levels of growth in revenue and also the ARPU in order to assess whether a market is growing. If changes in revenue suggest that a market is growing, this may indicate that new entrants might find it economic to start operating in the market, thereby increasing the level of competitive influence within that market.

Revenue figures quoted in this section are taken from ABN AMRO's 2003 publication *Australian Telecommunications 2004*. All revenue is calculated on a retail basis – that is excluding resale – and therefore does not include resale revenue from services provided for on-selling, such as mobile termination services.

### ***Levels of revenue growth***

Over the last few years, the retail mobile services sector has experienced significant revenue growth. For the 2002-03 financial year, mobile revenue represented approximately 27.9 per cent of total service revenue of telecommunications companies.<sup>161</sup> According to ABN AMRO, mobile revenue growth has accounted for 42 per cent of the telecommunications market's overall growth since 1997-98,<sup>162</sup> making it the second largest source of revenue for the industry (second only to fixed voice services but with far greater growth rates).<sup>163</sup>

Recent growth in mobile revenue reflects the trend of subscriber numbers – moderation of growth after rapid expansion. This is illustrated by Table 5.4, which shows that while the 1999-2000 financial year saw a significant growth rate of 20.7 per cent, this slowed to 19.3 per cent in 2000-01. In 2001-02, mobile revenue growth moderated to 11.0 per cent and slowed again in 2002-03, with growth in mobile revenue increasing by 8.4 per cent.

---

<sup>161</sup> ABN AMRO, *op cit*, p. 13.

<sup>162</sup> *Ibid.*, p. 29.

<sup>163</sup> *Ibid.*, p. 13.

**Table 5.4 Trend in industry mobile growth**

	<b>FY 1999-00</b>	<b>FY 2000-01</b>	<b>FY 2001-02</b>	<b>FY 2002-03</b>
<b>Total revenue (\$Am)</b>	6,125	7,305	8,110	8,791
<b>Growth (%)</b>	20.7	19.3	11.0	8.4

Source: ABN AMRO, *Australian Telecommunications 2004*, 2003.

Given the moderation in revenue growth, some commentators suggest that future growth in revenue will need to be driven by increased data usage by existing subscribers.<sup>164</sup> The majority of growth in data services has been provided by the short messaging service (SMS), which became available in 1993. The growth in this value-added service has been substantial. The ACA reported that the total number of SMS messages sent in 2002-03 increased by 44 per cent compared with the previous year. The ACA noted the importance of SMS to operators was increasing, with SMS accounting for an average of 9 per cent of revenue for all mobile operators in 2002-03.<sup>165</sup> With Optus, Vodafone and Telstra offering MMS on their GSM networks from August 2002, future revenue growth may come from the development of new services rather than growth in subscriber numbers.<sup>166</sup> The ACA notes that MMS is expected to grow significantly over the next 12 months, with a higher proportion of handsets being equipped with MMS capability and the finalisation of interoperability of agreements between carriers and the continued development of new applications.<sup>167</sup>

This expectation of new data services driving future revenue growth appears to be supported by Vodafone's 2003/2004 Business Plan, where Vodafone identifies future market actions to include:

- 'steal '3's thunder and grab the desired customer mind-space before they do';
- 'fight for status quo on voice and develop new models for media rich alternatives to interconnect charge in future';
- 'establish live! as a success; accelerate 3G roll-out if required; strong regional approach to content/apps';
- 'accelerate live!+ services, content, apps; and
- ensure global partnering the major device players'.<sup>168</sup>

<sup>164</sup> See for example Macquarie Research Equities, *Australian Telecoms Sector*, August 2002.

<sup>165</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 89.

<sup>166</sup> *Ibid.*, p. 91.

<sup>167</sup> *Ibid.*, p. 92.

<sup>168</sup> Vodafone, *Vodafone Australia 2003/2004 Business Plan* as set out in JBWere, *Australian Telecommunications Sector Review 2003*, May 2003, p. 20.

### Revenue growth per user

The Commission also considers ARPU data to be a useful indicator of market growth.

Table 5.5 shows that, overall, ARPU in the retail mobile services market has been decreasing over time, and that data revenue is increasingly being relied upon by mobile carriers to increase retail mobile services revenue levels. Whilst results for the half-year to December 2003 do show that Optus increased its ARPU, Macquarie believes this to be the exception to the industry trend.<sup>169</sup>

**Table 5.5 ARPU for mobiles by carrier and service (\$/month)**

Year	1998	1999	2000	2001	2002	2003
<b>Telstra</b>	67.96	71.75	70.86	63.69	59.54	54.69
Voice	64.25	67.47	64.08	54.83	52.66	50.18
Data	0.23	0.26	1.01	2.2	3.24	4.51
<b>Optus</b>	71.56	67.42	60.48	53.21	50.65	53.4
Voice	71.56	66.74	58.66	50.02	46.6	48.06
Data		0.67	1.81	3.19	4.05	5.34
<b>Vodafone</b>	62.38	63.25	60.74	58.44	56.65	48.88
Voice	62.38	62.62	58.92	54.94	52.11	43.99
Data		0.63	1.82	3.51	4.53	4.89
<b>Hutchison</b>				79.49	96.37	75.02
Voice				78.69	93.97	72.02
Data				0.79	2.41	3.00
<b>Overall</b>	65.66	65.03	59.59	54.11	53.74	51.13

Source: ABN AMRO, *Australian Telecommunications 2004*, 2003.

The decrease in ARPU over time is consistent with analysts' conclusions that the market is maturing and that future growth is likely to be much lower than has been the case to date.<sup>170</sup>

Recent data also show that new subscribers are likely to be relatively low-usage (and low revenue) pre-paid customers. Table 5.6 shows that whilst subscriber numbers grew by 13.9 per cent in the 2002-03 year, most of this increase can be attributed to the increase in the number of prepaid customers, up 1.52 million, compared to an increase of just 244,000 post-paid subscribers.

<sup>169</sup> Macquarie Research Equities, *SingTel Strong Result, But Watch for the One-offs*, 6 February 2004, p. 9.

<sup>170</sup> For example, see JBWere, *Australian Telecommunications Sector Review 2003*, May 2003, p. 15.

**Table 5.6 Subscribers by payment method**

<b>Year ending</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
<b>Post paid (m)</b>	5.145	5.951	7.292	8.286	8.497	8.741
<b>Prepaid (m)</b>	0.169	0.552	1.257	2.963	4.086	5.606

Source: ABN AMRO, *Australian Telecommunications 2004*, 2003.

### *Technological Developments*

As discussed above, without the introduction of significant new products to stimulate consumer demand and revenues, it is unlikely that the retail mobile services market will see rapid growth in the future. Accordingly, the Commission also has regard to emerging technological developments when considering the level of growth in a market and the state of competition in that market.

While SMS has been a ‘stunning success’ for all mobile operators,<sup>171</sup> other mobile data services, such as Wireless Application Protocol (WAP)<sup>172</sup> have received muted consumer response. In 2001, less than 5 per cent of mobile users were using WAP applications.<sup>173</sup> Analysts of these applications have suggested that major inhibitors to the wide-spread consumer take-up may have been the limited content and applications, and the high cost of compatible handsets.<sup>174</sup>

JB Were has expressed the view that similar problems are affecting the take up of MMS. However, this view is in contrast to that of the ACA, which has stated that MMS is expected to grow significantly over the next 12 months, due to a higher proportion of handsets being equipped with MMS capability. The ACA also stated that finalisation of interoperability agreements between the carriers and the continued development of new applications that provide high definition pictures will encourage further growth.<sup>175</sup>

As has been noted elsewhere in this report, Hutchison launched its 3G network in April 2003, offering mobile services such as mobile video calling, MMS, text based content, video content, games and polyphonic ring tones.<sup>176</sup> In February 2004, Hutchison announced that ‘3’ subscribers numbered over 100,000 by December 2003 – more than double that which it reported to the ACA in June 2003.<sup>177</sup>

<sup>171</sup> JBWere, *Australian Telecommunications Sector Review 2003*, May 2003, p. 26.

<sup>172</sup> WAP is a free, unlicensed, protocol for wireless communications that makes it possible to create advanced telecommunications services and to access Internet pages from a mobile phone. It is an industry standard supported by a large number of suppliers. WAP supports most wireless network standards, including CDMA and GSM.

<sup>173</sup> ACA, *Telecommunications Performance Report 2000-02*, November 2001, p. 78.

<sup>174</sup> JP Morgan, *Australian Mobile Industry*, May 2001, p. 31; ABN AMRO, *Diverging Strategies on Data*, August 12, 2002, p. 1.

<sup>175</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 92.

<sup>176</sup> JBWere, *Australian Telecommunications Sector Review 2003*, May 2003, p. 27.

<sup>177</sup> See Hutchison Media Release, *Hutchison Attracts Strong Customer and Revenue Growth*, 17 February 2004; ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 87.



The other mobile operators have upgraded their networks to 2.5G, to provide services similar to those provided on a 3G network and also appear to be experiencing some growth in subscriber numbers. For example, in February 2004, Vodafone reported it had over 100,000 subscribers to 'Vodafone live!', its 2.5G multimedia offering that has been available since April 2003.<sup>178</sup> Further, the Commission notes that since '3' commenced operations, Vodafone has announced plans to launch a 3G network in 2005.<sup>179</sup>

Some analysts have commented that they expect the take-up rate for 3G services will be slow. Macquarie estimated a gradual take-up for 3G services in Australia, building from 21,000 by the end of 2002-03 financial year, to 829,000 (5.2 per cent of total subscriber base) in 2005, and 5.7 million (30 per cent of total subscriber base) by 2010.<sup>180</sup> ABN AMRO has estimated figures around the same magnitude, predicting a subscriber base for 3G services of 629,000 for the 2004-05 financial year, and 5.837 million subscribers for the 2007-08 financial year.<sup>181</sup>

### ***Conclusion***

The Commission considers that without a significant change in the market (such as a highly valued new product) the moderating revenue growth and the decreasing ARPU may indicate the mobile market will not experience rapid growth in the future.

The Commission believes that 2.5G and 3G services may drive some extra growth in both subscriber numbers and revenue. However, with the mobile penetration rate at a relatively high level already, and the 'add-on' appearance of 2.5G and 3G services from a customer perspective, it may be that revenue from these services will 'cannibalise' revenues now attributed to 2G services, to some extent.

Accordingly, the Commission considers that without significant growth in the future, additional market participants may not have sufficient incentives to enter the mobile services market.

### **(d) Price Conduct**

A competitive market can be expected to deliver goods and services to consumers at minimum cost. In principle, prices are said to be at competitive levels when they are close to or at cost, allowing for a normal rate of return.

In examining price conduct of market participants, the Commission looks at changes in prices of services over time, the profitability of participants over time and also the degree of product differentiation within the particular market.

### ***Existing retail price regulation***

Since 1989, firstly Austel and, from 1997, the Commission have regulated the retail prices charged by Telstra for certain telecommunications services by ascertaining

---

<sup>178</sup> Vodafone News Release, *Vodafone live! Announces Over 100,000 Customers*, 16 February 2004.

<sup>179</sup> Vodafone News Release, *Vodafone to Go it Alone for First Phase of 3G*, 26 November 2003.

<sup>180</sup> Macquarie Research Equities, *Australian Telecom Sector*, August 2002, p. 42.

<sup>181</sup> ABN AMRO, *Australian Telecommunications 2004, 2003*, p. 41.

whether Telstra (or its predecessors, Telecom and the Overseas Telecommunications Corporation (OTC)) has complied with legislated price control arrangements. The current price control arrangements are set out in the *Telstra Carrier Charges – Price Control Arrangements, Notification and Disallowance Determination No.1 of 2002* (the Determination). One of the telecommunications services subject to the price control arrangements is FTM services. It is noted that while MTM services are no longer subject to the price control arrangements, they were included in previous price control arrangements from July 1992 to June 2002. The current set of price control arrangements run from 1 July 2002 to 30 June 2005. The current price control arrangements have two major components. The first component is a CPI – 4.5 per cent price cap on a basket of telecommunications call services comprising local calls, national long distance (NLD), FTM and International long distance (IDD) calls. Second, there is a CPI + 4 per cent price cap on line rentals. While some services are subject to sub-caps, FTM has not been and is not currently subject to a sub-cap.

### ***Data on retail price movements***

The Commission can gain information in relation to retail mobile price movements from several sources. These include:

- information the Commission collects in order for it to perform its legislative functions with regard to assessing Telstra’s compliance with the retail price control arrangements;
- information the Commission uses to measure changes in the prices paid by consumers of telecommunications services in order to meet its annual reporting obligations under Division 12, Part XIB of the Act,<sup>182</sup> and
- information obtained for the purposes of implementing the retail benchmarking approach applied to the mobile termination service.

Each of these is discussed further below.

### ***Telstra’s price control report***

Under the Determination, Telstra is required to provide an audited report to the Commission in relation to its compliance with the retail price control arrangements. The report is required to be provided to the Commission before the end of the three months after the end of the financial year in which the price cap applies. Under subclause 9(3) of the Determination, price movements are to be calculated according to a methodology the Commission establishes in consultation with Telstra. Table 5.7 details Telstra’s reported price movements for mobile services over the 1999-2000 to 2001-02 financial years. Telstra’s retail price movements for the 2002-03 financial year are currently being assessed by the Commission in accordance with the Determination. However, as indicated above, retail mobile services are no longer subject to retail price control obligations.

---

<sup>182</sup> Under Division 12, Part XIB of the Act, the Commission is required to report to the Minister for the Communications, Information Technology and the Arts each year on changes in the prices paid for telecommunications services by Australian consumers.

**Table 5.7 Telstra's compliance with the price-cap for the first basket**

	Price movements for each financial year(%)		
	1999-00	2000-01	2001-02
Mobile services	-3.6	-14.2	-9.0
Overall	-6.7	-3.9	-2.7

*Source: Telstra's price control reports*

*The 'Division 12' (Retail Price Changes) Report*

Under Division 12, Part XIB of the Act, the Commission is required to annually report to the Minister for Communications, Information Technology and the Arts in relation to changes in the prices paid by consumers for telecommunications services in Australia (the 'Division 12' Report). Mobile retail services and FTM services are included amongst the services reported by the Commission to the Minister.

To fulfil this reporting requirement, the Commission is provided with financial year information for fixed-line services by four major carriers – Telstra, Optus, AAPT, and Primus.<sup>183</sup> The Division 12 Report is able then to report on real retail price movements for a range of telephony services, and disaggregate these price movements by 'residential', 'small business' and 'other business' consumer groups for fixed-line PSTN services (including FTM services).

For retail mobile services, data are collected from the three largest mobile carriers – Telstra, Optus and Vodafone. The price indexes constructed from these data reflect the movement in the aggregate retail real prices paid by post-paid consumers of GSM services since 1997-98. The Commission notes that the 2001-02 Division 12 Report, also included, for the first time, a price index measuring the change in prices paid by pre-paid consumers of GSM mobile services. The Division 12 Report for 2001-02 also disaggregates the retail price movement for GSM post-paid and pre-paid consumers by different user groups. The plan types range from very low to very high user groups.

A summary of the reported mobile retail price changes in the Division 12 Report from 1997-98 to 2001-02 is provided in Tables 5.8 and 5.9 below.

<sup>183</sup> One.Tel also provided data to the Commission for the purposes of this report, prior to its departure from the telecommunications industry in 2001.

**Table 5.8 Year-on-year changes in the retail prices paid for GSM mobile services by consumers from 1997-98 to 2001-02**

	<b>1997-98 – 1998-99</b>	<b>1998-99 – 1999-00</b>	<b>1999-00 – 2000-01</b>	<b>2000-01 – 2001-02</b>
<b>MTM</b>	-3.8	-12.3	-6.7	-2.5
<b>FTM</b>	-5.3	-7.9	-6.2	-3.2

Source: ACCC, *Changes for prices paid for telecommunications services in Australia*, June 2003.  
\*base year of the index is 1996-97 where the index equals 100.

**Table 5.9 Year-on-year changes in the retail prices paid for post-paid and pre-paid GSM mobile services by consumers from 1997-98 to 2001-02**

	<b>1997-98 – 1998-99</b>	<b>1998-99 – 1999-00</b>	<b>1999-00 – 2000-01</b>	<b>2000-01 – 2001-02</b>
Pre-paid	-3.8	-13.4	-5.2	-0.9
Post-paid	n/a	-10.7	-13.2	-5.0
Weighted- average total mobile	-3.8	-12.3	-6.7	-2.5

Source: ACCC, *Changes for prices paid for telecommunications in Australia*, June 2003.  
\*base year of the index is 1996-97 where the index equals 100.

The overall index for mobile telephony services has trended downward since 1997-98 indicating that, on average, prices paid by consumers for mobile telephony services have, in real terms, declined by 23.3 per cent over this time. However, as shown in Table 5.8, the overall rate of decline slowed from 12.3 per cent in 1999-00 to 2.5 per cent in the 2001-02 financial year.

For the Division 12 Report for 2002-03, the Commission has also moved to measure price changes for CDMA retail mobile services for the first time. The Commission notes that preliminary estimates of changes in prices paid for mobile telephony services indicate retail prices are likely, on average, to have increased in real terms during the 2002-03 financial year.

#### *GSM retail benchmarking process*

The retail benchmarking approach was determined by the Commission, in its final report, *Pricing Methodology for the GSM Termination Service*, to be the appropriate pricing approach in the event of an arbitration in relation to the provision of mobile services. Details on this pricing principle are provided in Chapter Eight below. In order to implement this approach, mobile carriers provide relevant information to the

Commission to calculate retail price movements relative to wholesale price movements.

The three largest mobile carriers – Telstra, Optus and Vodafone – report to the Commission according to the same six-monthly timeframes as those required for the Regulatory Accounting Framework (RAF) reports carriers provide to the Commission, and also contain disaggregations of relevant RAF line items. The changes in retail prices for GSM mobile services, as measured under the GSM retail benchmarking monitoring program, show fluctuations between price increases and decreases from 2001 up to 2003, with considerable variation between the carriers.

Tables 5.10, 5.11 and 5.12 show the retail price movements for Telstra, Optus and Vodafone between 2001 and 2003.

**Table 5.10 Telstra’s retail price movements**

	Jan–Jun 2001	Jul–Dec 2001	Jan–Jun 2002	Jul–Dec 2002	Jan – Jun 2003
Telstra base period		-1.4%	+7.5%	-1.7%	-1.6%

*Source: ACCC, A monitoring report associated with the implementation of the pricing methodology for the GSM termination service, August 2003 and carrier reports to the Commission.*

**Table 5.11 Optus’ retail price movements**

	Oct 2000– Mar 2001	Apr–Sep 2001	Oct 2001– Mar 2002	Apr–Sep 2002	Oct – Mar 2003
SingTel Optus base period		+9.9%	+6.8%	-3.7%	0.0%

*Source: ACCC, A monitoring report associated with the implementation of the pricing methodology for the GSM termination service, August 2003 and carrier reports to the Commission.*

**Table 5.12 Vodafone’s retail price movements**

	Jan–Jun 2001	Jul–Dec 2001	Jan–Jun 2002	Jul–Dec 2002	Jan – Jun 2003
Vodafone base period			+3.6%	-9.0%	-1.9%

*Source: ACCC, A monitoring report associated with the implementation of the pricing methodology for the GSM termination service, August 2003 and carrier reports to the Commission.*

The Commission notes that differences in the pricing measures between price control reports, Division 12 Reports and retail benchmarking reports can be explained, to some degree, by:

- the different time periods used by different carriers for retail benchmarking measures;
- the examination of real price change under the price control measures and the Division 12 report, as opposed to the benchmarking measures which do not take account of CPI; and

- the use of ‘yield’ estimates to calculate price changes for the retail benchmarking estimate whilst the Division 12 Mobile Index uses a sampling method.<sup>184</sup>

### ***Profitability***<sup>185</sup>

In a competitive market carriers would be constrained to earning normal profits – that is, sufficient funds to both cover the costs of operating and capital expenditure plus a return covering the opportunity costs of funds.

Optus claimed in its June 2003 submission that the:

Australian mobile industry as a whole is not earning excess profits. While Telstra and Optus run profitable businesses in accounting terms, other players in the industry do not.<sup>186</sup>

However, this may be because Telstra and Optus are able to enjoy above normal profits (that is, economic profits) due to their control of much of the market, to the detriment of their rivals. If this is the case, the Commission believes this would call into question Optus’ conclusion that ‘the performance of industry is consistent with competitive outcomes’.

An examination of financial information reported by the major mobile carriers suggests the mobile industry as a whole enjoys high profitability, as measured and estimated by industry analysts using EBIT returns on capital employed (ROCE) and gross margins (EBITDA<sup>187</sup>/total revenue).

Industry analysts indicate overall profitability with industry returns well in excess of weighted average cost of capital (WACC) and high margins. For example, JP Morgan estimated that the industry generated what is described as an ‘exceptionally high’ 24-25 per cent return on capital employed in 2000, with Telstra at 46 per cent and Optus at a ‘high-teen’ ROCE.<sup>188</sup> Vodafone fared less well.

Since 2000 retail mobile price decreases have stabilised (following the departure of One.Tel and the easing of price controls), new revenue sources (such as SMS and international roaming) have grown rapidly and economies of scale have been realised by substantial increases in subscribers. These changes all suggest that profitability is likely to have increased since 2000.

---

<sup>184</sup> Please refer to the individual reports for details regarding individual price change measurement methodologies.

<sup>185</sup> Note that measures of profitability discussed in this section are based on analysts’ reports which include mobile termination revenues of carriers. Unlike the other carriers’ financial reports, Telstra’s financial reports do not include mobile termination revenue with other mobile services revenue. However, to assist in comparing carriers’ performances, analysts have included Telstra’s fixed-to-mobile services data with its data for mobile services.

<sup>186</sup> Optus, *Optus Submission to the Australian Competition and Consumer Commission on Mobile Services*, June 2003, p. 18.

<sup>187</sup> EBITDA is earnings before interest, taxation, depreciation and amortisation.

<sup>188</sup> JP Morgan, *Australian Mobile Industry Return on Capital Analysis*, 2001, p. 4.

In this regard, some more recent estimates suggest that industry gross margins are very high, averaging (excluding Hutchison) over 40 per cent.<sup>189</sup> While it is difficult to detect the full profitability of Telstra's mobile operations due to Telstra's financial reporting excluding termination revenue from mobile revenues and associated measures, Macquarie estimated Telstra's EBITDA margin to be 50.9 per cent for the first half of the 2003-04 financial year when termination revenue is included.<sup>190</sup> Optus' ROCE is likely to have improved substantially since 2000 as, for the 2002-03 financial year, SingTel Optus announced that Optus Mobile in Australia continues to deliver profitable growth and strong operating margins. Optus Mobile reported an EBITDA margin of 37 per cent, while subscriber numbers grew 18 per cent and unit subscriber and retention costs were reduced by 7.9 per cent, for the third quarter of the 2003-04 financial year.<sup>191</sup>

In 2001, JP Morgan estimated Vodafone's ROCE in 1999-2000 at 6 per cent, and had forecast that Vodafone would be achieving a ROCE of 9 per cent in 2002-03.<sup>192</sup> Information provided to the Commission by Vodafone indicated it believed its EBIT divided by total net assets for the 2002-03 financial year was c-i-c per cent.

Vodafone announced on 27 May 2003 that it was 'embarking on a new era with increased profitability (and) improved free cash flow'.<sup>193</sup> For the 2002-03 financial year, Vodafone announced that it was achieving an EBITDA of \$431 million, had reduced its customer acquisition costs by 63 per cent and was, importantly, cash flow positive.<sup>194</sup>

However, for the half-year ended 30 September 2003, Vodafone announced that although it has increased subscriber numbers and reduced capital and operating expenditure, its blended ARPU had declined from \$633 in March 2003 to \$587.

JP Morgan predicted a negative but improving ROCE for Hutchison up to (at least) 2004.<sup>195</sup> For the 2002-2003 financial year, Hutchison reported a positive EBITDA for Orange of \$21.6 million, whilst it had -\$306.1 million EBITDA for '3', in line with its aggressive early entry into the 3G market.<sup>196</sup>

On the basis of the positive EBITDA enjoyed by all mobile carriers and the estimated high ROCE for the Telstra and Optus, the Commission is of the opinion that the mobile services industry is enjoying high levels of economic profit, overall.

### ***Product differentiation***

Economic theory suggests that markets with oligopolistic structures are less susceptible to coordinated conduct if there is a high degree of product differentiation.

---

<sup>189</sup> Macquarie Research Equities, *Another Tough Year Ahead for Telcos*, 17 January 2003, p. 8.

<sup>190</sup> Macquarie Research Equities, *Telstra Corporation 1H04 Result: Reconciling Results with the Vision*, 13 February 2004, p. 14.

<sup>191</sup> SingTel Optus News Release, *The SingTel Group's Results for the Third Quarter and Nine Months ended 31 December 2003*, 5 February 2004.

<sup>192</sup> JP Morgan, *op. cit.*, p. 4.

<sup>193</sup> Vodafone News Release, *Vodafone's Annual Results Something to Shout About*, 27 May 2003.

<sup>194</sup> *Ibid.*

<sup>195</sup> JP Morgan, *Australian Mobile Industry Return on Capital Analysis*, 2001, p. 4.

<sup>196</sup> Hutchison, *Half Yearly Report 2003*, 2003, p. 4.

As indicated above, the ACA estimated that in June 2003 there were over 700 different mobile service plans on offer from the numerous carriers and CSPs operating in the market. The ACA noted that with carriers seeking to maintain subscriber growth, there has been an increase in low-cost plans and deals providing consumers with periods of free calling time.<sup>197</sup>

Mobile contracts continue to provide good quality handsets with no up-front costs with the option of upgrading to a premium handset. Most plans have a standard contract length of 24 months, with carriers seeking to 'lock in' customers for the average life of a mobile phone handset.<sup>198</sup>

Since early to mid 2002, there has been an increase in the range of services available to mobile customers. For example, in August 2002, Optus, Vodafone and Telstra began offering MMS-capable handsets, which enable pictures to be sent with text messages and video messages to be sent to customers with similar handsets. Cameras, open platform software and entertainment services (such as broadcast radio and gaming) are increasingly being integrated into mobile handsets.<sup>199</sup> With carriers moving to 2.5G and 3G technologies, video-based content services and video calling services are starting to become available. Carriers are also introducing a range of wireless solutions to enable customers to receive emails and connect to the Internet and local access networks (LANs).<sup>200</sup>

The Commission considers that, there is considerable product differentiation in the retail mobile services market.<sup>201</sup>

### ***Conclusion***

Whilst the fluctuations in prices for mobile services indicated by the GSM benchmarking monitoring program may suggest that prices in the retail mobile services sector are moving around an equilibrium level, it is not clear whether that equilibrium is consistent with that which would be expected in an effectively competitive market for these services.

When considered with the apparent high levels of profitability enjoyed by the market participants, particularly those with large market shares, the Commission considers that price conduct in the retail mobile services market is not displaying outcomes one would generally expect in effectively competitive markets for these services

---

<sup>197</sup> ACA, *Telecommunications Performance Report 2002-03*, December 2003, p. 91.

<sup>198</sup> *Ibid.*

<sup>199</sup> *Ibid.*

<sup>200</sup> *Ibid.*, p. 92.

<sup>201</sup> That is, origination and termination services for 2G networks are for the most part similar to origination and termination services for 3G networks.



## **Overall Commission conclusion about the state of competition in the retail mobile services market**

The Commission notes that the supply of new services on 2.5G and 3G networks may drive further growth and competitive impact in the industry in future periods. The Commission also notes the level of product differentiation in the market could also indicate a relatively competitive market.

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. The relatively high level of market concentration at the carrier network level, the high barriers to full entry into the market (associated with national geographic coverage and sunk costs), the apparently high levels of profitability of mobile carriers (particularly those with large market shares), combined with the relatively high penetration rate of mobile phones and decreasing ARPUs, suggest the Commission should be cautious when assessing the level of effective competition in the market for retail mobile services.

On balance, the Commission considers that the structural and behavioural measures of competition do not clearly indicate that the retail mobile services market is effectively competitive at this point in time.

### **5.3.4 The Fixed-to-Mobile services market**

In determining the state of competition in the market within which FTM services are provided, the Commission believes the following structural and behavioural measures are of most relevance for this market:

- measures of market concentration;
- barriers to entry;
- price conduct;
- allegations of anti-competitive conduct in this market; and
- the impact of other fixed-line services in the pre-selection basket.

The Commission's consideration of each of these issues is set out in turn below.

#### **(a) Measures of market concentration**

In the Commission's *Telecommunications Competition Safeguards Report for 2001-02* (The 2001-02 Division 11 Report), the Commission indicated it believed there were at least ten carriers providing FTM services in Australia during the 2001-02 financial year, including Telstra, Optus, AAPT and Primus.<sup>202</sup> In addition to this, the

---

<sup>202</sup> *ACCC Telecommunications Reports – Report 1. Telecommunications Competitive Safeguards*, ACCC, June 2003, p. 20.

Commission understands that MCI, MCT, PowerTel and others provide FTM calls to end-users in various parts of Australia.

There is little publicly available information regarding the market shares of the various carriers within the FTM market. However, using public information about the number of FTM call minutes originating on a number of carriers' networks, the Commission has estimated market shares for Telstra, Optus and AAPT. These estimates are set out in Table 5.13 below.

**Table 5.13 Retail Fixed-to-Mobile Minutes, 2002-03**

	Minutes (millions)	Market Share (%)
Telstra	3944	65.3
Optus	931	15.4
AAPT	451	7.5
Other	711	11.8
Total	6037	100.0

Source: Telstra Corporation Limited, *Year end results and operation review, 2002-03*, Table 7; Macquarie Research Equities, *Mobile Termination Rates – The Regulator's Dilemma*, 7 April 2003, p. 7; David Havyatt, 'What form of regulation would be most appropriate?'; ACCC Mobile Services Review Public Forum, Sydney, 11 September 2003, slide 6.

It is also useful to consider the market share figures for NLD services as a proxy measure. This is because, as noted above, the pre-selection determination requires NLD and FTM call services (as well as IDD call services) to be taken as part of a bundle by consumers.<sup>203</sup> In this regard, the Commission's estimates of concentration levels with regard to providers of NLD services indicate that Telstra still retains a sizeable share of the supply of these services, followed by Optus, AAPT and Primus. In turn, this implies a measure of concentration using the Herfindahl Index of 0.467.<sup>204</sup> Such a measure indicates a level of concentration close to that of two equal-sized duopolists.

### **(b) Barriers to entry**

The Commission considers that the high sunk costs associated with installing PSTN and mobile infrastructure represents a significant barrier to entry into the FTM market. However, due to the current declarations of these essential input services,<sup>205</sup>

<sup>203</sup> It is more instructive to look at the long-distance call services market shares as opposed to international call service market shares as there are a number of carriers that supply international calls outside of the pre-selection basket using override codes. These carriers do not provide national long distance or FTM calls. Hence, international call market shares would not be as effective a proxy measure for FTM market shares as they are likely to bias concentration measures downwards.

<sup>204</sup> Commission estimate based on publicly available information contained in Telstra's year end results for 2002-03, analyst reports and information provided during the Commission's public forums for this inquiry.

<sup>205</sup> The domestic PSTN originating service was deemed to be declared on 30 June 1997, and the mobile termination declaration, which encompasses termination on both GSM and CDMA networks, was varied in March 2002.

the Commission believes that these barriers to entry are substantially mitigated. This view appears to be supported by the large number of carriers currently providing FTM services.

As noted above, a decision to enter the FTM market also means that a CSP must also provide national long-distance and international calls (given the pre-selection determination). The Commission does not consider that this acts as a significant barrier to entry, however, as a CSP is able to purchase the relevant wholesale services to provide these call types, without needing to install significant additional infrastructure of its own.

The Commission does consider that a barrier to entry into the FTM market may exist where the mobile termination service is not declared, or access prices for such services are above cost. This is because CSPs purchasing wholesale inputs at above cost access prices may find it difficult to compete with integrated carriers who face lower internal transfer prices.

**(c) Price conduct**

As discussed previously, generally, the Commission expects that a more competitive market can be expected to deliver goods and services to consumers at minimum cost. In principle, prices are said to be at a competitive rate where they are close to or at cost, after allowing for a normal rate of return.

In this regard, the Commission notes that the average price of retail FTM services seems to be well in excess of its cost – both in terms of underlying costs and those that result for ‘off-net’ FTM calls (where the price of the mobile termination service sold to FTM service providers is in excess of the underlying cost of providing the mobile termination service). For instance, data available from Telstra’s ‘Half-year report for the half-year ended 31 December 2003’ indicate that the average revenue it receives for FTM calls is around 38.5 cents per minute.<sup>206</sup> Further, data available to the Commission for the purposes of its Division 12 Report indicate that the average yield received across Telstra, Optus, AAPT and Primus for FTM calls is in the order of c-i-c cents per minute.

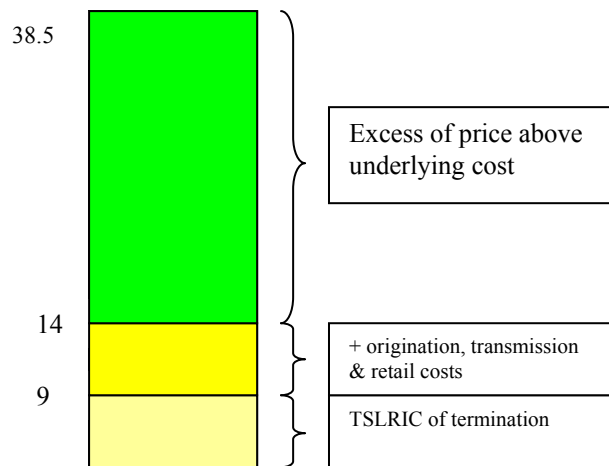
In comparison, the Commission estimates that, based on a range of overseas measures and information it gathers from carriers under the RAF and other corroborative sources, the underlying cost of the mobile termination service is likely to be in the order of 5-6 to 12 cents per minute. Combined with a conservative estimate of the combined cost of originating, transmitting and retailing FTM calls of around 5 cents per minute, the underlying cost of providing a FTM call would appear to be somewhere in the order of 10-11 to 17 cents per minute.

Overall, therefore, if the Commission uses Telstra’s average yield on FTM calls as a proxy for that of the market as a whole, the Commission estimates that the average retail price of FTM call minutes is likely to be at least double the underlying cost of providing these services. This is illustrated graphically in Figure 5.2 below, which

---

<sup>206</sup> Telstra Corporation Limited and controlled entities, *Half-year Report for the Half Year Ended 31 June 2003*, Appendix 4D p. 12.

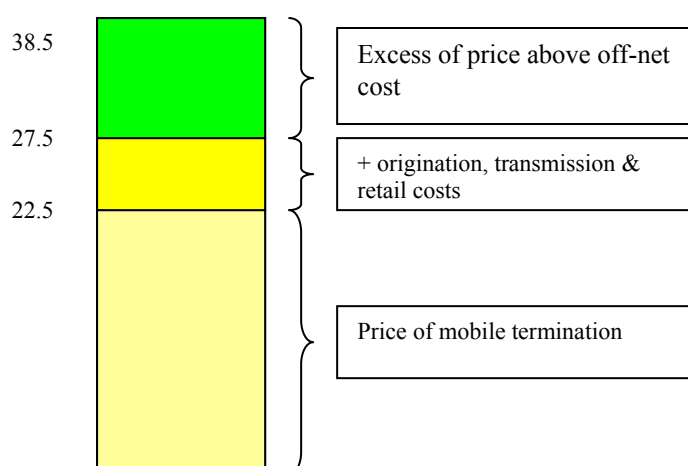
shows the large gap that lies between the average retail prices of FTM calls and the medium-case underlying cost of around 14 cents per minute. The Commission believes this is one factor which, taken in isolation, appears to indicate that the market within which FTM calls are provided is less than effectively competitive.



**Figure 5.2 – The excess of the average price for FTM calls above underlying cost**

That said, the Commission notes that a large proportion of FTM calls are provided ‘off-net’, involving situations where, in order to provide these calls, a fixed-line service provider will need to acquire a mobile termination service from a mobile carrier it is not vertically-integrated with.<sup>207</sup> In this instance, the ability of the FTM service provider to set prices close to underlying cost will be limited by the extent to which it can acquire mobile termination services at cost. In this regard, the Commission understands that the average price of mobile termination services is likely to be around 22.5 cents per minute. Accordingly, the effective cost to a FTM service provider for an ‘off-net’ FTM call would be likely to be higher at around 27.5 cents per minute (using the same 5 cent estimate of the cost of origination, transmission and retailing costs outlined above). That said, the effective cost of an off-net FTM call is still well below the average yield FTM service providers appear to be earning for the provision of these services. This is illustrated in Figure 5.3 below.

<sup>207</sup> The Commission estimates that approximately 60 per cent of all FTM minutes are provided on an ‘off-net’ basis.



**Figure 5.3 – The excess of the average price for an ‘off-net’ FTM call above underlying cost**

In addition, and as outlined further below, the Commission understands there is a significant degree of price discrimination with regard to the price of FTM calls being offered to residential and business consumers. In this regard, data gathered by the Commission for the purposes of its annual Division 12 Reports show that the average yield for residential consumers of FTM calls is currently c-i-c cents per minute, while the average price paid by other (than small) business consumers is around c-i-c cents per minute. Whilst price discrimination is not necessarily indicative of a market that is not effectively competitive, this information does suggest there is likely to be an even greater gap between the average price paid by residential consumers and the underlying cost of providing a FTM call.

In summary, the Commission believes the average per-minute revenue FTM service providers receive for FTM calls is likely to be well in excess of both the underlying cost of all FTM calls and the effective cost of providing ‘off-net’ FTM calls. In turn, this implies consumers could be incurring a loss in welfare of somewhere between \$1.515 billion and \$2.016 billion per annum compared with them being able to purchase FTM calls at the underlying cost of providing these FTM calls to them.<sup>208</sup> As indicated in Chapter 7, this is also likely to be associated with a substantial direct efficiency loss in the market within which FTM calls are provided.

Not only does the average price of FTM call minutes appear to be well in excess of the underlying average cost of producing a FTM call minute, the rate at which the price of FTM call minutes has decreased over recent years has been slower than that of other fixed-line PSTN services. In this regard, the Commission notes the results of the ACCC’s 2001-02 Division 12 Report, which showed that the real price of FTM calls (as supplied by Telstra, Optus, AAPT and Primus) declined, on average, by 20.8

<sup>208</sup> Based on an estimate of 6,037 million FTM call minutes during the financial year, underlying costs of between 11 and 17 cents per call and an average yield on FTM calls of 38.5 cents per minute and an own-price elasticity of demand of -0.6.

per cent over the period from 1997-98 to 2001-02. This compares with decreases of 59.3 per cent in the average real price of IDD calls, and 27.5 per cent in the average real price of NLD calls over the same period.<sup>209</sup>

Table 5.8 in section 5.3.3 shows that whilst the real price of FTM calls declined by 6.2 per cent in 2001-02 and by 7.9 per cent in 1999-00, it fell by only 3.2 per cent during 2001-02.

Interestingly, the price decrease has been lower for other PSTN services. Further, it should be noted that the analysis in the Division 12 Report is based on real prices, such that actual nominal prices paid by consumers will not have decreased by quite as much.

In addition, the Commission also noted in the 2001-02 Division 11 Report that the rate of decrease in the average real price of FTM calls had slowed in recent years.<sup>210</sup>

The Commission also notes concerns raised by some parties during the inquiry that decreases in the price of the mobile termination service in recent years have not been passed-through, in full, in the form of reductions in the price of FTM services. At the outset, the Commission believes it is difficult to accurately measure the extent of FTM pass-through in any given period, as the price of FTM calls can vary for reasons other than changes in the price of the mobile termination service. In particular, the Commission notes that changes in the price of other inputs, expansions in demand for the services and contract lags can all influence the price a FTM service provider will set for this service. Accordingly, it is difficult to isolate how much of a given change in the price of FTM services is due to changes in the price of the mobile termination service.

That said, the Commission has analysed whether pass-through has been occurring for the period 1997-98 to 2002-03 using a variety of data sources such as Telstra's Annual Reports, reports submitted to the Commission under the Regulatory Accounting Framework (RAF) requirements and the database for the Commission's Division 12 reports. Based on this analysis, the Commission has concluded that:

- Partial pass-through has occurred when considered over the whole period 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

---

<sup>209</sup> ACCC, *ACCC Telecommunications Reports – Report 2. Changes in Prices Paid for Telecommunications Services in Australia*, June 2003, pp. 118-122.

<sup>210</sup> ACCC, *ACCC Telecommunications Reports – Report 1. Telecommunications Competitive Safeguards*, June 2003, p. 20.

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

Of growing concern are observations that the average yield on FTM calls seems to be around three times that which some carriers earn on NLD calls. For example, whilst Telstra's average yield on FTM calls was 38.5 cents per minute in its half-year report for the half-year ended 31 December 2003, its average yield on NLD calls was 13.31 cents per minute. Given the rate of decrease in the average real price of NLD calls has been greater than that for FTM calls, the price relativity of FTM to NLD calls is continuing to rise. This is despite the fact that the retail market for FTM calls has been growing in relative importance over recent years. For instance, Telstra's half-year report for the half-year ended 31 December 2003 showed that it derived more revenue from FTM calls than NLD calls – even though it carried more than double the number of NLD minutes than FTM minutes.<sup>211</sup>

**(d) Allegations of anti-competitive conduct**

The Commission is aware of several allegations of potential anti-competitive conduct in the market within which FTM calls are supplied. In particular, the Commission notes the concerns raised by operators about the existence of FTM offers available from vertically-integrated operators in the corporate sector of the market (as low as c-i-c cents per minute at certain times of the day) that are below the prices they are setting for terminating FTM calls on their networks (c-i-c cents per minute). Accordingly, some operators are arguing that some of the vertically-integrated operators are using their control over access to the mobile termination service to engage in price-squeeze behaviour in the market within which FTM calls are provided.

In support of this argument, the Commission notes that some carriers point to examples of FTM call price offers being made available by vertically-integrated carriers that fixed-line only operators are unable to match due to the high price of mobile termination. For instance, AAPT argues that integrated operators have been engaging in price-squeeze behaviour through a combination of high mobile termination rates and capped retail FTM pricing in a way that service providers such as AAPT cannot profitably match through their own retail prices.<sup>212</sup>

The Commission also notes that during separate discussions with a number of fixed-line only operators, further allegations of such anti-competitive conduct were made. In all cases, these parties allege that certain mobile network operators were offering FTM calls to corporate customers at rates below the prices they charged competitors for access to the mobile termination services. These parties allege that such behaviour could, under these circumstances, indicate either below-cost pricing by the mobile network operators, or that their cost for producing mobile termination services on their own networks are substantially below the prices being charged for the service.

In addition to raising concerns about the potential for price-squeeze behaviour that exists when mobile termination is not regulated at cost-based prices, a number of

---

<sup>211</sup> Telstra Corporation Limited and Controlled Entities, *Half-year Report for the Half Year Ended 31 June 2003*, Appendix 4D, p.12.

<sup>212</sup> AAPT, *op. cit.*, p. 25.

parties have raised concerns during the inquiry about other aspects of pricing behaviour by vertically-integrated carriers that has the potential for inhibiting competition in telecommunications markets. In this regard, Hutchison alleges that Telstra significantly cross-subsidises low pricing to corporate end-users with high rates for residential and small-to-medium enterprise (SME) customers.<sup>213</sup> Hutchison also alleges that in relation to Telstra's pricing:

Telstra appears to be adopting a strategy of differentiating between "off-net" and "on-net" pricing to ensure customers acquire a bundle of services comprising fixed line and mobile services.<sup>214</sup>

At the outset, the Commission notes that price discrimination can be economically efficient in certain circumstances, and does not necessarily represent anti-competitive conduct in breach of Part XIB of the Act. Similarly, bundling *per se* can, depending on its particular nature, provide significant benefits to consumers and need not necessarily represent anti-competitive conduct. In considering whether the conduct of vertically-integrated carriers represents anti-competitive conduct, the Commission notes it is both conducting an inquiry into current pricing practices in the corporate sector of the market and conducting separate inquiries with regard to alleged anti-competitive conduct over the provision of FTM services. The Commission emphasises that, at this point, it has not reached conclusions in any of these matters.

That said, the Commission believes the current structure of the FTM and mobile termination markets means there is the potential for anti-competitive price squeezes to occur in the market within which FTM services are provided. In a recent report for the Commission, n/e/r/a argues that there are three necessary conditions for an anti-competitive price squeeze to be a rational and viable strategy for an integrated firm:

- two markets must be vertically-related and the upstream product must be a necessary input into producing the downstream product;
- at least one firm must be vertically-integrated and possess market power in both the upstream and downstream markets; and
- the downstream market must be open to competition from rival, non-vertically integrated firms.<sup>215</sup>

All these conditions are satisfied in the market within which FTM services are provided, where integrated operators provide the termination access service as an essential wholesale input to the provision of FTM services at the retail level, as well as compete in that same retail market with non-integrated service providers.

Overall, the Commission believes the structure of the market within which FTM calls is provided is such that Telstra has significant market power. Accordingly, the Commission believes the market is such that effective competition is not present to constrain Telstra in the terms and conditions it sets for FTM services.

---

<sup>213</sup> Hutchison, *op. cit.*, p. 10.

<sup>214</sup> *Ibid.*

<sup>215</sup> n/e/r/a, *Imputation Testing for Bundled Services*, 2003, p. 3.



**(e) Impact of other fixed-line services in the preselection bundle**

To the extent that FTM calls are, due to single-basket preselection, provided in a bundle that includes NLD and IDD calls, the Commission notes that it is appropriate to define the market within which FTM calls are provided as a broader market that also includes NLD and IDD calls. In this instance, it is worth considering whether competitive forces exist over the provision of the full bundle of these services to ensure that the market within which FTM calls are provided is competitive.

At the outset, it is noteworthy that the Commission has for some time expressed concerns about the lack of effective competition in the supply of both NLD and IDD calls. These concerns were recently noted in the Commission's 2001-02 Competitive Safeguards Report (the Division 11 Report) which stated that although competition in the market for NLD and IDD calls appeared to be developing well, there were certain elements which suggest there may not yet be effective competition in the provision of these services (largely stemming from the structure of the market).<sup>216</sup>

As it had observed in previous Division 11 Reports, the Commission believes there is a degree of concentration in the market for NLD and IDD calls. The Commission's market share estimates show that this continued to be the case for the 2001-02 financial year. In particular, it was noted that Telstra still retains a sizeable market share in the supply of these services, followed by Optus, AAPT and Primus.<sup>217</sup>

Telstra's market share in part reflects its ownership of the ubiquitous fixed-line network. While competitors are able to access inter-capital transmission services from a variety of carriers, they are generally limited to acquiring origination and termination services from Telstra's fixed-line network if they are to provide NLD and IDD services to consumers. In this regard, Telstra's network ownership provides it with a distinct advantage over its competitors.

Of particular significance was (and is) the considerable price-cost gap observed for these services, suggesting that this market may not be effectively competitive. Information on NLD costs available to the Commission suggested that the full average attributable per-minute cost of providing NLD calls (including retail costs) is approximately half the average per-minute retail price. Only a small portion of this gap can be explained by the access deficit contribution.<sup>218</sup>

The Commission also noted that although pricing behaviour at the retail level in these markets indicated the presence of some competition it had not mirrored the decline in the wholesale price of the service. For instance, the real retail price of NLD calls decreased by approximately 8.7 per cent, on average, during the 2001-02 financial year, a greater decline compared to that of approximately 6.3 per cent in the previous period. However, as outlined in the 2001-02 Division 11 Report, Telstra's 2001-02 Annual Report indicated that the average revenue per minute of NLD fixed-to-fixed calls decreased from 15.84 cents in 1998-99 to 13.06 cents in 2001-02. This represents a total fall of about 2.78 cents or approximately 17.6 per cent compared to,

---

<sup>216</sup> ACCC, *Telecommunications Competitive Safeguards*, 2003, p. 16-17.

<sup>217</sup> *Ibid.*

<sup>218</sup> The access deficit contribution is a component in the price Telstra charges other carriers for access to the PSTN and that has to be retrieved by Telstra in its retail pricing.

over the same period, the cost of access falling by about 4.4 cents per minute or approximately 63 per cent. Even the fall in the retail price of NLD calls of approximately 22.5 per cent, over the same period, for the market as a whole is less than the 63 per cent fall in wholesale access prices.

Further, the price competition present in the supply of IDD calls in previous years appears to be moderating. For instance, in the last two financial years (2000-01 and 2001-02), the real retail prices for these services have decreased by approximately 17.2 per cent and 15.3 per cent, respectively. These price decreases are much lower than the previous reporting periods, where the prices for international calls for the 1999-00 and 1998-99 financial years were approximately 27 per cent and 20.7 per cent, respectively.<sup>219</sup>

Overall, therefore, it seems that there are reasons to be concerned about the effectiveness of competition in the market within which all of NLD, IDD and FTM services are provided. Accordingly, it is unlikely that, even if FTM calls are thought to be provided in a broader market that includes all three services in the pre-selection single basket, such a market could be thought to be effectively competitive.

## **Conclusion**

The Commission considers that although barriers to entry into the market within which FTM services are provided can be partially mitigated by access to Telstra's PSTN network (and access to mobile network operators' mobile termination services), other indicators suggest that the market is not effectively competitive.

In particular, data from annual reports, Commission monitoring and overseas jurisdictions that relate to both retail prices for FTM services and the underlying cost of providing these services provide strong evidence of a lack of effective competition in the market. This is because prices for both wholesale mobile termination and retail FTM services are currently set well above the underlying cost of providing these services.

Similarly, the Commission considers that existing market structures provide vertically-integrated fixed and mobile network operators with considerable scope and incentive to use their control over access to the mobile termination service to engage in anti-competitive price-squeeze behaviour.

Finally, the Commission also considers that the market for the single-basket pre-selection bundle within which FTM services are provided to consumers does not appear to be effectively competitive at this point in time.

Therefore, on the basis of the observed concentration levels, price conduct, the considerable scope and incentive for anti-competitive price-squeeze behaviour and also the lack of full and effective competition in the pre-selection NLD, IDD and FTM services market, the Commission considers the market within which FTM services is not effectively competitive.

---

<sup>219</sup> ACCC, *Telecommunications Competitive Safeguards*, 2003, p. 16-17.

## 5.4 The extent to which competition would be promoted by declaration

Once the Commission has formed a view about the effectiveness of competition in relevant markets, it is then able to compare this to how it believes the future state of competition in these markets will look with declaration.

In section 5.3, the Commission concluded that the level of competition in the markets in which the eligible service is supplied and other related markets is likely to be less than effectively competitive. The next question, therefore, is whether or not declaration of a mobile termination service would make any difference to the state of competition in these markets.

In forming a view about the likely impact of declaration on competition, the Commission must consider not only whether declaration would be likely to promote competition but also the *extent* to which this would be likely to occur.<sup>220</sup> This suggests that greater weight ought to be given to a situation where the likely effect of declaration on competition is substantial than to one where the effect is minor.

Competition is a process of rivalry and accordingly it may be difficult to describe (in qualitative terms) the extent to which declaration would be likely to promote competition through simply examining its impact on that process. In many cases, it will be more instructive to examine the extent to which declaration promotes competition from the perspective of end-users; i.e. to have regard to the likely results from increased competition in terms of price, quality and service diversity. The impact on end-users may depend on the price of the service being considered. Also, the nature of the service being considered in this inquiry may have an important impact on end-users' interests. For instance, if access to an end-to-end service is only likely to lead to an increase in the number of suppliers with all suppliers essentially offering the same service at the same price, then competition is unlikely to be promoted to a significant extent. Where, however, declaration is likely to facilitate the development of new services and the provision of better quality services, competition is likely to be promoted to a greater extent.

On the other hand, declaration may have little impact on the terms and conditions upon which the eligible service is supplied. This would be the case if suppliers of the eligible service would be constrained in their price and output decisions, in which case declaration would be unlikely to generate increased competition in downstream markets. For example, if the Commission could be confident that mobile termination services would, in the absence of continued declaration, be likely to be provided on similar terms and conditions as those that would arise in a competitive environment for this service, there would be less scope for declaration to promote competition in telecommunications markets.

---

<sup>220</sup> Explanatory Memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996 – item 6, proposed s. 152AB.

### *Views of interested parties*

While some interested parties, such as ATUG, CompTel, MCI, AAPT, the ACA, Hutchison, the CCC and PowerTel, argue that continued declaration of the mobile termination service would promote competition in telecommunications markets, other submitters, such as Vodafone and Optus, contend that continued declaration would be detrimental to competition. Further, some submitters argue that continued declaration would be more effective in promoting competition if retail FTM rates were also regulated by the Commission.

ATUG argues that continued 'regulation by declaration of GSM and CDMA mobile services' will promote competition and as a consequence is in the LTIE.<sup>221</sup>

CompTel argues that continued declaration of the mobile termination service will promote competition in the downstream market in which FTM services are provided. It also argues that a long-run incremental cost (LRIC)-based pricing principle should be adopted.

The incentive and ability of [mobile network operators (MNOs)] to act anti-competitively would be significantly reduced, if not eliminated, with the continued declaration of the mobile termination access service and cost-based price controls on the mobile termination rates... Through LRIC-based rates the Commission will remove the marketplace distortions that are harming carriers and end-users alike.<sup>222</sup>

MCI also argues that continued declaration of the mobile termination service will promote competition. It refers to an Andersen Management International report written for Sweden's National Regulatory Agency which notes that without regulation there is 'virtually no competition and no immediate prospect of competition in the market for wholesale call termination'.<sup>223</sup> MCI also believes that high termination rates distort competition in telecommunications markets.

High termination charges on any mobile networks result in a substantial competitive distortions (sic), leading to an artificial transfer of resources from fixed networks to mobile networks. In addition to increasing the cost of calling a mobile phone beyond economically efficient values, this results in an artificial diversion of economic resources from other sectors of the economy towards mobile networks. It makes little sense to accept market failures in the name of subsidizing some operators over others, particularly when FNOs and their consumers will suffer the consequences.

Additionally, permitting selective above-cost mobile termination may result in further competitive distortions. It also gives rise to inefficient forms of arbitrage such as "tromboning".<sup>224</sup>

AAPT considers that continued declaration of the mobile termination service 'is the most effective means of promoting competition'.<sup>225</sup> AAPT contends that continued declaration and appropriate pricing principles would promote competition by

---

<sup>221</sup> ATUG, ATUG's submission to the ACCC Mobile Services Review 2002-03 Discussion Paper, p. 2.

<sup>222</sup> CompTel, *Comments in Mobile Services Review 2003*, 19 June 2003, p. 2.

<sup>223</sup> MCI, *Comments of MCI regarding the ACCC Discussion Paper on the Mobile Services Review*, 13 June 2003, p. 6.

<sup>224</sup> *Ibid.*, p. 9.

<sup>225</sup> AAPT, *op. cit.*, p. 23.

preventing ‘dominant mobile service providers’ from engaging in anti-competitive behaviour such as price squeezes.<sup>226</sup>

The CCC considers that continued declaration of the mobile termination service will promote competition in the market in which FTM services are provided if the Commission’s access pricing principles are fully implemented and if FTM pass-through occurs.<sup>227</sup>

The ACA considers that declaration of the mobile termination service should ‘definitely’ not be revoked.<sup>228</sup>

Hutchison considers that it would be in the LTIE of end-users to continue the declaration of the mobile termination service in the short to medium term.<sup>229</sup> It considers that the effect of declaration on competition in downstream markets depends on the pricing principles adopted. Hutchison considers it unlikely that reductions in wholesale mobile termination rates would be passed through to retail FTM prices in the absence of regulation of retail FTM prices.<sup>230</sup>

Vodafone argues that continued declaration of the mobile termination service that results in ‘significant reductions’ in mobile termination prices would weaken Vodafone’s competitive position and consequently reduce competitive pressures in the mobile service market.<sup>231</sup> Vodafone argues that regulated reductions in termination rates are ‘a straight hit to the profitability of Vodafone’ and result in a net benefit to vertically-integrated carriers.<sup>232</sup>

Vodafone argues that regulation of the mobile termination service is not the appropriate means by which to remedy market failure in the market in which FTM services are provided.

Vodafone believes that competition in F2M retail will not intensify as a result of regulating wholesale terminating prices and will not necessarily result in lower prices to residential customers. As mentioned earlier, Vodafone’s terminating rates have fallen by approximately 45 per cent in real terms in less than five years and yet there have been only slight reductions (or possibly increases) in the F2M retail price to residential customers. Regulating mobile termination will not guarantee the pass through of lower terminating rates to residential customers.

Also, regulation of mobile termination is not going to alter the structure or dynamics of the industry. Therefore it is unlikely to have any effect on promoting competition in the F2M retail space.<sup>233</sup>

Vodafone considers that if market forces alone do not result in reductions in FTM call prices, there are a number of other ways ‘that regulation could be applied to speed this market outcome’. For instance, Vodafone argues that introducing multi-basket

---

<sup>226</sup> *Ibid.*, p. 24.

<sup>227</sup> CCC, *op. cit.*, p. 24.

<sup>228</sup> Australian Consumers’ Association, Response to ACCC Discussion Paper Mobile Services Review, 11 June 2004, p. 2.

<sup>229</sup> Hutchison, *op. cit.*, p. 3.

<sup>230</sup> *Ibid.*, p. 12.

<sup>231</sup> Vodafone, *op. cit.*, p. 11.

<sup>232</sup> *Ibid.*, pp. 9-10.

<sup>233</sup> *Ibid.*, p. 8.

preselection with FTM as a separate option allows consumers to choose a separate provider for FTM calls. Vodafone contends that this approach would increase the competitive pressure on current providers to pass through lower wholesale termination rates and create opportunities for market entry by operators offering FTM services only. Vodafone notes that this approach was introduced in New Zealand in 2001.<sup>234</sup>

Optus also argues that competition would be promoted by the revocation of the mobile termination service declaration. It contends that there is no market failure to address with regard to the mobile termination service as mobile network operators are constrained in their pricing of the service by competition for subscribers and a high level of consumer awareness.<sup>235</sup>

Optus considers the only potential beneficiary of a ‘heavy-handed’ approach to regulation of mobile termination rates is Telstra. This is because, in the short term, Telstra would benefit from ‘less than complete pass through, and the benefit would endure if the lack of pass-through is not competed away’.<sup>236</sup>

Telstra argues that the ‘mobiles market’ is competitive and therefore regulation of the mobile termination service is not required.

Telstra does not believe that there is a case for continued regulation of mobile terminating access services and it does not believe that any of the concerns raised by the Commission could justify regulation... Since the mobiles market, as the Commission itself has previously noted, is a competitive one, it does not make sense for the Commission to regulate this market.<sup>237</sup>

#### **5.4.1 The impact of declaration on competition in the market within which the eligible service is provided**

In general, declaration of a service can serve the LTIE in two ways. Firstly, it can ensure access to essential inputs is granted where it would otherwise be denied by potential access providers. Secondly, even where access is offered, declaration can better ensure that access is given on reasonable terms by, amongst other things, providing a right to arbitration of access disputes.

As indicated in section 5.2, the Commission believes that mobile network operators have control over access to termination services provided on their networks and that mobile operators are largely unconstrained by competitive forces when setting the price of termination services on their networks. In section 5.3, the Commission considered the state of competition in the markets for the eligible service and concluded that despite the existing declaration of the mobile termination service, the mobile termination service is priced above its underlying cost of production. Further, section 5.3 indicated that the price of the mobile termination service has reduced only marginally since the Commission indicated its preference for a retail benchmarking pricing principle for this service in July 2001.

---

<sup>234</sup> Vodafone, *op. cit.*, pp. 16-17.

<sup>235</sup> Optus, *op. cit.*, p. 54.

<sup>236</sup> *Ibid.*, p. 66.

<sup>237</sup> Telstra, *op. cit.*, p. 2.

In the absence of continued regulation of the mobile termination service, the Commission believes that mobile network operators would continue to set the price of this service above its underlying cost of production. Further, to the extent that existing regulation of the mobile termination service has led to it being priced below the profit-maximising level for network operators, the Commission believes mobile network operators may have an incentive to increase the price of the mobile termination service even further in excess of cost if the existing declaration were to be revoked. As discussed in Chapter Six, the Commission is also concerned that established mobile network operators may have an incentive to refuse access to termination on their networks (or provide it on unfavourable terms and conditions) for new entrants to the retail mobile services market.

In contrast, continued declaration of a mobile termination service could, when coupled with an appropriate pricing principle, generate a closer association of prices with costs for mobile termination services. While this is unlikely to generate greater competition in the markets within which mobile termination services are provided, the Commission expects this will generate a greater level of competition in related markets. This is considered in more detail in sections 5.4.2 and 5.4.3 below.

#### **5.4.2 The impact of declaration on competition in the market within which FTM services are provided**

Under current market conditions and the current approach to regulating the price of the mobile termination service, the Commission believes the provision of FTM calls is subject to only weak competitive constraints. Whilst there is a number of providers of FTM calls in Australian telecommunications markets, Telstra appears to have a substantial share of over 60 per cent of the market within which FTM calls are provided. Further, all Telstra's competitors rely, to some extent, on access to its PSTN and/or mobile services networks in order to provide FTM calls to end-users. Whilst the Commission believes current cost-based approaches to the regulation of PSTN originating services helps mitigate Telstra's control over access to this input, access to the mobile termination services of Telstra and other mobile carriers is not currently regulated at cost-based levels. For reasons outlined in sections 5.2 and 5.3, the Commission believes the price of mobile termination services is likely to be at least double its attributable costs. In the case of Telstra, it is likely that the price of the mobile termination service is over c-i-c times its attributable cost of production. The Commission believes this helps to maintain Telstra's high market share in the FTM call market by giving enabling it to raise rivals costs in a way it is not fully subject to itself given the greatest number of FTM calls is likely to be terminated on its network.

To be clear, the ability of mobile operators to set the price of mobile termination services well in excess of cost inhibits the effectiveness of competitive market outcomes in the FTM call market in two ways:

- it ensures the price of an essential input into the provision of FTM calls is set at a level in excess of its attributable cost. As a result, fixed-line only operators must set the price of FTM calls above their underlying cost if they are to recover *their* costs of producing FTM calls; and

- the vertically-integrated nature of the two providers of FTM calls with the greatest market share gives them the ability to raise rivals costs in a way that may might inhibit the ability of fixed-line only operators to compete effectively in the provision of FTM (and possibly the bundle of FTM, STD and IDD calls) to end-users.

In combination, the ability to charge above-cost prices for mobile termination services would appear to be manifesting itself in the form of two mark-ups above cost. Firstly, the price of mobile termination is set above its underlying cost of production. In turn, this helps – via the vertically-integrated nature of some FTM providers – maintain market power in the FTM market and ensures there is a second mark-up of prices above costs in this market. In total, this leads to concerns raised in the previous section that the price of FTM services appears to be at least double the underlying cost of providing these services.

***Would revocation of the mobile termination declaration improve the state of competition in the market within which FTM services are provided?***

The Commission does not believe revocation of the current mobile termination declaration is likely to improve the state of competition in the market within which the FTM service is provided. In its view, a key cause of the lack of effective competition in this market derives from the ability of vertically-integrated providers of mobile termination services to price above underlying cost for this service. As indicated above, the Commission believes this incentive will still remain if the mobile termination service declaration is revoked. Indeed, the Commission is concerned there may be incentives for mobile operators to raise the price of mobile termination services even further above cost if the service declaration is revoked. This would further inhibit the ability of fixed-line only operators to compete in the market within which FTM services are provided.

In the absence of declaration, the Commission also believes there would be an incentive for vertically-integrated providers of FTM services to restrict or frustrate access to mobile termination services on their mobile networks when sought by competitors. Further, vertically-integrated operators will continue to have the incentive and ability to discriminate between the prices they set for termination on their network to competitors in the market within which FTM services are provided and the downstream arms of their business.

The Commission therefore believes that revocation of the mobile termination service declaration would not change the influences that lead to above-cost pricing for mobile termination services, and the consequent problems this causes for the effectiveness of competition in the market within which FTM services are provided. Indeed, the Commission is concerned the lack of effective competition could be intensified if the service declaration is revoked.

***Can continued declaration improve the state of competition in the market within which FTM services are provided?***

Given that the market within which FTM services are provided is not effectively competitive, and the Commission believes revocation of the existing mobile



termination declaration would not be likely to improve the state of competition in the downstream market, the next question is whether declaration can *improve* the state of competition in this market.

The Commission believes the main source of ineffectiveness of competition in the market within which FTM services are provided stems from the price of mobile termination services being well in excess of cost. Hence, declaration, combined with a pricing principle that generates a closer association of mobile termination prices with its underlying cost, should help to improve the effectiveness of competition in the market within which FTM services are provided. This is because such a pricing principle would likely reduce the competitive advantage vertically-integrated carriers have over fixed-only operators for FTM calls that terminate on the vertically-integrated carrier's network.

It is not clear, however, that reductions in mobile termination charges will necessarily be passed through by fixed-line operators to end-users in the form of lower retail prices for FTM services. As indicated in section 5.3, the Commission has analysed whether pass-through has been occurring for the period 1997-98 to 2002-03 using a variety of data sources such as Telstra's Annual Reports, reports submitted to the Commission under the Regulatory Accounting Framework (RAF) requirements and the database for the Commission's Division 12 reports. Based on this analysis, the Commission has concluded that:

- Partial pass-through has occurred when considered over the whole period 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 pass-through. In particular, price reductions have been more pronounced for on-net FTM calls in the corporate segment of the market.

In the short-term, therefore, the Commission would expect only partial 'pass-through' of lower mobile termination rates to lower FTM service prices. Clearly, however, the extent of pass-through of lower mobile termination prices is influenced by the effectiveness of competition in the downstream market within which FTM services are provided. That is, in effectively competitive markets, producers are forced to reduce the price of services they provide (either individually or as a bundle) towards their underlying cost of production. Hence, to the extent that prices for mobile termination services are reduced closer to cost such that competitive influences in the market within which FTM services is provided are increased, the Commission believes the degree of FTM pass-through should increase. Hence, rather than not regulating a service for fear that reductions in price may not be passed-through to end-

users, the Commission believes closer-to-cost prices for mobile termination services should help to address concerns over the extent of FTM pass-through.

Chapter Eight on pricing principles considers a number of measures that could be undertaken to improve the degree of FTM pass-through in the short term while competitive influences in the market improve.

With regard to concerns raised by some parties in relation to the possibility of anti-competitive price discrimination in the market within which FTM services are provided, the Commission notes that price discrimination is not necessarily anti-competitive conduct and is no longer a *per se* breach of the Act. This is because there can be legitimate economic reasons for price discrimination such as to better reflect lower costs in different markets or segments of markets. However, it is also possible that price discrimination could be used in an anti-competitive way. In this regard, the Commission accepts it is possible that vertically-integrated carriers could take advantage of their position by not passing through in full, and uniformly, decreases in termination charges in a way that enables them to target particular sectors of markets – such as the corporate sector of the market – with an anti-competitive effect.

This is not to say, however, that the Commission should not declare the mobile termination service. By eliminating the competitive advantage vertically-integrated carriers have, declaration, accompanied with appropriate pricing principles, can help generate greater competition in the FTM market that might help to counteract any market power a firm engaging in anti-competitive conduct might have. That is, as is well recognised, declaration is but one of the regulatory tools available to the Commission that can be used in concert to ensure more competitive outcomes in telecommunications markets. While declaration can help erode market power over time, allegations of anti-competitive price discrimination would still need to be considered under the anti-competitive conduct provisions of Part XIB of the Act. The Commission does not believe that declaration of the mobile termination service will inhibit price discrimination where it is in the LTIE.

The Commission also notes concerns raised by Hutchison with regard to the possibility of below-cost pricing of FTM services by vertically-integrated carriers in the corporate market being bundled with mobile plans with anti-competitive effect in the mobile market. The Commission notes that bundling can be pro-competitive or anti-competitive. Whether or not this particular behaviour is anti-competitive requires separate, case-by-case, consideration under Part XIB of the Act. In this regard, the Commission notes it is conducting continuing work on pricing practices in the corporate sector of the market and that this behaviour should be considered in this context.

Evidence of anti-competitive bundling of FTM services with other services should not, however, be seen to diminish the case for declaration of mobile termination services. Rather, it should strengthen the case for declaration as it would help reduce market power in the market within which FTM services are provided such that anti-competitive conduct is less likely to occur.

### **5.4.3 The impact of declaration on the market within which retail mobile services are provided**

The Commission believes 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 is because there continues to be a high level of concentration at the carrier network level (where the combined share of Telstra, Optus and Vodafone is greater than 97 per cent of the market); barriers to entry into the market (associated with national coverage and sunk costs) remain high; and established mobile operators (and in particular Telstra and Optus) appear to be earning profits well in excess of those the Commission would expect in competitive markets for these services. In addition to this, the Commission notes that reductions in the prices paid for retail mobile services appear to have slowed in recent years, with some indication that prices may even have increased, on average, during the 2002-03 financial year.

Despite this, the Commission expects the greatest competitive benefit from continued declaration of the service is likely to occur in the market within which FTM services are provided. That said, the Commission expects that declaration has the potential to help promote competition in the retail mobile services market to the extent it serves to overcome the ability established mobile operators might have to frustrate new entrants interconnecting with established networks on reasonable terms and conditions. This issue is discussed in more detail in Chapter Six. The Commission also believes that declaration of the mobile termination service will lead to a more efficient use of and investment in the infrastructure used to provide retail mobile services. This is discussed in detail in Chapter Seven.

Whilst declaration may be expected to put in place pre-conditions that help to promote competition in the retail mobile services market, the Commission recognises that declaration is likely to affect different mobile operators in different ways. In this regard, the Commission has considered arguments from Vodafone that substantial reductions in the price of the mobile termination service might weaken its competitive position as compared to vertically-integrated fixed and mobile operators. In general, and as indicated above, the Commission believes that all mobile operators have the ability to raise the price of mobile termination services above their underlying cost of production, and that this enables them to earn economic profits when providing this service. Accordingly, all mobile operators are likely to experience reduced economic profit from the provision of mobile termination services if a pricing principle is established that generates a closer association of prices and costs for the mobile termination service.

Whether or not particular mobile operators will suffer a proportionately larger reduction in overall revenues is, however, less clear. On the one hand, the Commission believes that mobile-only operators may, in the short-term, experience a relatively larger proportionate reduction in revenues from mobile termination services 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 declaration of the mobile termination service 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 mobile termination service could lead to even greater absolute reductions in the price of FTM 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. Hence, as competition in the market within which FTM services are provided becomes more intense, it is possible that reductions in the price of mobile termination services 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 mobile termination and FTM revenues of vertically-integrated operators reducing by relatively more than the mobile termination revenues of mobile-only operators. Accordingly, the relative impact of continued declaration on mobile-only and vertically-integrated fixed and mobile operators is uncertain and heavily dependent on the extent of FTM pass-through and the enhancement of competition in the retail FTM market.

More importantly, the Commission notes that, while the mobile termination service continues to be priced above its underlying cost of production, the service should continue to be a source of economic profit for mobile operators. This is especially the case given reductions in the price of the mobile termination service should lead to an increase in demand for the service and a consequent reduction in the unit costs of providing the service as economies of scale are generated.

Further, the overall profitability of mobile operators is affected by a number of factors other than simply the revenue they receive from the mobile termination service. Accordingly, the profitability of mobile network operators will depend on a number of factors in addition to regulation of the mobile termination service, including:

- the extent to which reductions in the price of the mobile termination service are offset by changes to the price of retail mobile services;<sup>238</sup> and
- the growth of other sources of revenue for mobile network operators, such as data, messaging and international roaming services.

The Commission notes that whilst revenue from termination of voice services on mobile networks is a significant component of the overall revenue of mobile network operators, its importance is expected to gradually decline into the future. This is supported by recent observations that the revenue growth of data, messaging and other value-added services for mobile operators appears to be exceeding that from mobile termination services. For example, Telstra's annual reports indicate that revenues from these sources grew by 94 per cent from \$339 million to \$657 million

---

<sup>238</sup> That is, mobile operators may, depending on the state of competition in the retail mobile services market, seek to recover some of these lost profits by raising the price of some retail mobile services. The Commission notes, however, that market inquiries reveal this has not, to date, been the general response of UK mobile operators to the first round of regulated reductions in the price of the mobile termination service in 2003. Indeed, market inquiries indicate that the introduction of 3G mobile services in the UK has created competitive pressures that have led 2G mobile operators to absorb decreases in mobile termination service prices without consequent increases in the price of retail mobile services. It remains to be seen whether mobile operators in the UK continue with this practice as additional scheduled reductions in the price of the mobile termination service are implemented.

over the two years from 2000-01 to 2002-03, while the Commission's Regulatory Accounting Framework (RAF) data indicate revenues from termination and origination increased by a substantially smaller amount over the same period. The Commission also notes that the revenue Telstra earns from data and other value-added services is now substantially greater than that which it earns from the mobile termination and origination services. While the Commission does not have access to comparable figures for Vodafone, information available to it suggests that, although Vodafone is more heavily reliant on wholesale revenues than Telstra, a similar pattern of revenue change would have occurred.

The Commission also notes concerns raised by Hutchison that it is unable to compete with vertically-integrated carriers in the provision of retail mobile services to corporate customers due to potentially anti-competitive bundling of FTM and retail mobile services. As indicated above, however, the Commission believes the potential for any such anti-competitive bundling behaviour will be reduced as declaration promotes the level of competition within the market in which FTM services are provided.

#### **5.4.4 Conclusion**

Continued declaration, combined with a pricing principle that saw a closer alignment of mobile termination charges with underlying cost would therefore be likely to result in:

- the removal of the cost advantage vertically-integrated carriers have over fixed-line only operators due to the pricing of mobile termination services above cost on their networks;
- improved competition in the provision of FTM (and possibly STD and IDD) services;
- pressures for greater FTM 'pass-through' over time;
- a gradual reduction in the potential for anti-competitive conduct arising out of the market power some providers appear to have in the market within which FTM services are provided; and
- limited impact on the level of competition in the market within which retail mobile services are provided.

Accordingly, the Commission is of the view that declaration of the mobile termination service is likely to promote competition in telecommunications markets.

## **6. Will declaration achieve any-to-any connectivity?**

In addition to the impact of declaration on competition the Commission must consider whether declaration is likely to result in the achievement of the objective of any-to-any connectivity in relation to carriage services that involve communications between end-users.

Any-to-any connectivity enables end-users to communicate with each other, irrespective of the network to which they are connected.

When the mobile termination service was deemed to be declared in 1997, the Commission considered that declaration was necessary for the purpose of achieving the objective of any-to-any connectivity. The Commission determined declaration was necessary to ensure that mobile network operators would provide termination for all calls made to their network, including those originating from other operators.

### **6.1 Views of interested parties**

Submissions to this Review express differing views as to whether declaration of a mobile termination service is necessary to achieve the objective of any-to-any connectivity.

Hutchison and AAPT argue that declaration of a mobile termination service is necessary to achieve any-to-any connectivity. These industry participants believe that, in the absence of declaration, large mobile network operators will have an incentive to refuse to provide termination services to smaller operators, and potential new entrants, to inhibit or prevent competition against them.

Hutchison also believes that extending the service description to include new technologies used to provide voice termination on mobile networks would assist in achieving the objective of any-to-any connectivity.

The CCC and the ACA consider that declaration is still necessary to achieve any-to-any connectivity between operators and to ensure access to networks is on reasonable terms and conditions.

Vodafone and Optus both argue that competition within the mobile services market is sufficient to ensure any-to-any connectivity in the absence of declaration.

### **6.2 Commission view**

The Commission considers that the question of whether operators would provide access to their mobile termination service in the absence of declaration applies equally to termination services on 2G, 2.5G and 3G networks.

Subscribers to a mobile service expect to be able to call any other subscriber to a mobile (or fixed-line) service, regardless of which network each subscriber is directly

connected to. Market research indicates that in many (if not most) cases, a calling party will not know which network the person called is connected to.

Where there are a number of established mobile operators with substantial subscriber numbers, each operator will have an incentive to reach an interconnect agreement with every other operator, in order to:

- gain revenue from termination charges levied on the operator of the originating network; and
- attract and maintain a subscriber base by allowing for calls to and from subscribers on all other networks.

Accordingly, the Commission considers that market forces are generally such that mobile operators will enter into agreements allowing termination of voice calls on their networks in the absence of declaration.

However, where a new operator enters the market the incentives for the established operators to interconnect with the new operator may be insufficient to ensure any-to-any connectivity. In this situation, the incentives for established operators and a new entrant are likely to differ markedly.

### **Established operators**

For established operators, the need to purchase termination services from a new entrant is unlikely to be imperative. This is because a new entrant will have only a small number of subscribers upon first entering the market. In these circumstances, lack of access to this relatively small number of subscribers is unlikely to affect the attractiveness of subscription to the established operators' networks. Accordingly, the established mobile operators may have an incentive to refrain from purchasing termination services from the new entrant in order to restrict competition by rendering the new entrant's subscription package relatively unmarketable<sup>239</sup> and restricting the new entrant's revenue base (from termination charges). Even if established operators do seek termination services from a new entrant, they will have a strong incentive to impose onerous terms and conditions upon such acquisition. For example, they may require supply to be made using unnecessary and expensive network elements. The imposition of such onerous terms and conditions, particularly ones that significantly increase the costs for the new entrant, will make it difficult for the entrant to participate and compete effectively in the market.

Similarly, by refusing to provide termination services to a new entrant, an established operator can inhibit, if not prevent, competition by restricting the attractiveness of the new entrant's subscription package. As noted above, subscribers expect to be able to contact all other mobile subscribers regardless of network. If an operator cannot offer the ability to call subscribers on other networks, then potential customers are unlikely to subscribe to the new operator. This is particularly so in the case of new entrants, when most calls made on the new operator's network are likely to be to subscribers to

---

<sup>239</sup> If established operators do not acquire termination services from a new entrant then the new entrant will be unable to offer potential subscribers the ability to receive calls from subscribers on other networks.

the established operators' networks. Again, even if an established operator provides termination services to the new entrant, it may have an incentive to impose onerous terms and conditions on the access seeker (for example, by providing services which involve significant time delays for end-users). The imposition of such terms and conditions would be likely to increase the costs and/or decrease the attractiveness of the new entrant's subscription package.

Accordingly, the established operators may refuse to provide termination services, or to provide termination services on reasonable terms and conditions, to new entrants in order to restrict a potential competitor's ability to gain market share, and to prevent the loss of subscribers. These incentives are most likely to exist in the provision of mobile termination services for calls that have originated on mobile telephony networks.

This practice is also likely to be more attractive to established operators in mature markets where the entry of a new operator is unlikely to result in an increase in demand for the established operators' termination services. In mature markets, it is likely that successful entry of a new market participant will be at the expense of the market shares of the established operators, as the participation rate remains steady and a new entrant increases competition for the same consumer group.

### **New Entrant**

In contrast to the established operators, there are strong incentives for a new entrant to both obtain termination services from, and provide termination services to, the established operators.

Firstly, as discussed above, if an operator is unable to offer the ability to call all (or even most) mobile subscribers, consumers are unlikely to subscribe to that operator's network. Therefore, in order to gain subscribers and so enter the market, a new entrant must reach agreement with each established operator for the provision of termination services to the new entrant.

Secondly, consumers are unlikely to subscribe to a network that allows them only to make and not to receive calls. Therefore, in order to attract significant numbers of subscribers, a new entrant will need the established operators to purchase termination services from it in order to be a viable operation.

Further, in a market where each network owner has control over access to its subscribers, the provision of termination services is likely to be a significant source of revenue for each operator. Due to each operator's control over access to termination on its network, mobile operators are likely to set the price for mobile termination services in excess of the cost of providing these services, allowing each operator to earn economic profits from the supply of mobile termination services. In such a market, participants may have an incentive to transfer some (but not necessarily all) of these economic profits to retail mobile subscribers in order to attract more subscribers and so increase revenue and profits from termination. Accordingly, a new entrant will want to supply termination services to the established operators. Without the economic profits from providing termination services, a new entrant will be



constrained in its ability to subsidise subscription and therefore will be unable to compete effectively in the mobile services market.

### 6.3 Conclusion

The Commission considers that declaration of a mobile termination service protects new entrants and small operators from being refused access to the mobile termination services of other operators.

The Commission, therefore, considers that the achievement of the object of any-to-any connectivity is promoted by declaration.

The Commission accepts Hutchison's argument that the refusal to acquire termination services from a competitor may be an effective strategy to deter entry or prevent effective competition in the retail mobile services market. Whilst the Commission does not have the power to declare that an operator must *acquire* a declared service, the Commission notes that this problem could be addressed through its consideration of whether the GSM and CDMA mobile origination service declaration should be revoked, maintained or expanded.<sup>240</sup> Further, the Commission notes that a universal service obligation (USO) provider is required to interconnect with all telecommunications networks that provide similar services, as a consequence of the connectivity test in the definition of the standard telephone service contained in the *Telecommunications (Consumer Protection and Services Standards) Act 1999*.<sup>241</sup> This requirement may operate to limit the ability of a larger operator providing the USO (currently Telstra) to refuse to acquire mobile termination services from smaller operators.

---

<sup>240</sup> This issue will be considered in a separate draft report to be released by the Commission later this year.

<sup>241</sup> See subsection 6(2).

## **7. Will declaration encourage the economically efficient use of, and the economically efficient investment in, infrastructure?**

As discussed in Chapter Three of this report, when deciding whether declaration of a service will be in the LTIE, the Commission is required to consider whether declaration would be likely to encourage:

- economically efficient use of infrastructure; and
- economically efficient investment in infrastructure.

In considering these questions, the Commission is mindful that such consideration must be made in an environment where the mobile termination service is already declared. Hence, the Commission addresses these issues from the perspective of considering the likely consequences of continued or varied declaration as opposed to those that would be likely to emerge if declaration were revoked.

The Commission's consideration of each of these decisions on economically efficient use of, and economically efficient investment in, the infrastructure by which telecommunications services are provided is outlined in turn below.

### **7.1 Impact on efficient use of infrastructure**

As indicated in Chapter Three, the Commission considers that efficiency has three major components – allocative, productive and dynamic. In general, each of these forms of efficiency is enhanced when the prices of given services reflect the costs of providing these services. In more competitive markets, service providers have a greater incentive to lower prices in order to win market share. Accordingly, this incentive helps push prices towards costs, and thereby improves the efficient use of resources, and therefore infrastructure.

Where declaration is likely to promote competition in markets for carriage services or services provided by means of carriage services, the Commission's competition analysis will generally help it to form a view about the impact of declaration on efficiency. For instance, where the Commission finds that declaration can lead to greater competition in downstream markets by helping to ensure prices for the eligible service better reflect their efficient costs of provision, it is likely such declaration will also help promote efficiency in use of telecommunications services. By enabling greater competition in downstream markets, declaration would be expected to improve productive and dynamic efficiency in these markets by giving service providers the incentive to find lower-cost means of producing goods and services in downstream markets, and by encouraging them to invest and innovate in ways that will ensure they produce goods and services of a chosen quality at the lowest possible cost in the future. Further, the Commission would expect allocative efficiency to be improved as it would be more likely that the final prices paid for retail services by end-users will better reflect the efficient costs of provision of these services. In the language of subsection 152AB(2)(e), declaration will be expected to result in the

more efficient use of infrastructure used to supply the eligible service. Conversely, a decision not to declare would – on this reasoning – lead to less competition in downstream markets and a less efficient outcome.

A clear implication of this, therefore, is that the level of costs (inclusive of a normal profit) is important in determining whether declaration will lead to a more efficient use of infrastructure. The comparison of costs to prices, and the impact declaration will have on any difference between the two, is a key consideration in whether declaration will lead to a more efficient use of infrastructure.

In addition to this, however, the competitive dynamics associated with a given market structure are also of relevance to considerations of the efficient use of telecommunications infrastructure. In particular, it is important to consider the overall structure of prices across a range of inter-related services when considering whether a particular pricing structure is economically efficient or not, rather than focusing narrowly on the inter-relationship between prices and costs for individual services such as the mobile termination service alone.

Further, a particular feature of network industries is that networks tend to be more valuable to those subscribed to them as the number of subscribers increases. This gives rise to a form of network externality in that the benefits of network subscription may be broader than simply the private benefits individuals enjoy from subscribing to a network. Consideration of the relevance of such network externalities may suggest, under certain circumstances, that the efficient use of telecommunications infrastructure requires a disassociation of the price and cost of the eligible service.

Another feature of telecommunications networks is that there can be a number of common costs associated with the provision of the eligible service and other telecommunications services. For instance, it is likely that there are a number of common costs associated with the provision of mobile termination and other mobile retail services such as the production of outgoing MTM and MTF calls to end-users. Consideration of the existence of – and need for a firm to recover – such common costs may, under certain circumstances, give rise to arguments that the efficient use of telecommunications infrastructure is better promoted where the price of the eligible service is set at a level different from its total service long-run incremental costs (TSLRIC) of production.

Finally, in considering the impact of declaration of a service on the efficient use of telecommunications infrastructure, the Act also requires the Commission to consider whether it is ‘technically feasible’ to supply and charge for the eligible service when determining whether declaration would encourage the efficient use of infrastructure. In this regard, the Commission must particularly consider:

- whether supply is feasible in an engineering sense (i.e. having regard to the technology that is in use or available);
- the costs of supply and whether the costs are reasonable; and

- the effects, or likely effects, of supply on the operation or performance of telecommunications networks.

Given the mobile termination service has been declared and provided since 1997, the Commission believes it is technically feasible to provide a mobile termination service.

### 7.1.1 Views of interested parties

Interested parties to this inquiry are divided on whether they would expect an efficient use of telecommunications infrastructure in the absence of declaration of the mobile termination service. The views of those who believe declaration is likely to encourage an efficient use of infrastructure and those that believe it will not are addressed in turn below.

#### *Arguments that declaration is likely to encourage an efficient use of telecommunications infrastructure*

A number of parties submitted during the inquiry that they believed continued declaration of a mobile termination service would be likely to encourage a more efficient use of telecommunications infrastructure because, as indicated in Chapter Five of this report, they believe the existing price of the mobile termination service is well above its costs of production. In turn, these parties believe this leads to inefficiently high prices for calls to mobile networks and an efficiently low level of consumption of these services. These parties appear to believe that this situation would persist in the absence of declaration. For instance, in its submission to the Discussion Paper, AAPT argues that:

Allocative efficiency is achieved when prices of resources reflect their underlying costs... As the Commission noted in its *2001 Report*, prior to the development of any pricing principles for termination services, these services were supplied at prices that were greater than cost. Termination charges continue to be greater than cost due to the ineffectiveness of the pricing methodology adopted in the *2001 Report*.<sup>242</sup>

Similarly, MCI argues in its submission that:

Unnecessarily high mobile termination rates depress demand for fixed to mobile calls. Consumers make fewer fixed-to-mobile calls and talk for shorter periods when they do make fixed-to-mobile calls. Such economic inefficiency reduces the utility of mobile phones by discouraging consumers from taking advantage of the opportunity to reach mobile phone subscribers wherever they are located. Bringing fixed-to-mobile termination rates in line with costs would unlock natural demand for fixed-to-mobile calls and fully maximize the utility of mobile networks.<sup>243</sup>

The CCC also argues that declaration of a mobile termination service is necessary to ensure a closer alignment of the price of the service with its underlying cost of production. The CCC believes this would, in turn:

...have the flow through effect of more efficient prices for mobile calls. The consequence of this would be that the relative use of mobile network infrastructure (higher cost) to

<sup>242</sup> AAPT, *Mobile Services Review 2003, Submission by AAPT*, 13 June 2003, p. 32.

<sup>243</sup> MCI, *Comments of MCI Regarding the Australian Competition and Consumer Commission Discussion Paper on Mobile Services Review 2003*, 13 June 2003, p. 10.

fixed network infrastructure (lower cost) would be determined on the basis of incurred costs, rather than the cost assignments that currently prevail.<sup>244</sup>

To the extent that some of the proceeds from above-cost pricing of the mobile termination service were likely to be used to subsidise subscription to mobile telephony networks, some parties argue that this leads to inefficiently high levels of subscription to mobile networks. In this regard, AAPT argues that:

This cross-subsidisation leads to inefficiently low levels of fixed-to-mobile calls and inefficiently high levels of mobile subscribership. Associated with this is a productive inefficiency as customers have incentives to use high-cost mobile technology in place of low-cost fixed telephony.<sup>245</sup>

Further, AAPT argues that this inefficient structure of prices will result even if the mobile services market is effectively competitive. AAPT argues this is because:

...they result from inefficient cross-subsidisation between various services within the mobile services market, rather than the aggregate price level for mobile services.<sup>246</sup>

Parties in favour of declaration tended to rely on observations of the price of the mobile termination service being well in excess of its costs of production, and that this in turn distorts consumers' consumption decisions with regard to FTM and retail mobile services. No party presented any formal quantification or modelling of the loss in economic efficiency that currently exists as a result of perceived distortions to the pricing structure of the mobile termination and retail mobile services. Further, none of these parties attempted to estimate the size of the benefits they expected to see generated by continued declaration of a mobile termination service. Finally, no party considered the possibility that not declaring could lead to an even less efficient outcome than present.

### ***Arguments that declaration is not likely to encourage an efficient use of telecommunications infrastructure***

Those opposed to declaration provide a varied collection of arguments to support their beliefs. In the first instance, some of the larger mobile carriers argue that they are subject to strong competitive forces that ensure they make no economic profit across the whole of their mobile business. For instance, Optus claims that:

The Australian mobile industry as a whole is not earning excess profits. While Telstra and Optus run profitable mobile businesses in accounting terms, other players in the industry do not.<sup>247</sup>

Further, it argues that:

... competition is effective and monopoly margins cannot be maintained ...<sup>248</sup>

---

<sup>244</sup> Competitive Carriers Coalition (CCC), *Submission to the ACCC Mobile Services Review 2003*, June 2003, p. 29.

<sup>245</sup> AAPT, *op. cit.*, p. 33.

<sup>246</sup> AAPT, *ibid.*, p. 34.

<sup>247</sup> Optus, *Submission to Australian Competition and Consumer Commission on Mobile Services*, June 2003, p. 18.

<sup>248</sup> *Ibid.*, p. 52.

Similarly, Telstra claims:

... the markets in which mobile services are provided are competitive ... [and] providers [are] not in a position to earn monopoly rents.<sup>249</sup>

Further, Frontier Economics for Vodafone cautions that:

... before the ACCC made any finding that there was a real problem caused by the absence of competition, they should satisfy themselves that rates of return ... look substantially higher than the costs of shareholders funds.<sup>250</sup>

In its response to the Discussion Paper, however, MCI asserts, with reference to papers by JPMorgan and Salomon Smith Barney that:

...evidence gathered by different Financial Analysts indicates that the MNOs [mobile network operators] are earning supra-normal profits.<sup>251</sup>

The claimed absence of economic profits translates to claims that any enforced price reductions as a result of continued declaration of the mobile termination service will have to be counteracted by price increases for other services provided by mobile network operators. This claim is usually made in the context of reductions in the FTM termination charge needing to be compensated by increases in prices for retail mobile services (i.e. upfront fees, monthly access charges, outgoing call charges, removal of handset subsidies etc.). In this regard, CRA for Optus says:

It is generally accepted that a reduction in termination charges will force up the prices of retail mobile services, such as outgoing calls and subscription ... charges.<sup>252</sup>

Optus claims that such compensating price increases have already been observed in the UK in response to forced reductions in the FTM termination charge.<sup>253</sup>

The claimed absence of economic profits has also led some parties to argue that, given termination is (in their opinion) provided as part of a broader bundle of services in a highly competitive mobile services market, the structure of prices that will emerge for mobile termination and other retail services is likely to be efficient.

To the extent that the price of the mobile termination service may be above its long-run incremental costs of production, and that the price of retail mobile services may be below their long-run incremental costs of production, some parties have argued this structure of prices is likely to encourage economically-efficient use of infrastructure. For instance, at various stages of the inquiry, some parties have argued

---

<sup>249</sup> Telstra, *Initial Response to the Discussion Paper of the Australian Competition and Consumer Commission*, April 2003, p. 5.

<sup>250</sup> Frontier Economics, *Principles Governing the Regulation of Fixed-to-Mobile Termination*, Report prepared for Vodafone Australia, 2 September 2003, p. 11.

<sup>251</sup> MCI, *op. cit.*, p. 14.

<sup>252</sup> CRA, *Regulation of Mobile Call Termination Charges: International Approaches*, 14 August 2003, p. 1.

<sup>253</sup> Optus, *op. cit.*, p. 53.

that above-cost prices for the mobile termination service may be efficient in order to:

- subsidise subscription in a way that would internalise the network externalities consumers of FTM calls enjoy when there is a greater number of mobile services (the fixed-line externality argument);
- subsidise subscription in a way that would internalise the externalities enjoyed by other mobile subscribers when there is a greater number of mobile subscribers (the mobile externality argument); and
- ensure a structure of prices across the mobile termination and retail mobile services that would be consistent with a ‘Ramsey’ efficient configuration of prices (the Ramsey pricing argument).

The views of interested parties on each of these arguments are set out in turn below.

### *The Fixed-line Externality Argument*

In its submission to the Discussion Paper, Optus argues that fixed-line callers to mobile networks enjoy a benefit from having more mobile subscribers to call. On the basis of this view, Optus appears to argue that higher prices for the mobile termination service can be justified in order to subsidise lower prices that would attract a higher level of mobile subscription. Accordingly, Optus argues that:

Consumers are unambiguously worse off from an imposed reduction in the mobile termination rate.<sup>254</sup>

In particular, Optus argues that a reduction in termination rates of as little as 5 cents per minute would generate a series of changes to the prices of FTM and mobile subscription services that would result in a welfare (efficiency) loss of \$984 million per annum for consumers of FTM services.<sup>255</sup> The basis of Optus’ analysis can be summarised in the following key points:<sup>256</sup>

1. *Revenue Neutrality — other prices must increase if the FTM termination charge is reduced.* Reducing the termination charge is assumed to result in mobile carriers increasing other charges to make up the revenue loss to maintain revenue neutrality:

Optus believes that mobile carriers will simply increase origination and subscription charges in order to make up for the resulting decline in termination wholesale revenue.<sup>257</sup>

In spite of this, the core analysis is based on the burden being placed totally on subscription charges.

2. *Higher customer access charges result in a loss in subscriptions.* The increase in customer access charges has an impact on the number of mobile subscribers. Based on a subscription elasticity of  $-1.0$ , a one-cent reduction in

---

<sup>254</sup> Optus, *op. cit.*, p. 30.

<sup>255</sup> Optus, *op. cit.*, p. 32.

<sup>256</sup> Optus’ full analysis can be found at: Optus, *op. cit.*, pp. 30-35.

<sup>257</sup> Optus, *op. cit.*, p. 35.

the termination charge would result in a 2 per cent (281,000) reduction in the number of subscribers. A five-cent fall removes 1.4 million subscribers.

3. *This in turn reduces FTM Calling.* The reduction in the number of mobile subscribers is asserted to result in a *pro rata* reduction in the amount of FTM calls, as FTM callers lose some of their destination mobiles. Hence, the FTM demand curve will swivel inwards, resulting in a lower demand for FTM calls at all relevant prices. Even though the decrease in the FTM price may elicit a movement along the FTM demand curve, the increase in demand from this is not sufficiently large to offset the large decrease in calls from the swivel.
4. *This reduction in FTM calling results in a large fall in FTM callers' surplus.* The welfare impact of this is measured by a fall in FTM callers' surplus identified by a swivelling in of the FTM demand curve. While there is a small offsetting consumer-side efficiency gain from the reduction in the FTM call price, there is a large net fall in callers' surplus.
5. *Consumer welfare effects are the same as overall welfare effects.* The welfare effects are presented as consumer welfare effects, but as producer welfare does not change and there are no government revenue implications included, consumer welfare effects are equal to economic welfare effects.

#### *The Mobile Externality Argument*

In addition to arguing that mobile termination prices will efficiently be above long-run incremental costs in order to effectively internalise the externalities FTM callers enjoy from having a greater number of mobile subscribers to call, Optus argues that higher-than-cost prices for mobile termination services may be justified on the grounds of broader mobile subscription network externalities enjoyed by other mobile subscribers. That is, rather than just FTM callers enjoying an effective externality benefit from a larger number of mobile subscribers, Optus argues that other mobile subscribers also benefit from increased mobile subscription. This is because existing mobile subscribers will benefit from each additional mobile subscriber as:

...they can now contact this person and vice versa easily.<sup>258</sup>

This argument is supported by its consultant, Charles River Associates, which argues that:

The presence of the network externality implies that it is socially optimal for the prices facing the mobile subscriber to be subsidised by a surcharge on termination.<sup>259</sup>

---

<sup>258</sup> Optus, *op. cit.*, p. 22.

<sup>259</sup> CRA, *op. cit.*, p. 2, fn. 4.



The Commission notes, however, that whilst arguing that FTM and mobile consumers enjoy an effective calling externality from having a greater number of mobile subscribers to call, Optus does not attempt to estimate an overall economically-efficient structure of prices for mobile termination and other retail mobile services. Rather, it seems to assume that its broadly-defined mobile services market is highly competitive and that:

The market might attempt to 'internalise' these externalities by using an implicit pricing structure that encourages a higher uptake of mobile subscription.<sup>260</sup>

Optus further argues that:

There are a number of options available to the mobile operator to internalise the positive externality ... [including increasing] ... mobile call charges above the marginal cost of providing calls ... [and/or increasing] ... mobile termination charges above the marginal cost of terminating calls.<sup>261</sup>

Optus argues that:

All options will result in unavoidable economic distortions because of the initial market failure of under-subscription... The challenge for operators is therefore to apply the pricing structure which results in the lowest level of distortions and therefore lowest level of deadweight loss to society. Such a structure will also maximise profits to the mobile operator, so all parties' interests are aligned.<sup>262</sup>

Optus' estimate of the efficiency consequences of reducing mobile termination rates are, as discussed above, focused only on the impacts in the market for FTM services and only consider the impact of a change in the price of the mobile termination service from its current level.

CRA for Optus does, however, further examine the trade off between the benefits of subsidising mobile subscribers in order to promote an efficient expansion in demand for subscription and the deadweight loss of the higher termination charges. It also reports on UK estimates of the 'optimal externality surcharge' (the equivalent in Australian dollars of) up to 19 cents per minute, and suggests that:

... a higher externality surcharge on termination may be justified in Australia to achieve the socially optimal number of mobile subscribers.<sup>263</sup>

In contrast to Optus, Hutchison (both in its own submission and in a report prepared for it by J. Gans and S. King), AAPT, CCC and MCI all discuss the issue of network externalities briefly. For all of these parties, network externalities are regarded either as irrelevant to mature networks and efficient pricing and/or that basing subscription subsidies on them is inefficient. For example, AAPT asserted that:

... subsidisation [of subscriptions] leads to inefficiently high levels of mobile subscribership.<sup>264</sup>

---

<sup>260</sup> Optus, *op. cit.*, p. 23.

<sup>261</sup> *Ibid.*, p. 23.

<sup>262</sup> *Ibid.*, p. 23.

<sup>263</sup> CRA, *op. cit.*, p. 6.

<sup>264</sup> AAPT, *Mobile Services Review 2003, Submission by AAPT*, 13 June 2003, p. 33.

AAPT argues further that:

...the external benefit of mobile subscribership is only one of many externalities that affect the mobile services market, and to consider the effects of one externality, but not others, is inappropriate.<sup>265</sup>

During discussion at the Melbourne Mobiles Forum and in its submission to the Discussion Paper, the CCC also argues that it is:

...of the view that, in respect of voice services, there are now no network externalities (if such ever existed) given the current level of mobile penetration.<sup>266</sup>

### *Ramsey Pricing Arguments*

A number of parties commented on the importance of Ramsey pricing principles when assessing the structure of prices that would be likely to arise with and without declaration of a mobile termination service. Ramsey pricing concepts address situations where a number of services share common costs of production. Hence, if all these services were priced only at their attributable costs, these common costs would fail to be recovered. Ramsey pricing concepts therefore deal with finding a configuration of prices that would ensure that these common costs are recovered in the least distortionary way. Under a Ramsey configuration, the structure of prices across a collection of services sharing common costs would ensure higher proportionate mark-ups above attributable costs for those services with relatively inelastic demands, according to the inverse-elasticity or ‘Ramsey-Boiteux’ rule.<sup>267</sup>

In the context of assessing whether declaration of the mobile termination service would encourage an efficient use of telecommunications infrastructure, some mobile carriers present FTM calling (or FTM termination) as being particularly inelastic in demand and MTM/MTF calling as relatively elastic in demand, therefore prescribing a higher mark up above attributable costs for FTM services.

Optus, Vodafone and Telstra submitted qualified statements that their prices reflect Ramsey principles. For example, Optus expresses its belief that:

... it is likely that the current market prices broadly reflect Ramsey pricing principles.<sup>268</sup>

---

<sup>265</sup> *Ibid.*, p. 33.

<sup>266</sup> CCC, *op. cit.*, p. 33.

<sup>267</sup> The Ramsey-Boiteux approach dates back to a paper by Ramsey (F. Ramsey, ‘A Contribution to the Theory of Taxation’, *Economic Journal*, 36, 1927, pp. 47-61) setting out a procedure for raising a given amount of commodity tax revenue at the least overall cost to economic efficiency. Boiteux (M. Boiteux, ‘Sur la Gestion des Monopoles Publics Astrients á l’Equilibre Budgétaire’, *Econometrica*, 24, 1, 1956, pp. 22-40; published in English as ‘On the Management of Public Monopolies Subject to Budgetary Constraints’, *Journal of Economic Theory*, 3, 1971, pp. 219-40) adapted the rule to utility pricing, taking into account the general-equilibrium aspects of minimising efficiency loss of covering non-variable production costs. While this is usually called ‘Ramsey pricing’ it should more properly be called the ‘Ramsey-Boiteux rule’ when used with reference to utility pricing.

<sup>268</sup> Optus, *op. cit.*, p. 22.

Similarly, Telstra claims that:

... such a pattern of cost recovery is consistent with Ramsey pricing, as the demand for fixed-to-mobile services is more price inelastic than the demand for outgoing mobiles services.<sup>269</sup>

Vodafone claims that Ramsey factors are:

an important determinant of the commercial prices set ... [and while] it is never an exact science ... regulators can rest easy.<sup>270</sup>

Vodafone also ties Ramsey pricing principles to network externalities, and, as previously noted, CRA for Optus considers the trade-off between the size of the FTM surcharge and the subsidy to subscription.

On the other hand, AAPT, MCI and Gans and King for Hutchison are all sceptical about claims that current pricing reflects Ramsey principles. In particular, AAPT argues that on-net/off-net retail price

differentials are not based upon considerations of demand responsiveness or any theory of Ramsey pricing ...<sup>271</sup>

Gans and King argue that Ramsey pricing is desirable only if non-linear pricing is not possible, and state that there is

... no reason why mobile network competition for subscribers will lead to socially-optimal Ramsey prices.<sup>272</sup>

They also draw attention to what they see as technical deficiencies in the arguments put by the major mobile carriers . In particular, Gans and King see no reason why mobile network competition for subscribers will lead to socially-optimal Ramsey prices, and derive the result that:

...competition will result in mobile originating charges that are too low...and terminating charges that are too high.<sup>273</sup>

MCI claims that the Ramsey argument 'fails' and also draws attention to technical shortcomings in the arguments put. In particular, it argues that:

...even if we were to accept the arguments that Ramsey Pricing is appropriate (which we do not), any purported benefits of Ramsey Pricing would depend on the retail side of the market being fully competitive. Otherwise, the above-cost component of mobile termination charges would not be competed away in the other arguments. Ramsey pricing requires that the profit constraint (i.e. zero excess profits) be met and not exceeded. ...

---

<sup>269</sup> Telstra, *op. cit.*, p. 6.

<sup>270</sup> Vodafone, *op. cit.*, p. 6.

<sup>271</sup> AAPT, *op. cit.*, p. 22.

<sup>272</sup> J. Gans and S. King, *Price Regulation of Mobile Termination: Promoting Competition and Investment in Telecommunications*, A Report on Behalf of Hutchison Telecommunications, CoRE Research, Melbourne, 26 June 2003. p. 44.

<sup>273</sup> *Ibid.*, p. 64.

Second, even if the mobile operators were competitive, the subsidy provided from above-cost mobile terminations to retail services would be economically inefficient...[because] the loss of economic welfare suffered by those calling mobiles would exceed the gain to mobile owners.

Third, a socially optimal application of Ramsey pricing requires that prices be set based upon market elasticities of demand for the services used by consumers, something that is economically infeasible. By contrast, MNOs price using the elasticity of demand for mobile termination, which is much lower than the retail elasticity of demand for calls to mobiles. This is because an MNO in the CPP [calling party pays] environment does not directly realize any benefits from reduction in the costs of incoming calls.<sup>274</sup>

### **7.1.2 Commission assessment regarding whether declaration would be likely to encourage an efficient use of telecommunications infrastructure**

As indicated in section 5.2 of this report, the Commission believes that mobile termination on each mobile network represents an ‘essential facility’ or ‘bottleneck’ service. Accordingly, mobile operators have control over access to calls terminating with consumers on their network, and this gives them the ability to raise the price of mobile termination services on their network above their costs of provision. This ensures that each subscriber to a mobile operator’s network becomes a potential source of economic profits whenever a call is made to these consumers. In turn, this provides each mobile operator with an incentive to lower retail prices to mobile consumers in order to attract more subscribers to its network. Armstrong characterises this form of market behaviour as one of ‘competitive bottlenecks’.<sup>275</sup> That is, mobile carriers compete to become the bottleneck that must be accessed in order to ensure calls to their subscribers are completed.

Depending on the state of competition in the mobile services market, the Commission believes mobile operators will transfer varying amounts of the economic profit from pricing mobile termination services above cost to subsidise the price of the bundle of retail mobile services. The more intense is the level of competition in the retail mobile services market, the greater will be the amount of economic profit flowing from mobile termination services used to subsidise subscription to mobile networks.

In assessing whether continued declaration of a mobile termination service would be likely to encourage an efficient use of telecommunications infrastructure, the Commission has reached views on a number of issues raised by interested parties to this inquiry. In particular, the Commission has reached views on whether or not:

- mobile operators are subject to effective competition in the retail mobile services market such that they are bound by a ‘zero-profit’ constraint;
- it is likely there would be direct efficiency gains from declaration if it led to a change in the structure of pricing for the mobile termination, retail mobile and FTM services;

---

<sup>274</sup> MCI, *op. cit.*, p. 14.

<sup>275</sup> Armstrong, M., *Competition in Two-Sided Markets*, paper presented at the ESEM meeting in Venice, August 2002, p. 38.

- ‘fixed-line externalities’ are relevant such that they would make above-cost pricing for the mobile termination service efficient;
- mobile network externalities exist that would make above-cost pricing of the mobile termination service efficient; and
- Ramsey pricing arguments justify above-cost pricing for the mobile termination service.

Each of these issues is addressed in turn below.

### ***Effective competition and the ‘zero-profit’ constraint***

As indicated above, some parties in this inquiry have argued that the mobile services market is sufficiently competitive that any profits they may receive from pricing mobile termination services above cost are transferred, in full, to mobile retail subscribers in the form of lower prices for retail mobile services. Accordingly, these parties argue that effective competition ensures that the structure of prices across mobile termination, retail mobile and FTM services is one that should result in an efficient use of telecommunications resources.

At the outset, and as outlined in Chapter Five of this report, the Commission does not believe that the state of competition in the market within which retail mobile services are provided is likely to be effectively competitive at this time. Whilst showing signs of being more competitive than markets within which fixed-line services are provided, the Commission believes there is enough structural and behavioural evidence for it to be concerned that the market is not effectively competitive at present. The Commission does not expect this to change in the near future.

Accordingly, the Commission is not convinced that effective competition exists to ensure all economic profits from the provision of the mobile termination service are dissipated through lower prices at the retail level for consumers of mobile telephony services. As a result of this, the Commission does not believe all mobile carriers are making zero economic profits such that losses in revenue suffered by mobile carriers from reductions in the price of the mobile termination service would need to be recovered, in full, from higher prices for retail mobile services. This is supported by observations that:

- In the case of the integrated carriers (Telstra and Optus) a decrease in the mobile termination charge represents both a loss of revenue on incoming calls and a saving in costs on outgoing calls. In the case of Telstra, which is a net payer of termination charges, a decrease in termination charges across all carriers could – depending on assumptions regarding the own-price elasticity of demand for FTM services and the degree of FTM pass-through – lead to a net gain to it in revenue terms.
- Where an actual net loss is incurred from lowering the termination charge, the Commission is not convinced there is a need to increase prices elsewhere given net profits appear to be being earned in the industry as a whole, and especially in the case of Telstra and Optus which appear to be able to cover

costs comfortably. Because of the integration of these carriers, Vodafone has indicated that it does not ‘expect a counterbalancing increase in retail prices for mobile prices like that expected in the UK.’<sup>276</sup>

- The financial viability of the mobile carriers has been greatly enhanced in recent years by the rapid growth of revenues from, in particular, SMS and international roaming. These revenues have been generated substantially by using existing infrastructure and, therefore, involve little additional cost.
- During the inquiry, the Commission has been provided with only limited evidence to suggest compensating price increases in the UK or elsewhere where substantial regulated reductions in FTM termination charges have already been experienced. Hence, minimal price increases for mobile subscription services might indicate the existence of some economic profits that enable mobile operators to absorb price decreases for the mobile termination service in the UK. That said, the Commission notes that only the first stage of price decreases for the mobile termination service have been completed in the UK to date. The Commission is also mindful that the launch of 3G services in the UK might also have constrained the ability of 2G mobile operators to increase their prices for retail mobile services.

The Commission believes the absence of effective competition and, therefore, the ‘zero-profit’ constraint, has two main implications. Firstly, the Commission is not convinced by the arguments of some mobile operators that all excess profits from the price of mobile termination services being above cost are being transferred to mobile subscribers in the form of lower prices for mobile retail services. Hence, the Commission believes the current pricing structure for mobile termination, FTM and retail mobile services is likely to generate excess profits for some mobile carriers. As a result, the Commission does not believe that an efficient use of the infrastructure used to provide a range of telecommunications services can be guaranteed in the absence of regulation of the mobile termination service.

Secondly, and partly as a result of the first point, the Commission is not convinced that mobile carriers will necessarily seek to fully recover the revenue they lose from reductions in the price of the mobile termination service by raising the prices of retail mobile services.

### ***Direct efficiency gains from declaration of the mobile termination service***

Even if the retail mobile services market was effectively competitive, however, the Commission does not believe that this would ensure an efficient use of the infrastructure used to provide the mobile termination, FTM and retail mobile services. This is because, as indicated above, the Commission believes that incentives exist for mobile operators that will lead to above-cost prices for the mobile termination service (and, in turn, lead to above-cost prices for the FTM service) and below-cost prices for retail mobile services. The resulting disassociation between price and costs for all these services is likely to distort consumption decisions and lead to an inefficient use of telecommunications infrastructure. This will come in the form of higher-than-

---

<sup>276</sup> Vodafone letter to the Commission, 9 October 2003, p. 11.

efficient levels of consumption of retail mobile services, and lower-than-efficient consumption and use of the infrastructure used to provide FTM services.

As Armstrong concludes:

As usual in this kind of ‘competitive bottleneck’ model, total welfare is not maximised since the interests of fixed network callers are not taken into account when the quantity of fixed-to-mobile calls... is chosen [and implicitly, the price of mobile termination services is set]. Welfare would be increased [if the number of fixed-to-mobile calls] were increased, i.e., if the implicit price for calling mobile subscribers from the fixed network were reduced to below the unregulated equilibrium level.<sup>277</sup>

Further, and as indicated above, to the extent that the state of competition in the market for retail mobile services is less than effectively competitive, the Commission believes that the prices that are likely to emerge in the markets for mobile termination and retail mobile services are even less likely to equate with those that one would expect to best promote the efficient use of telecommunications infrastructure. The extent of the direct efficiency loss generated by this structure of prices in the market for FTM and retail mobile services is discussed in turn below.

*The direct efficiency gain from reducing the price of mobile termination services in the market within which FTM services are provided*

In the first instance, the Commission believes that pricing the mobile termination service above cost will give rise to an economically-inefficient reduction in the use of the mobile termination service. This is because the Commission believes above-cost prices for the mobile termination service have two major effects in the related market within which FTM services are provided. Firstly, the above-cost price of the mobile termination service will increase the input costs for non vertically-integrated providers of FTM calls above their underlying cost of production. In turn, this above-cost pricing is likely to be passed on to consumers of FTM services in the form of higher prices for the FTM service. Secondly, as indicated in Chapter Five of this report, the Commission believes that above-cost pricing for the mobile termination service is contributing to a lack of effective competition in the market within which the mobile termination service is provided. In turn, this enables providers of the FTM service to set prices for FTM calls even further in excess of the costs they face. In other words, the retail price of the FTM service is likely to be pushed above its underlying cost of production twice – once by above-cost pricing for the mobile termination service and a second time when providers of FTM services push their prices above their input costs in order to take advantage of the lack of effective competition in this market.

This outcome appears consistent with the Commission’s observations in Chapter Five of this report that:

- the prices of mobile termination services appear well in excess of their underlying cost of production; and
- the prices of FTM services appear, on average, to be above the underlying cost fixed-line only operators face when providing off-net FTM calls.

---

<sup>277</sup> Armstrong, *op. cit.*, p. 38

To the extent that the retail prices of FTM services are, on average, well in excess of their underlying cost of production, the Commission believes this will reduce consumption of FTM calls below their economically-efficient level. That is, in this circumstance, the Commission expects consumers will be deterred from making some calls for which they would derive a benefit greater than the cost of producing these calls. This is because there will likely be a range of calls for which consumers' willingness to pay lies somewhere between the underlying cost of providing these calls and their above-cost price. Such decisions would not lead to the best use of telecommunications infrastructure, as services which provide a benefit greater than their cost of production will not be produced and consumed. In effect, above-cost prices lead consumers to make less (or shorter) FTM calls than would be consistent with an efficient use of telecommunications infrastructure.

The extent of the cost to society of this inefficiency in use can be measured using the concepts of consumer and producer surplus. In this regard, consumer surplus is defined as the difference between consumers' valuations of a quantity of a service, and the amount paid for that quantity. In general, therefore, if the price of a given service falls, consumer surplus will increase. Producer surplus, on the other hand, is defined as the difference between the cost of producing a quantity of a service and the revenue a producer receives from selling that quantity. Accordingly, a price fall will normally lead to a reduction in producer surplus.

In order to measure whether society, as a whole, benefits or loses from a change in prices, it is necessary to weigh up the changes in both consumer and producer surplus. In particular, if a change in price leads to an increase in one form of surplus, but a decrease in the other, society as a whole can only benefit if the gain outweighs the loss.<sup>278</sup> In the absence of externalities, if a change in price means a closer alignment with cost, society as a whole will gain. The intuition is that by more-closely aligning prices with costs, resources will be better directed to those parts of the economy where they are more highly valued.

During this inquiry, no party has attempted to quantify the size of the net welfare gain or loss generated by the existing set of prices for the mobile termination, mobile retail or other related services. Only Optus has attempted to measure the welfare implications of various regulatory approaches with regard to the mobile termination service, and only then in terms of measuring the impact of a 5 cent per minute reduction in the price of the mobile termination service. As indicated above, Optus argues that a 5 cent per minute reduction in the price of the mobile termination service will, all else being equal, generate an efficiency (welfare) loss for consumers of FTM calls of \$984 million dollars per annum. This amount is made up of two components:

- A \$1 million per annum gain for consumers as a result of a consequent 5 cent per minute decrease in the retail price of these calls,<sup>279</sup> and

---

<sup>278</sup> Hence, if a price fall leads to an increase in consumer surplus, but a decrease in producer surplus, society as a whole will only gain if the increase in consumer surplus is greater than the decrease in producer surplus.

<sup>279</sup> Optus' analysis assumes a 100 per cent 'pass-through' of decreases in mobile termination rates to the price of FTM calls.



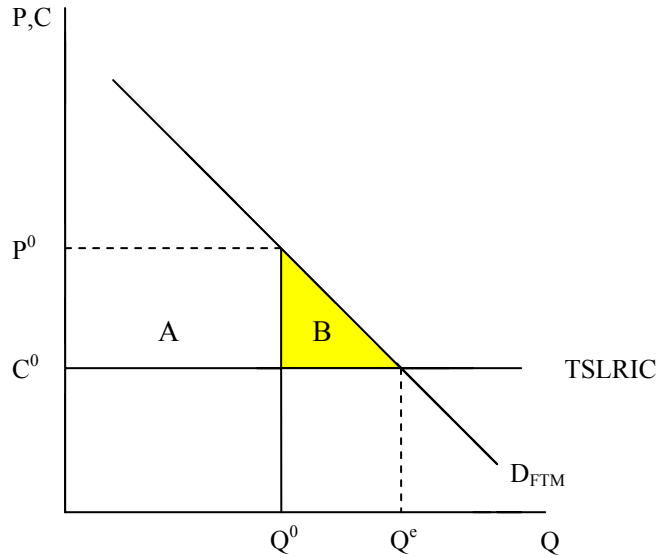
- A \$985 million per annum loss for FTM consumers due to the reduction in mobile subscription that would result from the increase in mobile subscription prices needed to recover the loss in mobile operators revenue when mobile termination prices increase. This loss is generated by the ‘fixed-line externality’ identified above.

Putting aside the impact of the fixed-line network externality – which is addressed in greater detail below – the Commission believes Optus’ analysis greatly underestimates the size of the direct efficiency gain consumers of FTM services would enjoy as a result of a 5 cent per minute reduction in the price of FTM calls. This is due to:

- a failure to recognise the additional gains society as a whole will enjoy due to the significant difference between the current average price of FTM calls and the underlying cost of producing FTM calls; and
- the choice of input parameters used to estimate the size of the direct welfare gain for FTM consumers.

With regard to Optus’ failure to recognise the full gains to society as a result of the decrease in the price of FTM calls, the Commission notes that Optus’ analysis does not recognise that the average price of FTM calls is likely to be well above their underlying cost of production. That is, when estimating the welfare gain from a 5 cent per minute reduction in the price of FTM calls, Optus appears to assume that the new price of FTM calls (35 cents per minute in its analysis) would reflect the underlying total service long-run incremental costs (TSLRIC) of producing a FTM call. Were the TSLRIC of producing a FTM call to be below this price (as the Commission’s analysis in Chapter Five would suggest), however, the Commission notes that the size of the direct efficiency gain would be much higher than that estimated by Optus.

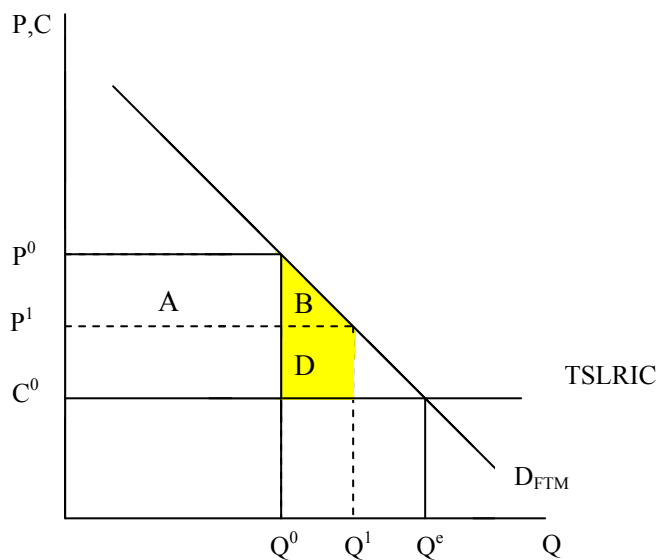
To illustrate, consider Figure 7.1 below. In this diagram, the initial retail price of a FTM call is  $P^0$  cents per minute at which level consumers purchase  $Q^0$  minutes of the FTM service. The TSLRIC of production is  $C^0$  cents per minute. Compared to a situation where the price of a FTM minute is set at its underlying cost of production, a price of  $P^0$  cents per minute generates an increase in producer surplus equal to the area A, and a decrease in consumer surplus equal to the area A + B. Overall, society as a whole loses the area B. This area is sometimes referred to as the dead-weight loss or efficiency loss of prices being set in excess of the underlying cost of production.



**Figure 7.1 – Efficiency loss when price is greater than cost**

In Figure 7.2, suppose the per-minute price of a FTM call is reduced from  $P^0$  to  $P^1$  cents per minute. In response to this reduction in price, demand for FTM calls will increase to  $Q^1$  minutes. As a result of this, consumer surplus will increase by the area  $A + B$ ; while producer surplus will fall by area  $A$ , but *increase* by area  $D$ . Overall, therefore, society as a whole will be better off by the area  $B + D$ .

By apparently assuming that the new price of a FTM call will reflect its underlying cost of production, Optus' analysis does not take into account the additional area of efficiency gain represented by the area  $D$  in Figure 7.2.



**Figure 7.2 – Efficiency gain from a closer association of prices and costs for FTM call minutes**

As outlined in Chapter Five of this report, the Commission believes the underlying cost of providing a FTM minute is likely to be in the order of approximately 14 cents per minute.<sup>280</sup> Were Optus' analysis to reflect this lower underlying cost of providing a FTM minute, the size of the direct efficiency gain from a decrease in the price of the FTM service (using Optus' other input parameters) would have increased from \$1 million per annum to around \$10 million per annum.

In addition to this oversight, the Commission is also concerned with the choice of other input parameters used by Optus in its analysis. In this regard, Optus' analysis assumes:

- An initial starting price for FTM call minutes of 40 cents per minute. The Commission believes – based on Telstra's average yield – the current average price is in the order of 38.5 cent per minute;
- An initial quantity of FTM call minutes being consumed of 4.244 billion minutes per annum. The Commission believes this greatly underestimates the number of FTM call minutes made each year in Australia, and reduces the size of the efficiency gain from a decrease in the price of the FTM service. The Commission believes the overall quantity consumed is approximately 6 billion minutes per annum;<sup>281</sup>
- An elasticity of demand for FTM call minutes of only –0.1. That is, for every 10 per cent reduction in the price of FTM call minutes, Optus expects consumers will only increase their volume of FTM call minutes by 1 per cent. The Commission believes this greatly underestimates the responsiveness of consumers to a reduction in the price of FTM call minutes. Based on a range of estimates, the Commission believes the own-price elasticity of demand for FTM call minutes is in the region of –0.45 to –0.75 with a mid-point of –0.6.<sup>282</sup>

Once the input parameters are changed to reflect those that the Commission believes are more appropriate, the size of the direct efficiency gain from a 5 cent per minute

---

<sup>280</sup> This is based on a cost of mobile termination of approximately 9 cents per minute (based on a rough estimation of the mid-point of cost estimates for the mobile termination service provided in s. 5.3 of this report) and total downstream costs of 5 cents per minute, comprising PSTN origination, transmission and retailing costs. The termination cost is based on evidence submitted by the interested parties, market inquiries and regulatory accounts. It is on an average cost basis with a contribution to organisation-level costs; essentially making it a TSLRIC+.

<sup>281</sup> This estimate is based on Telstra's reported volume of its own carriage of 3.944 billion minutes (2002-03 Annual Report) and necg's reporting of Telstra's market share at around 65 per cent (necg, *Price Regulation of Mobile Termination: Promoting Competition and Investment in Telecommunications: A Comment on CoRE Research's submission to the ACCC*, November 2003, Figure 1) –  $3.944/0.65 = 6.067$ . Macquarie Research Equities (*Mobile Termination Rates – The Regulator's Dilemma*, 7 April 2003, p. 7) estimates the volume as 6.027 billion.

<sup>282</sup> The lower bound of –0.45 was suggested by Vodafone as the average of the range of values reported in the review for Vodafone New Zealand by Frontier Economics (*Review of Price Elasticity of Demand for Fixed Line Rental*, report prepared for Vodafone New Zealand, August 2003). The upper bound of –0.75 was the elasticity used by Macquarie Research Equities (*op. cit.*) in its quantitative assessment of the impacts of changing FTM termination rates. The Commission understands that this estimate is based on market inquiries.

reduction in the price of a FTM call would increase further to be in the order of \$104 million per annum.

More broadly, the direct efficiency loss from the existing price of the mobile termination service (and by extension the FTM service) is greater than simply the gain that would result from a 5 cent per minute reduction in the price of the FTM service. The true extent of the direct efficiency loss is measured by considering what would be the net gain to society from reducing the price of FTM call minutes to their TSLRIC.

Applying an own-price elasticity of demand for FTM call minutes of  $-0.6$  and an underlying cost of providing a minute of the FTM service of 14 cents per minute, the Commission estimates the direct efficiency loss from the existing price of the FTM services is likely to be in the order of \$282 million per annum.

Overall, therefore, the Commission believes there would be a direct efficiency gain from continuing to declare the mobile termination service. This is because, in the absence of continued regulation, the Commission believes the price of the mobile termination service will continue to be priced in excess of its cost of production. In turn, this will lead to higher-than-cost prices for FTM calls, which will lead consumers to make fewer and shorter FTM calls than would be economically efficient. To the extent that non-declaration led to an increase in the price of the mobile termination charge, the Commission's analysis suggests that the existing efficiency cost would increase at an increasing rate as the price increasingly diverged from its underlying cost. For example, assuming full FTM pass-through, and using the Commission's assumptions regarding elasticity of demand and starting prices, quantities and cost, even a 5 cent per minute increase in the price of the mobile termination service would result in an estimated \$127 million dollar increase in the efficiency cost. The actual increase could be much greater – Optus' modelling and inputs implies that the profit-maximising price of termination is in excess of \$2.70 per minute.

*The direct efficiency gain from reducing the price of termination in the market within which retail mobile services are provided*

As indicated above, the Commission believes that mobile network operators will use some of the excess profits they get from pricing mobile termination services above cost to subsidise subscription to their network. The Commission also believes that the extent to which mobile operators subsidise subscription will depend on the overall level of competition in the market within which mobile services are provided.

It is unclear to the Commission the extent to which mobile operators will raise the price of retail mobile services in response to a reduction in the price of the mobile termination service. However, to the extent they do, the Commission believes this is likely to generate efficiency in use gains in the retail mobile services market if it generates a closer association of prices and costs for these services. That said, the Commission does not expect these gains to be significant – especially if price rises occur in the form of reductions in ongoing access charges – as the Commission believes the own-price elasticity of demand for these services is likely to be fairly inelastic. The Commission also notes that the extent of efficiency gain from a closer association of prices and cost for mobile subscription services will also depend on the

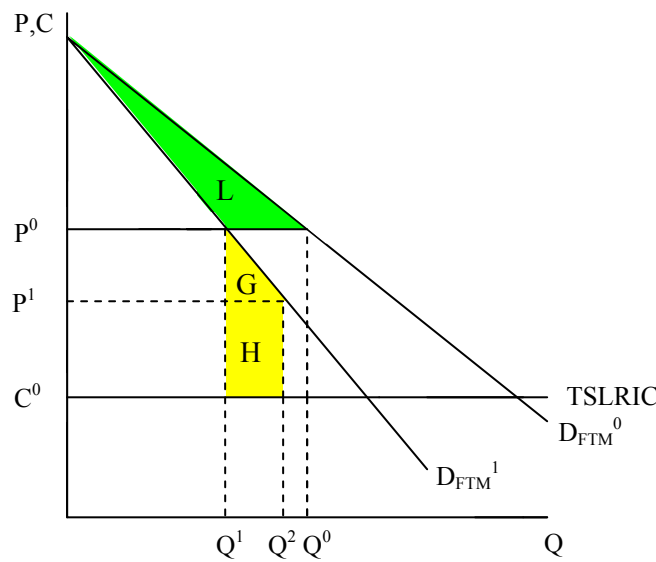
relevance (and size) of mobile network externalities at the margin. This issue is discussed in the sub-section on the relevance of mobile network externalities below.

*The relevance of fixed-line externalities*

As indicated above, Optus has provided the Commission with detailed analysis estimating the welfare loss in the market for FTM calls that will occur from decreasing the price of the mobile termination service. The key driver of this welfare loss is an argument that decreases in the price of the mobile termination service will, due to the assumed zero economic profit constraint, force mobile carriers to increase the price of mobile subscriptions to recover, in full, decreases in revenue they experience as a result of decreases in the price of the mobile termination service. This price increase will lead to a reduction in the number of mobile subscribers. As a result of this decrease in subscriptions, FTM consumers will have fewer mobile subscribers to call such that the benefits they receive from FTM calls will be reduced.

In earlier parts of this chapter, the Commission has referred to this argument as the ‘fixed-line externality’ argument. As indicated earlier, Optus estimates that the fixed-line externality effect will give rise to a reduction in consumer welfare (efficiency) in the order of \$985 million per annum if the price of the mobile termination service were to decrease by just 5 cents per minute.

Optus’ arguments regarding the magnitude of this effect are best illustrated with reference to Figure 7.3 below.<sup>283</sup>



**Figure 7.3 – Optus’ analysis of efficiency implications in the presence of fixed-line externalities**

In the first instance, Optus argues that in the absence of regulation, demand for FTM calls can be represented by the demand curve  $D_{FTM}^0$ . At an initial price of  $P^0$ ,

<sup>283</sup> Figure 3 is based on Figure 4.1 in Optus’ June 2003 submission to this review.

consumers will demand  $Q^0$  FTM minutes. If, in this setting, the price of the mobile termination service is decreased by 5 cents per minute, two effects will occur:

1. Mobile operators' revenue from the mobile termination service will decrease. Given the assumed zero economic profit constraint, mobile operators will need to recover this revenue through higher mobile subscription charges. In turn, this will decrease demand for mobile subscription such that the number of mobile subscribers will fall. This will mean FTM consumers have fewer mobile subscribers to call such that the demand for FTM calls will shift inwards (swivel) to be represented by the new demand curve  $D_{FTM}^1$ . Based on an initial price of FTM calls of  $P^0$  cents per minute, the shift in (swivel) of the demand curve will reduce quantity demanded from  $Q^0$  to  $Q^1$  FTM minutes. Under Optus' analysis, this leads to a decrease in consumer surplus equal to the area L in Figure 7.3. Optus measures the size of this loss to be \$985 million per annum.
2. The price of FTM calls will, due to the decrease in mobile termination charges, decrease from  $P^0$  to  $P^1$ . This will encourage a movement down the new demand curve such that the final consumption of FTM minutes will be  $Q^2$ . Optus acknowledges this will lead to a small offsetting gain in consumer surplus equal to the area G. Optus measures this as being equal to \$1 million per annum. As indicated earlier in this chapter, the Commission is concerned that Optus fails to recognise the additional gain to society from this price fall equal to the area H.<sup>284</sup> Further, the Commission is concerned that Optus' assumptions regarding the magnitude of  $Q^0$ ,  $P^0$  and the own-price elasticity of demand for FTM calls leads to a substantial under-estimation of the size of this offsetting efficiency gain. These concerns were detailed extensively above.

With regard to the asserted \$985 million per annum loss in consumer surplus from the initial fixed-line externality effect, the Commission has a number of both conceptual and empirical concerns with Optus' argument. These are outlined below.

### *Conceptual concerns*

On a conceptual level, the Commission believes that the fixed-line externality is only one externality that affects the interaction between the FTM, retail mobile and mobile termination services. That is, the Commission believes it is just as likely that mobile subscribers derive some benefit from having greater numbers of fixed-line callers being prepared to call them on their mobile phones. However, to the extent that the price of FTM calls is kept above their underlying cost of production, this will generate a welfare loss to mobile subscribers by reducing the willingness of FTM consumers to

---

<sup>284</sup> In this regard, the Commission notes that this additional area of gain (i.e. the area H) represents an offsetting producer surplus gain. This is significant, as it represents additional profit Optus will generate from mobile termination that will partially offset its revenue loss from the initial decrease in the price of the FTM service. In turn, this will reduce the extent of revenue loss from the decrease in the price of the mobile termination service and hence, under Optus' analysis, the increase in the price of mobile subscription needed to ensure mobile operators continue to break even. Optus' analysis, which does not consider this impact, would therefore exaggerate the increase in mobile subscription prices needed, and the consequent magnitude of the shift inwards (swivel) of the demand curve for FTM calls.

make FTM calls. The Commission believes a proper analysis of all externality benefits would require further consideration of the magnitude of these and other possible externality benefits. In this regard, the Commission agrees with AAPT's comments that it would be inappropriate to place undue focus on only one of the possible externality effects that might be expected to impact on the FTM, mobile termination and retail mobile services.

In addition to this, the Commission is concerned that no party to this inquiry appears to have argued that mobile operators will, in the absence of regulation, have any incentive to set a structure of prices across the mobile termination and retail mobile services that would lead to the most efficient use of telecommunications infrastructure in the presence of any such fixed-line network externalities. That is, Optus' analysis is aimed at determining the impacts of reducing the price of the mobile termination service from its existing price. The analysis does not argue, however, that existing prices for mobile termination and FTM services are optimal in the presence of fixed-line network externalities. The analysis also does not argue that mobile operators would, in the presence of these externalities, have appropriate incentives to set a price for the mobile termination service that ensures an efficient use of telecommunications infrastructure. In other words, whilst it is possible there may be a fixed-line network externality generated by greater subscription to mobile telephony networks, the Commission has not been presented with any evidence or arguments to suggest that mobile operators internalise the externality generated for fixed-line consumers when they set the price for the mobile termination service. In this regard, the Commission believes it is highly unlikely that mobile operators will choose a price for the mobile termination service that efficiently internalises externalities enjoyed by fixed-line consumers. This is especially the case for mobile-only operators that do not have a direct billing relationship with FTM consumers.

Hence, it is one thing to say a fixed-line externality exists. It is quite another to argue that in the absence of declaration, mobile operators will efficiently internalise this externality when setting prices for the mobile termination service such that declaration of the service is not appropriate.

#### *Empirical concerns*

Even if the Commission were to entertain consideration of the fixed-line externality argument in isolation of other externality effects, the Commission would still have some concerns with Optus' \$985 million per annum estimate of the impact of this externality on welfare (efficiency) for consumers of FTM services. In the first instance, and as indicated above, the Commission does not accept that the market for retail mobile services is effectively competitive such that mobile operators are subject to a zero economic profit constraint. Hence, the Commission does not accept that all of the net revenue lost from the fall in the mobile termination price will lead to higher subscription prices. As previously discussed, to the extent that there was an above-normal profit element in the mobile termination price, there may be no flow-through to subscription prices at all or the flow-through could only be partial. Further, the revenue may be recovered from other than subscription. It is likely that the flow-on effect in subscription charges would be less than suggested and could even be zero.

Secondly, even if the full impact of the decrease in the mobile termination rate falls on subscribers, it is likely that Optus' estimate of the impact on subscriber numbers is overstated. The Commission believes this is likely to be the case because:

- the effect on subscription numbers is assessed by applying an overall own-price elasticity of demand for mobile subscription of  $-1.0$ . This is described by Optus as 'conservative', but the only support for it is a reference to 'Optus' empirical market data'.<sup>285</sup> To the extent that Optus data refer to the responsiveness of Optus' demand to changes in Optus' prices, this would tend to indicate a more elastic response than if all carriers increased their prices — i.e., an individual carrier's demand will be more elastic than market demand; and
- the analysis makes no allowance for different categories of demand. In particular, as is the case for fixed-line business services, mobile business users are likely to have very inelastic demands. Further, more affluent entrenched social subscribers are unlikely to be as responsive to an increase in the customer access price of approximately 10 per cent. This leaves a large and growing group of more marginal later adopters that is likely to be more responsive to price. However, even if the own-price elasticity of demand for mobile subscription were as high as  $-1.0$  for this marginal group, this would imply a much lower own-price elasticity of demand when averaged over all users.

The Commission believes, therefore, that it is highly unlikely that a 10 per cent increase in subscription prices across all carriers would result in anything like a 10 per cent decrease in the number of subscriptions. Accordingly, the Commission does not believe that the shift inwards (swivel) of the demand curve for FTM calls from a decrease in the price of the mobile termination service is likely to be as large as Optus' analysis assumes.

Thirdly, the Commission believes there are various problems with the empirical estimation of the consumers' surplus loss from the swivel (the area L identified in Figure 7.3 above):

- The height of the original consumers' surplus triangle (the vertical intercept at point A in Figure 7.3) is implausibly large, which, given that the loss of consumers' surplus is proportional to this triangle, will lead to a general overstatement of loss. The estimation of original total consumer surplus is based on a linear extrapolation of the demand curve from the price-quantity coordinate at  $P^0, Q^0$ . As the elasticity assumed to apply at the point is very inelastic ( $-0.08$ ), the linear extrapolation produces a very high intercept on the vertical axis (\$5.40). Such a high intercept and linearity combine to imply that the *average* FTM caller has a willingness to pay for FTM calls of \$2.70 per minute. It is highly unlikely that the *average* FTM caller would be prepared to pay anything like \$2.70 per minute.

---

<sup>285</sup> Optus, *op. cit.*, p. 31.



- The size of the inward swivel in the FTM demand curve depends on the estimated fall in the number of subscribers, and (as previously argued) this would appear to be substantially over-stated. The number of subscribers could stay the same if the fall in the termination charge only reduced above-normal profits (no flow through to subscription prices) or even increase (externality effect from lower FTM prices outweighing any subscription price effect).
- The swivel effect is based on the number of FTM calls falling *pro rata* with the number of subscribers (10 per cent), so that the swivel removes 10 per cent of the base and 10 per cent of the area of the consumers' surplus triangle. This result assumes that those who no longer choose to subscribe receive the average number of FTM calls. However, it is more likely that those who no longer subscribe will be more marginal consumers who receive a below-average number of FTM calls. If so, the base of the loss triangle would be shorter than assumed by Optus.
- It is also assumed that those with highest willingness to pay for FTM calls are equally likely to lose their destination subscribers. In contrast, it is more likely that the FTM calls lost will be on average lower-value FTM calls, and therefore the amount of surplus lost on these calls would be lower than average. This means the height of the loss triangle would be lower than suggested by Optus.
- If mobile subscribers place a positive value on receiving calls then, *ceteris paribus*, the lower the price of FTM calls, the greater the value that mobile subscribers place on their subscription (i.e., the higher their willingness to pay for customer access). This effect will act as an offset to any reduction in subscription from any price increase.

Overall, therefore, the Commission believes that any impact on consumers' welfare from the elimination of destination subscribers is likely to be a much smaller proportion of a much smaller consumers' surplus triangle.

*Summary of Commission analysis on the relevance of the fixed-line externality*

In summary, the Commission has a number of conceptual and empirical concerns with Optus' analysis of a decrease in the price of the mobile termination service on the efficient use of FTM services. These are related to both its estimate of the \$985 million per annum efficiency loss generated by the fixed-line externality and the \$1 million per annum offsetting direct efficiency gain.

With regard to the fixed-line externality argument, the Commission believes it would be inappropriate to focus on the externality effect of a reduction in the price of FTM service for fixed-line consumers without also considering the externality benefit these price reductions would generate for mobile subscribers. Further, the Commission is concerned that Optus has provided no evidence to suggest that mobile operators have sufficient incentives to efficiently internalise externalities enjoyed by fixed-line consumers when they set the price of mobile termination services. Accordingly, it is

hard to see why the Commission should believe that the existence of fixed-line externalities should dissuade it from declaring a mobile termination service.

Even if the Commission were to focus on the fixed-line externality effect raised by Optus, the Commission believes that Optus has made a series of implausible assumptions in estimating the empirical magnitude of this effect from a 5 cent reduction in the price of the mobile termination service. These assumptions relate to the zero economic profit constraint; the own-price elasticity of demand for both the FTM and mobile subscription services; the initial price and quantity of FTM services; and the magnitude of the inward shift (swivel) of the FTM demand curve if decreases in the price of mobile termination services lead to a reduction in mobile subscriptions.

In addition, the Commission believes that Optus has greatly underestimated the size of the offsetting direct efficiency gain generated by a decrease in the price of the FTM service.

The combined effect of this over-estimation of the fixed-line externality effect and the under-estimation of the offsetting efficiency gain leads the Commission to believe that Optus has considerably overstated the welfare loss resulting from a 5 cent per minute reduction in the FTM termination charge. Indeed, the Commission believes that a 5 cent per minute reduction in the price of the mobile termination service would, when considered using a proper specification of the underlying empirical inputs and a correct estimation of all welfare effects with regard to consumption of FTM services, likely generate an overall gain from the more efficient use of the FTM service.

### *The relevance of mobile network externalities*

As indicated above, a number of parties have considered the relevance of mobile network externalities during the Commission's inquiry into whether it should continue to declare the mobile termination service. Those in favour of discontinuing the declaration of the mobile termination service argue that the current pricing structure for the mobile termination service reflects, in part, an efficient cross-subsidisation of mobile subscription prices with higher prices for mobile termination services. These parties argue this promotes an efficient use of infrastructure because it efficiently internalises the benefit mobile subscribers receive from having additional other subscribers to call and receive calls from. They argue that mobile subscription would be below efficient levels if mobile subscription prices were not subsidised through higher prices for mobile termination services.

### *When is a subscription subsidy justified by mobile network externalities?*

Whether or not subsidisation of mobile subscription improves the efficient level of consumption of mobile subscription services depends on whether there would be an additional externality benefit generated by additional subscribers in the absence of any subsidisation of the price of subscription. To illustrate, consider Figure 7.4. In this figure, the private demand curve representing individuals' willingness to pay (WTP) for subscription slopes downwards, indicating that individuals vary in their valuation of subscription. The externality benefit (i.e., what others are willing to pay to have more subscribers) from each additional subscription is reflected by the

marginal external benefit curve (MEB). This is assumed to slope downwards as well, eventually becoming zero. The reason for this is that the ‘attractiveness’ of new subscribers to existing subscribers is likely to vary. Those that are more attractive to call or be called by others are likely to be earlier joiners, and eventually the addition of new subscribers will be of little or no interest to existing subscribers.<sup>286</sup>

The total benefit to society from each additional subscriber should therefore reflect the sum of both their own private benefit and the benefit others in society gain from their subscription.<sup>287</sup> This is reflected in Figure 7.4 by vertically summing the externality benefit and the private benefit demand curve to yield a marginal social benefit (MSB) curve. An implication of this is that as the externality benefit reduces to zero, the social demand curve converges towards the private demand curve. The point of this convergence could be interpreted as the level of membership where the network is ‘mature’, and any subscriptions beyond this level should be on a strictly user pays basis without any need for subsidisation of prices. Indeed, any subsidisation beyond the mature level would damage economic efficiency.

Assuming the price of subscription was initially set at TSLRIC, individuals would only purchase a mobile subscription if their private willingness to pay for mobile subscription was at least as high as this price. Accordingly, the unsubsidised level of consumption would be determined where the TSLRIC line in Figure 7.4 intersects with the private demand curve. In terms of Figure 7.4, a price set equal to TSLRIC would generate a level of consumption equal to  $Q^0$  mobile subscriptions. In this instance, it may be that consumption is sub-optimal as the marginal consumer could be generating an external benefit. In Figure 4, the value of this benefit is measured by the height of the MEB curve at  $Q^0$  units of subscription. In this circumstance, the efficient use of the infrastructure used to provide mobile subscription services would be at a level of consumption where the total value to society from each additional network subscriber equalled the cost to society of providing their subscription. In Figure 7.4, this would be found at the level of consumption ( $Q^e$ ) consistent with the intersection of the MSB and TSLRIC curves. Assuming private individuals only have regard for their own willingness to pay when determining whether to purchase subscription, an argument can be mounted for providing mobile subscribers with a subsidy equal to the value of the MEB of the  $Q^e$  unit of subscription. This is measured by the amount  $S^e$  in Figure 7.4.

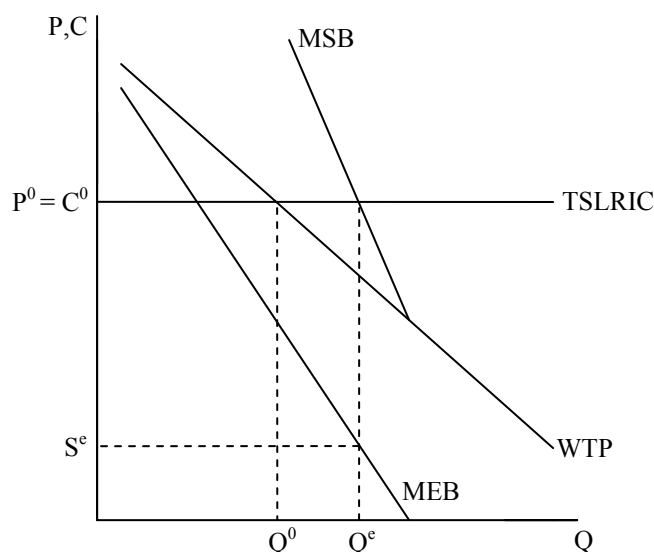
However, while it is possible that efficiency in use could be promoted by subsidising consumption of mobile subscription services, it is also possible that there is no MEB *at the margin*. That is, it is possible that while there may be some positive externality generated by additional subscribers when the level of mobile penetration is low, it is also possible that this positive externality benefit may be negligible once subscription reaches a certain level. In this instance, subsidisation would only be warranted when

---

<sup>286</sup> Where an existing subscriber has a personal interest in a new subscriber joining it is likely that the subsidy would be paid directly by that subscriber. Other existing subscribers would be indifferent.

<sup>287</sup> Oftel, *Proposals for the Identification and Analysis of Markets, Determination of Market Power and Setting of SMP Condition, Explanatory Statement and Notification*, 19 December 2003, Annex G. present this in terms of the Rohlfs-Griffin factor, the ratio of the sum of the external and private benefits to the private benefit. This equals one where there is no marginal private benefit and two where the external value of a new subscription is the same as its value to the new subscriber.

the TSLRIC curve intersects the MSB curve at a point before it has converged with the private demand curve.<sup>288</sup>



**Figure 7.4 – Mobile network externalities**

*Should a subscription subsidy be funded through a surcharge on mobile termination rates?*

If a subsidy is justified it has to be funded and there are broadly two potential sources of funds:

- First, it could be funded by Government in which case a full efficiency analysis would require considering both the efficiency gain from the subsidy and the additional deadweight losses from raising additional taxation revenue to fund the subsidy.
- Second, it could be funded by ‘cross-subsidy’ through higher charges for mobile calls and/or wholesale charges. In this case, the efficiency analysis would have to include any efficiency consequences of holding price(s) of these retail or wholesale services above their cost of provision.

The debate with respect to the mobiles network externality has revolved around the latter source of funding, specifically through a surcharge on the FTM termination charge.

Given there is a network externality at the margin, partial-equilibrium efficiency analysis suggests that a subsidy up to the amount of the marginal externality increases efficiency. On the other hand, funding this subsidy through a surcharge on the FTM termination charge causes a deadweight loss. Considering both these effects together

<sup>288</sup> Expressed differently in keeping with the public finance literature (in particular, J. Buchanan and W. Stubblebine, ‘Externality’, *Economica*, 29, 1962, pp. 371-84) there is only a case for intervention where the externality is Pareto-relevant, and this occurs where it is non-zero at the margin. See also Y-K. Ng, *Welfare Economics: Introduction and Development of Basic Concepts*, Macmillan, London 1979 at pp. 166-169.

suggests that each effect must be traded off with the other and that therefore there would be a limit to the amount of the subsidy and to the surcharge. In short, there will be an optimum subsidy and an optimum surcharge on the FTM termination charge. CRA for Optus (p. 22) defines the optimum FTM surcharge as that resulting where

...the private and external benefits created by lowering subscription can be balanced against the deadweight loss created by raising termination charges.<sup>289</sup>

While the expression is imprecise, CRA seems to be implying that the total efficiency gain from the subsidy be set equal to the *total* deadweight loss from the FTM termination surcharge. This interpretation of CRA's rule is supported by its criticism of the UK Competition Commission for equating:

...the external benefit with the subsidy (rather than the deadweight loss).<sup>290</sup>

If this interpretation is correct, CRA's rule will not result in the efficient outcome. Equating the total efficiency gain with the total deadweight loss will result in an excessive subsidy and (therefore) an excessive FTM surcharge.

The optimum subsidy and surcharge is found by equating the marginal efficiency gain (MEG) from applying the subscription subsidy with the marginal deadweight loss (MDWL) from applying the mobile termination surcharge. This must result in a subsidy of less than the full amount of the marginal external effect.

In contrast, the rule apparently proposed by CRA for Optus (of equating the total benefit from the subsidy with the total deadweight loss from the mobile termination surcharge) produces an excessive subsidy (and an excessive surcharge). If this rule were applied, the MDWL from the surcharge would exceed the MEG from the subsidy, thus reducing efficiency at the margin. The optimum subsidy/surcharge is lower where the MEG equals the MDWL.

#### *Commission assessment of the relevance of network externalities*

The Commission is not convinced that mobile network externalities justify a surcharge on the price of the mobile termination service at present. This is for two main reasons:

1. No evidence has been provided to the Commission to quantify the size of such externalities either infra-marginally or at the margin. Further, no party provides any indication of how any such externality benefit could be measured; and
2. It is unclear whether surcharges on the price of the mobile termination service would be the most efficient way to finance subsidisation of mobile subscription charges if such an externality was relevant.

With regard to the relevance of network externalities at the margin, those parties arguing its relevance simply assert its existence, without any attempt to measure its

---

<sup>289</sup> CRA, *op. cit.*, p. 21.

<sup>290</sup> *Ibid.*, p.21.

size or relevance. In contrast, those arguing against its relevance comment on the ‘maturity’ of mobile networks. In doing so, they argue there is a high level of mobile network penetration in Australia, and that this is likely to mean there would be limited additional benefit generated for existing mobile subscribers by the addition of more mobile subscribers. While this argument is intuitively appealing, it still could be the case that maturity has been reached only because of subsidisation, and that removing subsidies would lead to a fall in penetration and, thus, a suboptimal outcome.

Overall, the Commission considers that there are likely to be positive externality benefits generated by new subscribers while subscription to mobile networks is low. At present, however, penetration levels in Australia are high. The evidence available to the Commission on the presence and relevance of a network externality in the Australian mobile industry is inconclusive. There are signs that the market is mature and, therefore, that marginal externalities are negligible. At this stage, however, the Commission has not been provided with sufficient evidence for the externality argument to be taken seriously as a basis for efficient subsidisation of subscription.

Finally, even if there is a relevant externality, it is not clear to the Commission that subsidisation of mobile subscription charges will cease if the Commission continues to declare a mobile termination service and that the price of the mobile termination service were more closely aligned with its underlying cost of production. As indicated above, the Commission believes there is likely to be some economic profit being earned across the mobile telephony industry, and that some or all of the reduction in mobile termination revenues could be absorbed within this economic profit. Further, as indicated above, the Commission has been provided with little evidence to suggest that mobile subscription charges have increased in the UK in response to regulated reductions in the price of the mobile termination service.

More importantly, however, no party has provided evidence that mobile operators have sufficient incentives to set a structure of prices for mobile termination and retail mobile services that would efficiently internalise any relevant mobile network externalities. In the usual case, the existence of externalities is seen as a cause of market failure and hence a rationale for intervention in a particular market. This is because neither consumers nor firms have an incentive to efficiently internalise the existence of externalities in their consumption and production decisions. In this instance, no party has provided the Commission with any evidence or analysis to suggest that the profit-maximising incentive the Commission expects would drive pricing decisions for mobile termination and retail mobile services would drive mobile operators to set a structure of prices that would conform with an efficient use of telecommunications infrastructure. Accordingly, the Commission does not believe it has been presented with any compelling arguments with regard to mobile network externalities that suggest declaration would not promote an efficient use of the infrastructure used to provide telecommunications services.

### ***The relevance of Ramsey pricing considerations***

Optus, Vodafone and Telstra all submit that their pricing structures approximate Ramsey-efficient ones, while Gans and King for Hutchison and AAPT question the achievement of Ramsey pricing in aspects of current pricing. The Commission makes the following observations on this issue:

- Ramsey pricing structures should cover all of the services sharing common costs with a clear articulation of the costs attributable to each service and the elasticities applying to each service as a basis for determining the mark-ups for each service. There are six identifiable services sharing the unattributable common costs – termination; international roaming; MTM; MTF; SMS and subscription. The submissions fail on all counts. At most, three of the six services are considered; with in all cases omission of MTF, SMS and international roaming. With respect to the cost bases, none of the submissions specify these for any of the services included. Further, there is little or no specification of the elasticities used. In short, no party even approaches a full specification of the Ramsey solution.
- Two of the parties take an odd view on subscription subsidies, presenting these as part of a Ramsey pricing configuration. However, the Ramsey rule is based on positive mark-ups on attributable costs, and the suggested mark-downs are – without further elucidation – incongruous to the framework.
- Ramsey prices can be set at any level ranging from cost recovery to full monopoly exploitation. Those suggesting that Ramsey pricing is observed do not explicitly specify the level at which prices are set, although implicitly a cost-recovery level seems to be assumed. As discussed in section 5.3, the Commission believes that both Telstra and Optus are likely to be exceeding cost recovery, and therefore that there is scope to bring the entire pricing level down towards cost recovery.
- Similarly, the Commission agrees with the views of Gans and King that there is no reason to suspect mobile network competition for subscribers will lead to socially-optimal Ramsey prices.
- Ramsey pricing at any level requires market power, without which carriers could not hold prices above attributable costs. Further, Ramsey pricing is exactly the pricing scheme that will be adopted by a profit-maximising monopolist, with the overall level of prices dependent on the constraint (if any) on profits. However, the carriers claim that they operate in a market that is either ‘workably’ or ‘effectively’ competitive which would imply that such margins are not sustainable without collusion.
- AAPT’s argument that on-net/off-net retail price differentials are not based upon considerations of demand responsiveness or any theory of Ramsey pricing appears to the Commission to be correct.

In summary, therefore, the Commission considers that arguments presented relating to Ramsey pricing of mobile services are neither well-articulated nor supported by robust empirical evidence.

***Summary on the Efficiency-in-use Considerations in Declaration***

Overall, therefore, the Commission believes that continued declaration of a mobile termination service would be likely to encourage economically-efficient use of the infrastructure used to provide telecommunications services.

In the absence of declaration, the Commission believes mobile operators have both the ability and incentive to raise the price of mobile termination services on their network above their costs of provision. This ensures that each subscriber to a mobile operator's network becomes a potential source of economic profits whenever a call is made to these consumers. In turn, this provides each mobile operator with an incentive to lower retail prices to mobile consumers in order to attract more subscribers to its network.

Depending on the state of competition in the mobile services market, the Commission believes mobile operators will transfer varying amounts of the economic profit from pricing mobile termination services above cost to subsidise the price of the bundle of retail mobile services. The more intense is the level of competition in the retail mobile services market, the greater will be the amount of economic profit flowing from mobile termination services used to subsidise subscription to mobile networks.

Overall, therefore, the Commission believes a pricing structure is likely to emerge that involves:

- Above-cost pricing of the mobile termination service;
- Consequent above-cost pricing of retail FTM services; and
- Subsidised prices for at least some retail mobile services.

The Commission believes the broadly cross-subsidised nature of this pricing structure is likely to emerge irrespective of the effectiveness of competition in the retail mobile services market.

In turn, this pricing structure is likely to generate direct efficiency losses in the market within which FTM services are provided. This is likely to be in the form of less than efficient consumption of retail FTM services. Based on plausible assumptions relating to the elasticity of demand for FTM calls and the starting quantities and prices for FTM call minutes, the Commission estimates this direct efficiency loss could be as high as \$282 million per annum. Further, the Commission expects this pricing structure will generate greater than efficient consumption of retail mobile subscription services, and a consequent efficiency loss in the market for retail mobile services.

A number of arguments have been advanced by interested parties that attempt to defend the efficiency of this pricing structure. These include justifications based on fixed-line network externality, mobile externality and Ramsey pricing arguments.

With regard to the fixed-line externality arguments, the Commission believes it would be unwise to unduly focus on this form of potential externality to the exclusion of all other forms of potential externalities that are generated by the consumption of FTM and retail mobile services. Further, proponents of this argument have provided no evidence that mobile operators have sufficient incentive to efficiently internalise any



such externality, in the absence of regulation, through their pricing of mobile termination services. Estimates of the loss in efficiency generated by a 5 cent per minute reduction in the price of FTM calls in the presence of such fixed-line externalities are implausibly high, and based on a series of questionable assumptions regarding the starting price and quantity for FTM calls, the elasticity of demand for FTM calls and mobile subscriptions and the nature of the demand response for FTM calls to a reduction in mobile subscribers.

With regard to mobile network externalities, the Commission believes it is unclear the extent to which these are relevant at the margin. That is, given the high levels of mobile subscription that currently exist, the Commission believes the level of benefit generated for existing mobile subscribers by new mobile subscriptions is likely to be low (if not zero). In this context, it is unlikely that existing above-cost mobile termination rates (and the consequent marginal dead-weight loss this generates) are justified in order to subsidise additional mobile subscription. That is, it is highly unlikely that the existing cross-subsidised structure of prices represents an optimal pricing structure on the basis of mobile network externality arguments. Crucially, however, for the purposes of determining whether revocation of the declaration of the mobile termination service would promote an economically-efficient use of telecommunications infrastructure, no party has provided evidence to suggest that mobile operators have sufficient incentive to efficiently internalise any such externality, in the absence of regulation, through their pricing of mobile termination services.

Finally, Ramsey arguments are not well developed and, as they essentially represent a restatement of other arguments against declaration (revolving around the suggested high inelasticity of the mobile termination service and the suggested high elasticity of mobile subscription) appear to have little direct relevance to this issue.

## **7.2 Impact on efficient investment in infrastructure**

Efficient investment in infrastructure makes an important contribution to the promotion of the LTIE. It can lead to more efficient methods of production, foster increased competition and lower prices, and enhance the level of diversity in the goods and services available to end-users.

Accordingly, in examining the likely impacts of declaration on economically-efficient investment, and the extent of such investment, the Commission has focussed on the likely impact on economically-efficient investment in:

- infrastructure by which the eligible service is supplied; and
- infrastructure by which other communications carriage services, and services supplied by means of communications carriage services, are supplied in related markets.

Central to the consideration of the incentives declaration give to service providers is the impact on their 'build/buy' decisions. That is, carriers operating in related markets will have a choice as to whether they invest in their own infrastructure in order to provide the eligible service (i.e. 'build') in order to provide final services to

end- users, or to seek access from an existing provider of the eligible service (i.e. ‘buy’). In this regard, the Commission is particularly concerned to ensure declaration would not prevent efficient investment (such as efficient investment in the infrastructure used to provide the eligible service by potential service providers) or encourage inefficient investment (such as excessive investment in related markets or inefficient duplication of network infrastructure). To a large extent, creating the right incentive for service providers to make an efficient build/buy choice is a matter of determining appropriate pricing principles for a declared service, and this issue is discussed in detail in Chapter Eight below.

#### *Incentives for investment in infrastructure needed to provide the mobile termination service*

Declaration may distort the access provider’s decisions about maintenance, improvement and expansion of existing infrastructure, thus harming the LTIE. For instance, if the access price of a declared service were to be based on a provider’s actual costs, then declaration may lead to the access provider over-investing in the existing network in order to raise the access price (also known as ‘gold plating’).

Conversely, if the access price for a declared service was set at an inefficiently low level, it may deprive the access provider of the ability to earn an economic rate of return on its efficient investment in the infrastructure used to provide this service. In this instance, the access provider may be deterred from making efficient investment in the infrastructure used to provide a mobile termination service.

In other situations, the access provider may have an incentive to under-invest in order to limit the scope for third-party access to its network. Consequently, the Act requires the Commission to consider the likely impact of declaration on the incentives for investment in infrastructure by which the eligible service is supplied.

#### *Incentives for investment in other infrastructure*

As discussed in Chapter One, access seekers require access to the mobile termination service in order to provide fixed-to-mobile and mobile-to-mobile services to end users. Therefore, the Commission’s assessment of the impact of continued declaration of a mobile termination service also includes an assessment of its likely effect on investment in infrastructure by which services in the related markets within which fixed-to-mobile and mobile-to-mobile services are provided.

#### *Views of interested parties*

Submitters presented a range of views on the impact on investment of continued declaration of the mobile termination service. Optus, Vodafone and Telstra argue that continued declaration would result in inefficient investment outcomes while AAPT and the CCC contend that inefficient investment would be more likely to result in the absence of declaration. Hutchison considers that declaration of mobile termination services using new networks would not affect the investment decisions of mobile operators.

Optus argues that declaration results in a regulatory risk that discourages investment in the mobile services market. Accordingly, it argues that the revocation of the declaration of the mobile termination service would promote certainty which would be likely to encourage investment in new networks and investment by new entrants.

Optus firmly believes that a decision to revoke the declaration is likely to stimulate further investment by removing the regulatory risk that currently overhangs the mobile services market. The continued threat of regulatory intervention in this market raises the WACC/hurdle rate required by investors because of the high degree of uncertainty it creates. The ACCC's views with respect to the regulation of a service can shift dramatically, as is demonstrated by the thrust of this current review. Whilst regulation is in place there exists the scope for regulatory gaming by market players that also adds to the uncertainty of investors.<sup>291</sup>

Optus also contends that the current pricing structure for the full range of retail and mobile termination services promotes mobile penetration and that this in turn promotes investment in the infrastructure used to provide mobile services.

...the current structure of charges – with relatively low subscription charges – promotes penetration and the rapid take-up of services by consumers. This encourages existing operators to invest in mobile towers and capacity so driving further penetration. This is virtuous circle of continued investment and penetration that is in the mutual interests of both carriers and end-users (sic). The former pursue scale to drive efficient use of the infrastructure and reduce costs to serve; the latter benefit from reduced costs and the external benefits of higher mobile penetration. Continued regulation is a threat to this virtuous circle because it acts to reduce incentives for investment.<sup>292</sup>

Vodafone also contends that continued regulation of the mobile termination service would result in inefficient infrastructure investment. In particular, Vodafone argues that if mobile termination prices are reduced by regulation to a level that does not allow the network operator to break even, this could result in the network operator either decreasing its investment or exiting the market.

...Vodafone believes that there could be a number of consequences of significantly reduced mobile termination prices if, as a result, a mobile carrier is unable to break even; that is, earn an adequate return on their investment. This could include one or more of the mobile carriers doing one or a combination of the following:

- Writing down the value of their assets but continuing to compete in the market (assuming debt and equity holders accept this write down);
- Reducing investment in future infrastructure in an attempt to reduce capacity and lift retail prices; and/or
- Exit the market (although we consider this unlikely to occur due to the extent that investments are already sunk).<sup>293</sup>

Vodafone also argues that significant reductions in mobile termination prices as a result of regulation would increase the perceived risk of investment. This would lead to one or both of an increase in the return on investment sought by providers of capital and a decrease in the forward-looking economic cash flows of capital investments.<sup>294</sup>

---

<sup>291</sup> Optus, *op. cit.*, p. 57.

<sup>292</sup> *Ibid.*, p. 58.

<sup>293</sup> Vodafone, 9 October 2003, *op. cit.*, p. 10.

<sup>294</sup> *Ibid.*, p. 10.

Vodafone also argues that regulation has the potential to adversely affect incentives to invest in new infrastructure and service development.

Vodafone has committed to investing in 3G in Australia with commercial service available by mid-2005. While Vodafone stands by its commitment in regard to 3G, implementing binding regulation of mobile termination has the potential to adversely impact on incentives to invest in new infrastructure and service development.<sup>295</sup>

Telstra argues that continued declaration of the mobile termination service would result in inefficient investment because it considers the market in which the mobile termination service is provided to be a competitive one. In this regard it contends that:

...one of the major risks of regulation in a competitive market is the potential for that regulation to constrain investment, dampen incentives for technological innovation and slow market development. Since the mobiles market, as the Commission itself has previously noted, is a competitive one,<sup>296</sup> it does not make sense for the Commission to regulate this market.<sup>297</sup>

AAPT, on the other hand, argues that continued declaration of the mobile termination service offers the most effective means of encouraging efficient investment in infrastructure. AAPT contends that a correct application of total service long-run incremental cost (TSLRIC) pricing principles would encourage efficient investment and that regulation tends to deter efficient investment when regulatory changes are unexpected. In this regard AAPT argues that:

It is unexpected changes, not expected ones, that tend to disrupt expected returns on investment projects and, in this way, discourage future investment. In the instant case, it would be the revocation of the mobile termination declaration that would be unexpected and, therefore, the revocation of the declaration that would be most likely to create uncertainty in the mind of investors.<sup>298</sup>

The CCC contends that setting the mobile termination price at an 'efficient' level will result in an efficient level of infrastructure investment. The CCC contends that the current price of the mobile termination service is above cost and that this has recently resulted in investment in mobile network infrastructure that 'in all likelihood' has been inefficient.<sup>299</sup>

Hutchison considers that investment decisions are made on the basis of expected demand for services and that declaration of mobile termination services on networks using new technology will not affect a mobile operator's investment decisions. Further, Hutchison argues that the declaration of the mobile termination service

---

<sup>295</sup> *Ibid.*, p. 10.

<sup>296</sup> See, for example, ACCC, *Public Inquiry into Declaration of Domestic Inter-carrier Roaming under Part XIC of the Trade Practices Act 1974 – Final Report*, March 1997; ACCC, *Pricing Methodology for the GSM Termination Service, Final Report*, July 2001. In the Commission's *Review of Price Control Arrangements* (2001), it noted that the supply of mobile services had become sufficiently competitive such that mobiles services could be removed from the existing broad price cap: p. 17.

<sup>297</sup> Telstra, *Mobile Services Review Telstra's Initial Response to the Discussion Paper of the ACCC*, April 2003, p. 2.

<sup>298</sup> AAPT, *op. cit.*, p. 35.

<sup>299</sup> Competitive Carriers Coalition, *op. cit.*, p. 29.

should be varied to include voice termination on 3G networks in order not to distort investment decisions regarding 3G networks.

A decision to invest, whether for 2G or 3G networks, should and would be based upon the likely take-up of mobile services and not regulation of the MTAS [termination access service]. This is because termination prices and retail prices for mobile services are closely linked. Any relevant fixed costs will generally be common costs of terminating and originating services and can therefore be recovered through retail mobile services. In fact, failing to vary the declaration of the MTAS to include 3G or other new technologies may serve to distort investment decisions.<sup>300</sup>

Core Research, in its submission on behalf of Hutchison, argues that a reduction in mobile termination rates would not discourage investment in the infrastructure used to provide mobile services, because changes in termination charges do not affect mobile operators' overall profits.

Our past modelling of competition in mobile telephony (e.g., Gans and King, 2001) demonstrates that mobile network profits do not alter as termination charges (for mobile to mobile or fixed to mobile calls) alter. To see this, suppose that a change in mobile termination charges leads to an increase in total termination profits for the mobile networks. (As noted above, this change may be either an increase or a decrease in termination charges depending upon the initial level of these charges). Then from the perspective of the mobile carriers, the increased termination revenues make it more desirable to attract new subscribers, so that mobile network competition is intensified. In this situation, mobile subscription fees will fall, lowering mobile carrier profits. In equilibrium, these two effects offset each other. As a result, while the level of termination charges does affect social surplus and the benefits received by various market participants, it does not tend to alter total mobile carrier profits. Because of this, regulation of mobile termination fees will have no effect on either investment by existing mobile carriers or the entry of new mobile carriers.<sup>301</sup>

Core Research emphasised, however, that there is a need for research on the linkages between interconnection pricing and incentives to invest in infrastructure. Core Research commented that:

While appropriate regulated pricing rules exist for traditional (or one-way) access issues that can generate socially optimal infrastructure the interconnection issue is fundamentally more difficult; especially given the interaction between competition and horizontal trade between incumbent and entrants.<sup>302</sup>

### **Commission's view**

In assessing the likely impact of continued declaration of the mobile termination service on efficient investment in infrastructure, the Commission considers it useful to compare the effect on efficient infrastructure of a revocation of the declaration of the mobile termination service with the effect on efficient investment of continued declaration.

As discussed in Chapter Five of this report, each mobile operator has control over access to a bottleneck facility in the form of the mobile termination service. Given

---

<sup>300</sup> Hutchison, *op. cit.*, p. 7.

<sup>301</sup> J. Gans and S. King, *Price Regulation of Mobile Termination: Promoting Competition and Investment in Telecommunications*, A Report on Behalf of Hutchison Telecommunications, CoRE Research, Melbourne, 26 June 2003, pp. 41-42.

<sup>302</sup> *Ibid.*, p. 42.

this, in the absence of declaration, mobile operators will act in the normal profit-maximising way to raise the price of the mobile termination service above cost to profit-maximising levels. Given the two-sided nature of the service, however, mobile operators may choose to use the economic profits from mobile termination services to subsidise retail mobile service offerings in order to attract mobile subscribers to their networks, subject to the constraint that this increases net profitability. The greater is the effectiveness of competition with regard to the retail mobile services, the greater will be the transfer of economic profits from mobile termination to retail mobile services. Further, to the extent that the prices of mobile termination services are set above cost, this is likely to be reflected in above-cost prices for FTM calls. The Commission has three major concerns surrounding the effect of this pricing structure on efficient investment.

Firstly, if competition with regard to retail mobile services is not fully effective it is unlikely that there will be a full transfer of economic profits from mobile termination to retail mobile services. This would result in mobile operators earning above-normal profits across their mobile business as a whole and, as a consequence, it is likely that this would generate inefficient investment in mobile telephony infrastructure as a whole.

Secondly, even if competition with regard to retail mobile services is fully effective such that there is a substantial or even complete transfer of economic profits from mobile termination in order to subsidise the price of retail mobile services, the resulting cross subsidisation would be likely to result in an inefficient allocation of investment funds across the different infrastructure used to provide mobile telephone services. In particular, the Commission expects the cross-subsidised pricing structure would encourage inefficient over-investment in the infrastructure used to service retail mobile consumers in order to attract greater numbers of subscribers (such as handsets) and inefficient under-investment in the infrastructure used to provide termination and origination capacity. In this regard, the Commission is not convinced by Core Research's arguments that investment by existing mobile carriers will not be affected by the pricing structure mobile operators set across the mobile termination and retail mobile services.

Thirdly, as discussed in Chapter Five, above-cost prices for mobile termination services would be likely to result in fixed-line operators paying above-cost termination prices for fixed-to-mobile calls. This is likely to result in fixed-only carriers being disadvantaged compared with vertically-integrated carriers because fixed-only operators would be required to pay above-cost termination rates for all calls to mobile networks. In contrast, vertically-integrated carriers would only pay above-cost termination rates for calls which do not terminate on their own mobile networks. It is likely that this lessening of competition in the downstream market in which FTM calls are provided would result in inefficient investment by fixed-line carriers. This is because the Commission believes that above-cost FTM call rates would decrease demand for FTM services leading to the potential for inefficiently low levels of investment in fixed-line network infrastructure used to provide call capacity.

In addition to creating the incentive to structure prices for mobile services in a way which hinders efficient investment, the Commission believes that the absence of declaration of the mobile termination service may create an incentive for established

mobile operators either to refuse to provide access to new entrants or to providing access only on terms and conditions which do not allow new entrants to compete effectively. This would increase new entrants' costs relative to established operators' costs and would also inhibit new market entry. It is the Commission's view that this lessening of competition would also result in less than efficient levels of investment in the infrastructure used to provide a range of telecommunications services.

These expected investment outcomes contrast with those which the Commission would expect if the mobile termination service were regulated in such a way that the price of the service were more closely associated with the cost of its provision.

As discussed in Chapter Five, the Commission considers current wholesale mobile termination rates to be significantly above cost. The Commission believes that if continued declaration of the mobile termination service leads to a closer association of the price and cost of the mobile termination service, this will promote competition in the market in which fixed-to-mobile services are provided by enabling fixed-only carriers to compete more equally with integrated carriers. This increased competition will in turn promote more efficient investment in the infrastructure used to provide call capacity on the PSTN network.

The Commission is also of the view that continued declaration which results in an appropriate price for the mobile termination service will encourage mobile operators to recoup more of their investment costs of providing individual mobile services directly from the services which incur the investment costs, rather than cross-subsidising infrastructure investment between services. This is likely to lead to greater efficiency in investment in infrastructure used to provide mobile call services. For instance, the Commission considers that the expected decrease in mobile termination rates to align them more closely with costs would over time be expected to provide mobile operators with appropriate incentives to invest efficiently in capacity in mobile networks.

The Commission believes that the likely impact on the growth of mobile subscription of any consequent increase in retail subscription prices should be considered in the context of the already high level of mobile penetration in Australia.

The Commission disagrees with Vodafone's proposition that continued declaration of the mobile termination service will constrain investment in innovative technology. As indicated above, the Commission believes that continued declaration of the mobile termination service – when combined with a pricing principle that ensures a closer association of the price of the service and its underlying cost of provision – is likely to promote competition in the related market within which fixed-to-mobile services are provided. In turn, this should help provide incentives for providers of services in this market to innovate and invest efficiently in ways that will help them compete and develop new ways of differentiating their product from that of their competitors in this market.

Whether or not declaration will hinder incentives for investment in markets within which mobile telephony services are provided will depend on whether mobile operators are able to earn an economic return on their investments in innovation. In turn, this is to some extent dependent on the price they receive for the mobile

termination service. To the extent that the Commission's pricing principles for this service allow mobile operators to earn an economic return on efficient investment and innovation, the Commission believes that carriers will not be deterred from making efficient investment decisions with regard to the infrastructure used to provide mobile telephony services. This is discussed in more detail in Chapter Eight of this report.

The Commission also believes that declaration *per se* should not be seen as a deterrent to investment and innovation in the mobile services industry. In this regard, the Commission notes that mobile operators have continued to invest heavily in mobile network infrastructure in Australia following regulation of the mobile termination service in July 1997. The Commission also notes Vodafone's recent announcements regarding its intention to invest 'hundreds of millions of dollars over the next two years in the development of a globally compatible 3G network' that will enable customers to receive 3G-based services in Australia by mid 2005.<sup>303</sup> The amount of expenditure by mobile operators in recent years in the infrastructure needed to provide mobile telephony services is set out in Table 4.3 in Chapter Four of this report. Further, the Commission also notes that despite cost-based retail price index (RPI)-X based price regulation of the mobile termination service in the UK, Vodafone has recently announced that it will launch 3G data services in the UK in 2004.

With regard to Optus' argument that the threat of declaration *per se* introduces regulatory risks that might discourage investment in mobile services markets, the Commission acknowledges that uncertainty with regard to the way in which it regulates services can introduce uncertainty into the investment decisions of mobile operators. It is for this reason that the Commission seeks to release pricing principles at the same time as it declares a service (or as soon as possible thereafter) to provide greater certainty to industry with regard to the way the Commission will regulate declared services. In this regard, the Commission believes it is crucially important that it provides as much certainty as possible to the industry regarding how it will regulate telecommunications services. That said, to the extent that existing pricing principles are failing to achieve their intended (and stated) objectives, the Commission believes it has to be flexible and adaptable in the way it regulates services. This was a key concern for the Commission when it proposed the then novel retail benchmarking pricing principle in July 2001, and largely explains why it indicated that review of this pricing principle would be appropriate after a two-year implementation period.

---

<sup>303</sup> Vodafone, *Vodafone Australia Confirms Multi-Million Dollar Investment in Next Mobile Generation*, news release, 14 August 2003.



In the absence of declaration, the Commission also believes that access seekers can face potential uncertainty as to the terms and conditions upon which they will acquire access to particular services. That is, the Commission believes that mobile operators have control over access to essential inputs needed by other telecommunications service providers – some of which are in competition with mobile operators in related telecommunications markets – to provide telecommunications services to end-users. In turn, this confers on mobile operators a number of strategic and competitive advantages, including:

- The ability to control rivals' input costs through price and non-price terms and conditions;
- The ability to leverage off the ownership of essential inputs to gain competitive advantage in related markets; and
- The high level of bargaining power in commercial negotiations resulting from, among other things, asymmetric information regarding costs, technical specifications and network operating requirements.

In turn, these advantages have the potential to create significant uncertainties for potential access seekers with regard to the terms and conditions they will face for access to the mobile termination service. In contrast, a key benefit of declaration in these circumstances is that it can help to overcome some of the uncertainties access seekers face when negotiating terms and conditions of access for the mobile termination service.

## **8. Pricing principles for a declared Mobile Termination Service**

The price charged for a service has a significant impact on the promotion of competition and the encouragement of efficient investment and use of infrastructure, and therefore the LTIE. The Commission therefore sees benefit in signalling at the declaration inquiry stage its thinking on what should be the appropriate principles used to determine a price for the eligible service, were it to be declared. This is particularly relevant given recent amendments to the Act that require the Commission to determine, by writing, pricing principles relating to the price of access to the declared service at the time the Commission declares the service or as soon as possible thereafter.<sup>304</sup> It is also particularly relevant in the case of the mobile termination service, where determination of appropriate pricing principles is a key motivation behind the broader Mobile Services Review.

This chapter presents the Commission's draft views on what form pricing principles should take for a declared mobile termination service. In this regard, the chapter constitutes the Commission's draft pricing principles for a mobile termination service. In order to elucidate upon how the Commission approached the development of these pricing principles, this chapter considers:

- the legislative criteria the Commission is required to consider when determining or assessing the terms and conditions of access to declared services;
- what generic form of pricing principle is appropriate for a mobile termination service; and
- specific issues in the application of this generic form of pricing principle for a mobile termination service.

### **8.1 Legislative criteria**

An important consideration in ensuring that access to declared services is in the LTIE is whether the terms and conditions of access (including the price or a method for ascertaining the price) are reasonable. This is because the mere provision of access by an access provider may not be sufficient to promote the LTIE. The terms and conditions under which access is provided, particularly the price, are therefore also important in determining the degree to which the LTIE is promoted by declaration. The Commission's role in assessing terms and conditions generally revolves around assessing undertakings and arbitrating disputes. In these circumstances, the Act requires that the terms and conditions of access are reasonable.<sup>305</sup> In determining whether terms and conditions are reasonable, regard must be had to the following

---

<sup>304</sup> See s. 152AQA of the Act.

<sup>305</sup> The Commission must also ensure that the terms and conditions in undertakings and any arbitration determination are consistent with any Ministerial pricing determination in place. See s. 152CH of the Act.

matters:

- whether the terms and conditions promote the LTIE of carriage services or of services supplied by means of carriage services, which in turn are achieved by:
  - promoting competition in markets for telecommunications services;
  - achieving any-to-any connectivity in relation to carriage services that involve communication between end-users; and
  - encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which telecommunications services are supplied;<sup>306</sup>
- the legitimate business interests of the carrier or carriage service provider concerned, and the carrier's or provider's investment in facilities used to supply the declared service concerned;
- the interests of persons who have rights to use the declared service concerned;
- the direct costs of providing access to the declared service concerned;
- 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.<sup>307</sup>

This does not, by implication, limit the matters to which regard may be had.<sup>308</sup>

A more detailed discussion of these legislative criteria and their application in determining access pricing principles, can be found in *Access Pricing Principles – Telecommunications – a guide*' (the APP paper).<sup>309</sup>

## **8.2 Which generic form of pricing principle is appropriate for a Mobile Termination Service?**

In earlier parts of this report, the Commission indicated it believes mobile operators have, in the absence of declaration of the mobile termination service, the ability and incentive to raise the price of this service above its underlying cost of production. Mobile operators may, depending on the level of competition in the related retail mobile services market, use some portion of the economic profits from above-cost

---

<sup>306</sup> S. 152AB(2) of the Act.

<sup>307</sup> S. 152AH(1) of the Act.

<sup>308</sup> S. 152AH(2) of the Act.

<sup>309</sup> ACCC, *Access Pricing Principles Telecommunications – a Guide*, 1997.

pricing of the mobile termination service to subsidise the prices they charge potential mobile subscribers in order to attract more subscribers to their network. The Commission believes the resulting structure of prices that would emerge in the absence of declaration is not likely to be in the LTIE because it has the potential to inhibit competition in the market within which FTM services are provided and is likely to generate an inefficient use of, and investment in, the infrastructure used to provide telecommunications services.

To the extent that declaration of the mobile termination service can lead to a closer association of the price of the mobile termination service with its underlying cost of production, the Commission believes the LTIE can be promoted because:

- competition will be promoted in the related market within which FTM services are provided; and
- the extent of any cross-subsidisation of mobile retail services by mobile termination services will be reduced such that a pricing structure would be expected that is more likely to promote an efficient use of, and investment in, the infrastructure by which telecommunications services are provided.

Accordingly, in order for declaration to best promote the LTIE, a pricing principle must be devised for the mobile termination service that will ensure a closer association between the price and cost of providing this service.

Throughout the course of this inquiry, five main options have been presented as alternative approaches for generating this closer association. These are:

- regulatory forbearance;
- greater provision of information to mobile subscribers and FTM callers regarding the price of mobile termination services;
- continuation of some form of retail benchmarking pricing principle;
- a form of cost-based pricing principle; and
- an adjustment path towards a closer association of price and cost.

The advantages and disadvantages of each approach are considered in turn below.

### **8.2.1 Regulatory forbearance**

In considering the full range of pricing principles available for the mobile termination service, the Commission recognises that one possibility may be to do nothing at all. Submissions received by Vodafone and Optus have suggested this is the optimal regulatory approach for the Commission with regard to the mobile termination service. Largely, this view derives from a belief that mobile termination is supplied as part of a broader bundle of mobile telephony services that includes retail mobile services, and that supply of this bundle of services is effectively competitive. Accordingly, regulation of the mobile termination service should be unnecessary, as

competition for the bundle (or cluster) of mobile termination services should ensure the price of the services is kept at an effectively competitive and economically-efficient level. This view is also supported by evidence from Optus that the price it pays Telstra for mobile termination has decreased significantly in recent years from a high of c-i-c cents per minute in 1996 to c-i-c cents per minute in January 2003.<sup>310</sup> Further, Vodafone submits that the weighted average price it charges for termination has decreased from approximately c-i-c cents per minute in December 1998 to around c-i-c cents per minute in June 2003.<sup>311</sup>

As indicated in Chapter Five, the Commission believes that mobile carriers have the ability and incentive to keep the price of mobile termination services above cost. This is irrespective of the overall state of competition in the market for retail mobile services. Largely, this is due to the calling party pays (CPP) principle that governs calls to mobile networks, the control over access to mobile termination that mobile operators have and the incentives this creates for pricing the mobile termination and retail mobile services. This is supported by observations that the price of the mobile termination service appears to be well in excess of cost. To the extent that this is inhibiting the development of effective competition in the downstream market within which the FTM services are provided and leading to an allocatively-inefficient structure of prices for a range of telecommunications services (both fixed and mobile), the Commission believes regulatory forbearance would not be in the LTIE.

While mobile termination prices have declined during the last six years, the Commission notes that the reduction has occurred during a period when the mobile termination service has been declared and subject to regulation under Part XIC of the Act. Absent declaration, the Commission believes the incentives for mobile carriers to lower access prices are minimal and significant reductions should not be expected. Further, whilst the prices of mobile termination services are significantly lower than those observed in 1996, the vast bulk of this reduction appears to have occurred during the period prior to January 2001, by which time the price Optus paid Telstra for mobile termination had already fallen to around c-i-c cents per minute, and the average price Vodafone paid for mobile termination had fallen to a similar level. In the last two-and-a-half years, however, price falls have slowed significantly, with average prices now in the order of 22.5 cents per minute. Market inquiries indicate that price falls for the mobile termination service have largely stalled during the last 12 months while the Commission has considered appropriate pricing principles for this service. Most importantly, based on overseas estimates of the cost of providing the mobile termination service, data collected under the RAF and other corroborative sources (as discussed further in sections 8.2 and 8.3 below), the Commission believes the price of the service is still at least double its underlying cost of production.

Accordingly, the Commission believes that it is unlikely that the price of mobile termination services would trend further towards cost in the absence of any form of regulatory intervention in relation to this service. In turn, concerns regarding the state of competition in the market within which FTM services are provided would remain, and the existing structure of prices across a range of mobile and fixed retail services

---

<sup>310</sup> Optus, *Optus Submission to ACCC on Mobile Services*, June 2003, p. 17.

<sup>311</sup> Letter from Vodafone, 5 August 2003.

would continue to be economically inefficient with possible distortions to carriers build/buy incentives.

Hence, regulatory forbearance is unlikely to be in the LTIE and is therefore an appropriate regulatory approach for the mobile termination service.

### **8.2.2 Provision of pricing information to subscribers and FTM callers**

Some submissions to the review have argued that, if the Commission is concerned about the low level of consumer awareness in relation to the prices being charged by different carriers for mobile termination services, and that this is contributing to the higher prices for mobile termination services, then the Commission should direct its regulation to address this problem ‘at its source’. That is, rather than ‘treat’ the outcome of problems that lead to the price of mobile termination services being in excess of cost, the Commission should instead target the source of the problem by increasing the level of consumer awareness regarding the different prices being set by different carriers for mobile termination services.

During the Commission’s previous consideration of appropriate pricing principles for a mobile termination service in 2001, suggestions made to the Commission included providing end-users with information about which mobile carriers they are calling when they make MTM and FTM calls, and the retail price/access price for mobile termination services associated with a call.

However, the legislative framework under which the Commission operates does not easily lend itself to measures to improve consumer awareness.

The Commission may be able to characterise a requirement to provide information about an access provider’s mobile termination rate in such a way that it falls within the Commission’s power to set terms and conditions for telecommunications services.<sup>312</sup> However, the Commission’s ability to set terms and conditions in relation to access to a mobile termination service is predicated upon the:

- Commission declaring the mobile termination service; and
- the notification of an access dispute with respect to the declared service, to the Commission, by either the access provider or the access seeker.

Such an information requirement would be further limited by its restricted application. Under section 152CP of the Act, a determination setting a term or condition of access to a declared mobile termination service, under an arbitration, would only apply to the parties to the arbitration. Therefore, it is likely that, if the Commission were to implement such a measure in an arbitration, then the termination rate charged by only one carrier would be available to the customers of only one access seeker. Such asymmetric regulation and information could actually create greater consumer confusion and exacerbate any information asymmetries that exist in related markets.

---

<sup>312</sup> See s. 152CP of the Act.

Furthermore, the terms and conditions determined by the Commission in an arbitration would, ordinarily, be considered commercial-in-confidence. Whilst the Commission may make a determination setting terms of conditions of access that require disclosure of the mobile termination rate, or publish the determination under section 152CRA of the Act itself, the Commission would still be required to have regard to the legitimate commercial interests of the parties in doing so. This has the potential to further restrict the Commission's ability to effectively implement a measure to improve consumer awareness.

More importantly, however, the Commission is not convinced that the source of carriers' ability and incentive to raise mobile termination prices above cost derives from a lack of consumer awareness regarding mobile termination prices on different carriers' networks. Rather, the Commission believes that:

- carriers' ability to raise termination prices above cost derives from their exclusive control over access to mobile termination services on their networks, the CPP billing arrangement and the lack of substitute services that might otherwise constrain mobile operators' pricing decisions for the service; and
- their incentive derives from the fact that the greater the price a mobile operator charges other telecommunications service providers for access to termination services on its network at the wholesale level, the greater will be its profit.

As indicated in Chapter Five, even if those individuals making calls to mobile networks had access to information that was easy to understand regarding the mobile network that people they were calling were connected to, there are limited substitution possibilities available to them if they think the price of calling a particular mobile phone user connected to a particular mobile network is too high.

With regard to those parties choosing which mobile network to connect to (and who will then be the recipient of calls to mobile networks), the Commission believes these consumers are unlikely to be inclined to place a constraint on the prices of mobile termination charged by networks they subscribe to. This is because lower mobile termination charges set by these mobile networks (which they would not enjoy the benefit of) might lead to higher charges for retail mobile services (which they would incur). In general, the Commission believes mobile subscribers are unlikely to be sufficiently altruistic to choose those mobile carriers that set lower mobile termination charges.

The Commission believes greater consumer awareness of mobile termination charges would only be likely to create pressure on mobile operators to reduce the price of the mobile termination service to cost if charging arrangements for calls to mobile networks were changed from a CPP arrangement to a receiving party pays (RPP) arrangement. The Commission does not believe such a charging arrangement is likely in the near future.

The Commission believes, therefore, that providing end-users with information regarding the prices charged for mobile termination services would be unlikely to

have a significant impact on the decisions of those who call mobile phones, nor on mobile subscribers' decisions with regard to which mobile networks they should subscribe to. Accordingly, the Commission does not believe it likely to provide a mechanism that will lead to a significant alignment of the price and cost of the mobile termination service on its own.

### **8.2.3 Continuation of some form of retail benchmarking pricing principle**

One possible means of achieving a closer association of price and cost for the service, and therefore to promote the LTIE, could be the continuation of the existing retail benchmarking pricing principle. Under this principle, changes in each mobile carrier's termination access price would, in the case of arbitration, be benchmarked against the retail price movements of the carrier's overall package of services provided on its mobile network.

In short, the retail benchmarking approach works by constructing a price index for each carrier that attempts to show how retail prices for a basket of mobile retail services changes from one six-month period to the next. The services currently included in the benchmarking analysis are outgoing voice calls, charges for SMS services, charges for voicemail services, subscription (access fees), initial connection charges and sales of handsets.<sup>313</sup>

In turn, in the event of an arbitration, the Commission would apply the weighted-average rate of change for these retail services in a given period to the most recently agreed rate for the mobile termination service. In principle, the methodology is designed to ensure that changes in the more competitive retail mobile services market (where prices might be expected to decrease over time) are replicated in less competitive wholesale mobile termination markets.

#### ***Initial consideration of the advantages and disadvantages of a retail benchmarking methodology***

When the retail benchmarking methodology was first introduced in July 2001, the Commission noted that it represented a relatively 'light-handed' means of generating decreases in the prices of mobile termination services towards cost. That is, rather than having to undertake the potentially costly and resource-intensive exercise of determining an appropriate price for the mobile termination service according to a sophisticated cost-based methodology (such as the TSLRIC method used for PSTN originating and terminating access services), the Commission could instead use the relatively less information-intensive method of pegging wholesale price changes to movements in the retail price of mobile services.

At the time the retail benchmarking pricing principle was introduced, there had recently been large decreases in the retail price of mobile services, and the recent introduction of two new carriers; Orange and OneTel. In this regard, information collected on price movements for retail mobile services as part of the Commission's *Changes in Prices Paid for Telecommunications Services in Australia* (the Division

---

<sup>313</sup> For more detail on how the retail benchmarking pricing principle operates, see ACCC, *A Monitoring Report Associated with the Implementation of the Pricing Methodology for the GSM Termination Service*, August 2003.



12 Report) showed the average price paid for GSM mobile services had decreased by 12.3 per cent during the 1999-00 financial year. Accordingly, the Commission was of the view that benchmarking changes in the price of the mobile termination service against such retail price movements would ensure that the significant price reductions in the retail mobile services market could be used to generate reductions in the price of mobile termination services towards their underlying cost of production.

That said, the Commission did note that the success of this pricing methodology relied heavily on expected decreases in the retail prices of mobile services. In this regard, the 2001 GSM pricing principles report indicated that:

The decision is 'on balance' and the pricing principles (including forbearance) which best promote the LTIE may change over time. In particular, the Commission recognises the limitations of the retail benchmarking approach and also the anti-competitive conduct provisions of the Act. If continued retail price falls do not eventuate or if price squeezing is observed in the fixed-to-mobile market, the Commission may need to reconsider this pricing principle at the time of the next review.<sup>314</sup>

Accordingly, in order to determine whether such price decreases would occur, the Commission indicated it would implement a monitoring program to measure changes in the retail prices of mobile telephony services over this period. The Commission also indicated it would review the success of the retail benchmarking pricing principle after an initial implementation period of two years. Further, the Commission indicated its monitoring program would also:

- determine whether there may be increasing competitive forces on mobile termination through other forces (such as evidence of more closed-user groups and increased use of call back, etc.); and
- determine whether vertically-integrated mobile carriers (who are likely to face lower internal access prices for mobile termination) engage in anti-competitive pricing of FTM calls.

The final results of this monitoring are outlined below.

### ***Retail benchmarking monitoring program***

In August 2003, the Commission released its first set of results outlining changes in the retail price of GSM mobile services. The results showed that, during the monitoring period, the rate of change in the retail price of the bundle of mobile services varied across carriers and was, by and large, inconsistent with the price decreases observed by the Commission prior to adopting this methodology. These results have subsequently been expanded to include an additional period of retail price monitoring for each carrier. The final results for each of the three carriers are outlined in turn below:

---

<sup>314</sup> ACCC, *Pricing Methodology for the GSM Termination Service – Final Report*, July 2001, p. 78.

### *Telstra's retail price movements*

The six-month period from January to June 2001 serves as the base period for the index for the average retail price of Telstra's GSM mobile services. Table 8.1 below shows the period-on-period percentage changes in Telstra's average retail price from the base period to the period with the latest available data, January to June 2003.

**Table 8.1 Telstra's retail price movements**

	Jan–Jun 2001	Jul–Dec 2001	Jan–Jun 2002	Jul–Dec 2002	Jan–Jun 2003
Telstra	base period	-1.4%	+7.5%	-1.7%	-1.6%

*Source: information provided to the Commission by Telstra.*

Table 8.1 reveals that Telstra's average retail price for its GSM mobile services decreased by 1.4 per cent from January-June 2001 to July-December 2001; increased by 7.5 per cent from July-December 2001 to January-June 2002; and decreased by 1.7 per cent from January-June 2002 to July-December 2002. Results from the latest monitoring period show the average retail price decreased by 1.6 per cent during the period from July-December 2002 to January-June 2003.

### *Vodafone's retail price movements*

Table 8.2 below shows the period-on-period percentage changes in Vodafone's average retail price from the base period to the period with the latest available data, January to June 2003. The six-month period from July to December 2001 serves as the base period for the index for the average retail price of Vodafone's GSM mobile service.

**Table 8.2 Vodafone's retail price movements**

	Jan–Jun 2001	Jul–Dec 2001	Jan–Jun 2002	Jul–Dec 2002	Jan–June 2003
Vodafone		base period	+3.6%	-9.0%	-1.9%

*Source: information provided to the Commission by Vodafone.*

Vodafone's average retail price for its GSM mobile services increased by 3.6 per cent from July-December 2001 to January-June 2002; and decreased by 9 per cent from January-June 2002 to July-December 2002. It decreased by 1.9 per cent during the latest monitoring period from July-December 2002 to January-June 2003.

### *Optus' retail price movements*

Optus has aligned its retail benchmarking reports with its six-month reporting periods under the RAF. Accordingly, its reports cover the six-month periods from 1 April to 30 September and from 1 October to 31 March.

The six-month period from October 2000 to March 2001 serves as the base period for the index for the average retail price of Optus' GSM mobile services. Table 8.3

below shows the period-on-period percentage changes in Optus' average retail price from the base period to the period with the latest available data, October 2002 to March 2003.

**Table 8.3 Optus' retail price movements**

	Oct 2000 – Mar 2001	Apr–Sep 2001	Oct 2001– Mar 2002	Apr–Sep 2002	Oct 2002 – March 2003
SingTel Optus	base period	+9.9%	+6.8%	-3.7%	0.0%

*Source: information provided to the Commission by Optus.*

Optus' average retail price for its GSM mobile services increased by 9.9 per cent from October 2000-March 2001 to April-September 2001; rose further by 6.8 per cent from April-September 2001 to October 2001-March 2002; and fell by 3.7 per cent from October 2001-March 2002 to April-September 2002. During the most recent reporting period, the average price paid for Optus' retail mobile services remained unchanged.

Overall, these results tend to indicate that over the full breadth of the monitoring periods, retail prices for mobile services have tended to decrease little (if at all) for each carrier and that there is no guarantee under the retail benchmarking pricing principle that the average price of the retail basket of services will decrease from one period to the next. Such results would appear to call into question the foundation upon which the retail benchmarking pricing principle is designed to work.

In addition to these observations from the retail benchmarking monitoring process, the Commission also notes the separate index of retail price movements for mobile services constructed each year for the Commission's Division 12 Reports. In the 2001-02 report, the Commission observed that the average price paid for retail mobile services had, in real terms, decreased by only 0.9 per cent for the 2001-02 financial year. This price decrease was much lower than that observed in the two previous financial years, where the average price paid for GSM services decreased by around 12.3 per cent during the 1999-00 financial year, and by 6.7 per cent over the 2000-01 financial year.

Initial observations for the 2002-03 Division 12 Report indicate that this trend of slowing price decreases has continued. Indeed, for the first time in the index's history, initial results for 2002-03 suggest there will be a reported *increase* in the average price paid for mobile telephony services during this period. Further, it is noted that these price movements are measured in real terms. Accordingly, the actual – or nominal – prices paid by end-users would have increased by an even larger amount.

***Evidence of increased competitive forces in the market***

The Commission believes that there is no evidence to suggest an increase in competitive forces in the mobile services market since June 2001 that would indicate the existence of greater competitive forces applying to providers of mobile

termination services. Indeed, since this time, one facilities-based competitor (OneTel) has left the market and the market shares of the remaining carriers appear to have changed little. Further, as discussed in Chapter Five, the mobile services market appears to be less than effectively competitive and that Telstra and Optus appear to be earning rates of return well in excess of effectively competitive levels.

### ***Evidence regarding anti-competitive conduct in the FTM market***

A number of parties have alleged that vertically-integrated carriers may be engaging in anti-competitive price squeezes, price discrimination and bundling in the downstream FTM services market. Most allege this is possible because of the market power some vertically-integrated carriers have in the downstream market within which FTM services are provided caused by the ineffectiveness of the existing mobile termination pricing principle. The Commission has commenced separate investigations regarding pricing practices for FTM services in the corporate sector of the market to ascertain the veracity of these claims. As indicated in Chapter Five of this report, the Commission is also separately conducting investigations into specific allegations of anti-competitive conduct by some carriers in the market within which FTM services are provided under Part XIB of the Act.

### ***Overall assessment of the existing retail benchmarking methodology***

Overall, the Commission believes the retail benchmarking methodology has, to date, shown little evidence of its ability to meet its original objective. That is, if applied in any arbitration to date, the methodology would have been unlikely to generate meaningful decreases in the price of mobile termination services towards cost. Further, there does not appear to be evidence of the emergence of greater competitive pressures on the pricing of mobile termination services. Finally, there continue to be grounds for concern with regard to the possibility of anti-competitive pricing of FTM services in downstream markets.

In addition, the Commission now has further reasons to doubt the theoretical basis of this pricing principle. In particular, it is concerned that:

- mobile operators have limited incentive to reduce the price of retail mobile services if they will be required to decrease mobile termination charges as well. That is, in the absence of any associated decrease in the cost of running mobile networks, a decrease in both the price of the mobile termination service and retail mobile services would be likely to reduce their overall profits;
- if this is true, then the only way a mobile operator can profitably decrease both retail and wholesale termination prices would be if its costs of production decrease. If this is the case, whilst the price of mobile termination services may be able to come down, the difference between the cost of mobile termination and its price will not be eroded. Accordingly, concerns about the differential costs faced by vertically-integrated and fixed-line only operators in the related market within which FTM services are provided would continue to exist; and

- to the extent that this pricing principle does little to affect the level of competition in the related market within which FTM services are provided, problems of incomplete FTM ‘pass-through’ may continue. The Commission believes that a key cause of incomplete pass-through in the market within which FTM services are provided is the lack of effective competition in this market. A pricing principle that is unable to address the difference between the price and cost of mobile termination services will maintain an ineffective level of competition in the related market within which FTM services are provided.

Some of these concerns have also been raised by Oftel in its assessment of the suitability of the retail benchmarking pricing principle for determining appropriate access prices for mobile termination services in the UK. In particular, Oftel has noted that:

- the retail prices – to which charges for mobile termination are linked – do not appear to have fallen in Australia since the approach was announced, and this has limited the impact of the benchmarking approach compared to that which was originally envisaged; and
- the approach is unlikely to correct the perceived imbalance between retail origination prices and termination charges in the longer term, regardless of whether termination charges are reduced by the same as a basket of retail prices or a mobile operator’s own retail prices.

***Can the retail benchmarking methodology be altered to generate more appropriate outcomes?***

In its submission to the Mobile Services Review, Telstra indicated it believed the current retail benchmarking methodology might potentially be improved through a minor modification in the way it is implemented. In this regard, Telstra notes that it believes the benchmarking methodology provides no incentive for mobile operators to lower their wholesale or retail prices for mobile telephony services. Telstra believes, however, that an amendment that makes the relevant starting price for the mobile termination service the lowest available rate in the *industry*, and which links changes in that rate to the industry’s retail price movements, could potentially address this problem.

During the course of market inquiries and the public forums held for the Mobile Services Review, Telstra expanded on these thoughts indicating it believed such an adjustment had merit as it would weaken the link between each mobile carrier’s retail price movements and its own individual termination rates. That is, a one per cent decrease in an individual carrier’s retail prices would, given an individual carrier’s market share is less than 100 per cent, generate a less than one per cent decrease in the weighted-average price change for the industry as a whole (and upon which changes in mobile termination rates would be based). Hence, the disincentive to reduce mobile termination charges would be lessened for each carrier.

In meetings with Telstra, it indicated it has constructed a model suggesting that a change to this form of retail benchmarking pricing principle would generate decreases

in the mobile termination rate of c-i-c per cent and c-i-c per cent for the FTM retail price. At this stage, however, Telstra has not provided details of how this model is constructed, or the data used to derive these results. Further, the Commission understands that Telstra has adopted assumptions in line with a ‘Bertrand’ model of oligopolistic pricing behaviour when designing its model, where each competitor assumes its rivals will hold their price irrespective of what it does. Each competitor does this in consecutive moves, even though it always turns out to be wrong assumption to make, resulting in them successively undercutting each other in a ‘price war’. Adopting Bertrand’s assumption is likely to generate the greatest possible price decreases for carriers operating under an oligopolistic scenario.

That said, whilst the modelling work performed by Telstra is likely to be based on assumptions that would generate a significant lowering of termination rates, it is possible that some increase to the rate of price reduction may be engendered by a switch to accommodate Telstra’s suggestion. The Commission is concerned, however, that the suggested modifications to the pricing principle still do not overcome the more basic flaws of the retail benchmarking pricing principle. That is, the principle would still require downward pressure on mobile termination rates to come from downward pressure on retail prices. To the extent that the retail mobile services market is effectively competitive, mobile operators are limited in their ability to decrease both retail and wholesale charges. To the extent that the retail mobile services market was not effectively competitive, the pressure to reduce retail rates in order to generate decreases in mobile termination rates would also be reduced as carriers would be likely to seek to preserve any existing economic profits. Decreases in the retail (and subsequently wholesale) rates would reduce the existing level of economic profit and would therefore be unlikely to be pursued by mobile operators in this environment.

#### **8.2.4 Cost-based pricing methodologies**

Throughout the course of this inquiry, many parties have advocated the replacement of the retail benchmarking pricing principle with a cost-based alternative. In this regard, two main cost models have been proposed – short-run marginal cost (SRMC) and total service long-run incremental cost (TSLRIC). The merits of each alternative are discussed in turn below.

##### ***Short-run marginal cost (SRMC)***

In a submission prepared on behalf of Hutchison, Gans and King argue that the appropriate pricing principle for a mobile termination service should be either ‘marginal cost’ (by which is meant SRMC) or symmetric termination charging for termination on PSTN and mobile networks.<sup>315</sup>

---

<sup>315</sup> J. Gans and S. King, *Price Regulation of Mobile Termination: Promoting Competition and Investment in Telecommunications*, A Report on Behalf of Hutchison Telecommunications, CoRE Research, Melbourne, 26 June 2003., p. 50. The Commission notes, however, that the SRMC approach is not formally proposed in Hutchison’s submission and Hutchison is ‘not prepared to recommend ... a particular pricing principle’ – Hutchison 3G Australia, *Submission to the ACCC Mobile Services Review 2003*, 16 June 2003, p. 18.

The Commission does not believe basing mobile termination prices on a SRMC pricing principle would be in the LTIE because it would take no account of the long-run costs a mobile operator incurs when it provides mobile termination services to access seekers. Accordingly, such a pricing principle would not account adequately for the legitimate business interests of access providers and is otherwise inconsistent with the LTIE.

Similarly, parity with PSTN termination would provide inadequate compensation to access providers as PSTN costs of around 1 cent per minute are substantially lower than the Commission's expectations of the cost of providing mobile termination services.

### ***Total Service Long-run Incremental Cost (TSLRIC)***

The Commission's 'usual' approach to pricing declared services is to use a TSLRIC pricing methodology. In July 1997, the Commission released its general guide to access pricing principles.<sup>316</sup> The APP paper concluded that the Commission does not consider it appropriate to specify a common methodology for determining an access price for all declared services. However, it did conclude that, in the usual case, the Commission would apply the TSLRIC methodology for determining access prices, as this is the methodology that would best promote the LTIE and the other goals of the statutory criteria.

A number of submissions supported TSLRIC as the choice of costing methodology. Indeed, a cost-based approach is favoured by all parties other than the three main mobile carriers.

For example, the CCC 'is of the view that ... [efficient prices are] best achieved if such prices are calculated in accordance with TSLRIC'.<sup>317</sup> Similarly, AAPT notes that 'the most appropriate principle for determining a price for mobile termination is TSLRIC'<sup>318</sup> and that in 'the continued absence of ... competitive pressure, TSLRIC pricing is now more necessary than ever'.<sup>319</sup>

A TSLRIC-based approach is also suggested by PowerTel<sup>320</sup>, MCI<sup>321</sup>, CompTel<sup>322</sup>, Australian Consumers' Association<sup>323</sup> and SETEL.<sup>324</sup>

The concept of TSLRIC can be understood by breaking it up into its components:

- 'Total service' refers to it being the cost of production of an entire service (or an entire production element) not to the cost of a particular unit. However, with respect to carriage services, it is usually expressed on a per-minute basis by dividing the annual total service cost by the number of minutes carried.

---

<sup>316</sup> ACCC, *Access Pricing Principles, Telecommunications – a guide*, July 1997.

<sup>317</sup> CCC, *op. cit.*, p. 34.

<sup>318</sup> AAPT, *op. cit.*, p. 39.

<sup>319</sup> *Ibid*, p. 46.

<sup>320</sup> PowerTel, submission by PowerTel Limited, 18 August 2003, p. 3.

<sup>321</sup> MCI, *op. cit.*, pp. 12-14.

<sup>322</sup> CompTel, *op. cit.*, p. 2.

<sup>323</sup> Australian Consumers' Association, *op. cit.*, p. 2.

<sup>324</sup> SETEL, *op. cit.*, p. 4.

- ‘Long run’ refers to it being a long-run cost concept in contrast to a short-run one. In the short run the amount of at least one factor of production (usually capital equipment) is fixed, while in the long run all factors of production can be varied.
- ‘Incremental cost’ means that it is a form of ‘marginal cost’, although not the more familiar ‘marginal cost’ of the change in cost incurred through a change in the *amount* of output produced.<sup>325</sup>
- It is also an attributable cost concept as it refers only to those costs that can be attributed to the production of the service. Costs common to more than one service cannot be attributed to a particular service and therefore do not form part of a ‘pure’ TSLRIC. However, in practice, it is sometimes defined to include a contribution to organisational-level costs (‘TSLRIC+’).

Given these attributes, TSLRIC can be defined in the following alternative ways:

- it is the incremental or additional cost – on an annual basis – the firm incurs in the long run in providing a particular service (or production element) as a whole, assuming the scale of all of its other production activities remain unchanged; or
- it is the total cost (on an annual basis) the firm would avoid in the long run if it ceased to provide the service as a whole.

For the purposes of estimation, the TSLRIC of supplying a service can be expressed as the sum of the operating and maintenance costs and the capital costs (both physical and the risk-adjusted opportunity cost of capital) that the firm incurs in providing the service as a whole over a certain forward-looking period, typically annually.

The TSLRIC pricing principle – or variants of it – has been found to be consistent with the LTIE by the Commission for a number of declared telecommunications services in the past such as PSTN originating and termination access services, the unconditioned local loop service (ULLS) and the line sharing service (LSS). Largely, the Commission has found this pricing principle to be appropriate for declared telecommunications services because it:

- reflects the direct cost of supplying the service;
- ensures equally-efficient access seekers in related markets are able to compete on an equal footing with vertically-integrated access providers as both will face similar input costs for the declared service;
- takes account of the interests of both access providers and access seekers; and

---

<sup>325</sup> Unless explicitly qualified, the words ‘incremental’ and ‘marginal’ are synonymous and are used here interchangeably.



- encourages the economically efficient use of, and the economically efficient investment in, the infrastructure used to provide telecommunications services.

The Commission has also previously stated that TSLRIC is particularly appropriate for services that are well developed, necessary for competition in dependent markets and where the forces of competition work poorly in constraining prices.

When the Commission considered the question of appropriate pricing principles for the mobile termination service in July 2001, it considered that the mobile termination service met the last two of these three conditions. However, the Commission was concerned that the mobile termination service was not provided in a well-developed market. In addition to this, the Commission was concerned that, while cost-based approaches have favourable properties in the sense of limiting opportunities for anti-competitive behaviour by integrated carriers and potentially improving allocative efficiency, the costs of implementing the approach (both in terms of actual resource costs and the risks if implemented incorrectly) outweighed the benefits at that stage. Partly as a result of these concerns, the Commission argued that the alternative retail benchmarking pricing principle was more appropriate for this service at that time.

In addition to concerns about the effectiveness and suitability of the retail benchmarking pricing principle outlined above, many factors have changed in the ensuing two and a half years that would now make the application of a TSLRIC pricing methodology more appropriate than appeared the case in June 2001. In particular:

- cost-based models have since been developed in the UK and the US that could guide the Commission in the development of a TSLRIC model of its own;
- some of these models – in particular, those developed in the UK – have considered difficult issues of organisational-level cost allocation and the appropriateness of including mark-ups to account for network externalities; and
- the market has had additional time to develop such that it is likely that voice termination on mobile networks should be considered to be a well-developed service, including that the number of mobile subscriptions is now at a level substantially greater than that of fixed-line connections in Australia.

Accordingly, in addition to the theoretical advantages TSLRIC has over a retail benchmarking alternative, the case for a TSLRIC pricing methodology is now more compelling on practical grounds than appeared to be the case when the Commission made its decision to implement a retail benchmarking pricing principle for the mobile termination service.

That said, the Commission is still concerned that estimation of a TSLRIC price for the mobile termination service would be costly (in a resource sense) and time consuming to implement. The Commission is also concerned that immediate implementation of a

TSLRIC price would be likely to lead to very substantial reductions in the price of this service within a short period of time. In turn, the Commission is concerned that this would be likely to generate significant and potentially harmful disruption to the operations and planning of a number of telecommunications carriers.

As a result of these concerns, the Commission believes it would still be inappropriate to immediately implement a TSLRIC pricing principle for this service at this time.

### **8.2.5 An adjustment path towards a closer association of prices and costs for the mobile termination service**

While the Commission continues to believe that immediate introduction of a Commission-estimated TSLRIC price would be inappropriate for the mobile termination service at this time, it does believe that a pricing principle must be established that generates a closer association between the price and underlying cost of the mobile termination service. Generation of such a price would, as discussed in detail in Chapters Five to Seven of this report, significantly promote the LTIE, as it would help promote competition in downstream markets and a more efficient use of and investment in the infrastructure used to provide telecommunications services.

Given the Commission believes it would not be appropriate for it to model the TSLRIC of providing the mobile termination service at this time, yet continues to believe a closer association of the price and cost of the mobile termination service would be in the LTIE, the Commission believes an alternative pricing principle should be established based on alternative estimates of cost available to it. In this regard, PowerTel<sup>326</sup>, Hutchison<sup>327</sup>, AAPT<sup>328</sup> and the ACA<sup>329</sup> have all suggested that the Commission consider the use of benchmarks and other proxy measures of cost when regulating the mobile termination service. The CCC favours this approach as an interim measure.<sup>330</sup>

Provided such a benchmark measure could be correctly specified such that it genuinely generated a closer association of the price and cost of providing the mobile termination service, the Commission believes such an approach will promote the LTIE. Given concerns about the possibility of significant adjustment costs (or ‘rate shock’) generated by an immediate fall in the price of the mobile termination service to such a benchmarked measure, the Commission believes an ‘adjustment’ mechanism should be implemented that ensures the price of the service gradually trends towards this benchmark over a succession of periods.

The Commission has therefore decided to adopt a pricing principle for the mobile termination service that generates a gradual reduction in the price of the mobile termination service so that it reduces to a level that represents a closer association of price and the best cost measures the Commission has available to it.

---

<sup>326</sup> PowerTel, *op. cit.*, p. 3.

<sup>327</sup> Hutchison 3G Australia, *Submission to the ACCC Mobile Services Review 2003*, 16 June 2003, pp. 20-21.

<sup>328</sup> AAPT, *op. cit.*, pp. 47-49.

<sup>329</sup> Australian Consumers’ Association, *op. cit.*, p. 2.

<sup>330</sup> CCC, *op. cit.*, p. 34.

### 8.3 Issues associated with implementation of the Commission's preferred pricing principle

Implementation of the Commission's preferred pricing principles involves three key implementation issues:

1. The determination of an appropriate 'target' termination price;
2. The determination of an appropriate adjustment path towards this target price in order to minimise possible adjustment costs; and
3. The need to address concerns relating to the possibility of incomplete FTM 'pass-through'.

Each of these implementation issues is considered in more detail below.

#### *Adoption of a target termination price*

There are four sources of information available to the Commission about the underlying cost of providing the mobile termination service that the Commission could rely upon when setting a target price for the service.

First, as indicated above, the Commission notes that TSLRIC cost estimates for mobile termination services have been derived in overseas jurisdictions (three states of the United States and the United Kingdom). Benchmarking against these costs would suggest a price for the mobile termination service of between 8 and 12 cents per minute.<sup>331</sup>

Second, cost data collected from carriers as part of the Regulatory Accounting Framework (RAF) could be used as a basis for calculating a TSLRIC proxy.<sup>332</sup> In the case of Telstra for 2002-03, this procedure applied to the External Wholesale Account results in an estimate of c-i-c cents per minute, including Telstra's allocation to organisational-level costs or c-i-c cents per minute if this allocation is excluded.

Third, a number of parties have suggested that retail prices for MTM calls could be used as a basis for inferring underlying cost. On this basis, PowerTel 'estimates that the true cost for mobile termination is in the region of 5-6cpm'.<sup>333</sup> AAPT uses a similar analysis to conclude that 'current termination charges are significantly above costs'.<sup>334</sup>

Fourth, the Commission has had regard to a range of other information sources on the costs of GSM and CDMA termination, including those briefly reviewed in its 2001

---

<sup>331</sup> These data were included in MCI's submission of 13 June 2003, pp. 3-6. MCI also supplied copies of the studies underlying these estimates. The Commission has adjusted these rates to account for current exchange rates.

<sup>332</sup> PowerTel in its submission (of 18 August 2003) argued that 'the Commission should consider the use of Regulatory Accounting Framework ... data to calculate interim prices' (p. 4).

<sup>333</sup> PowerTel, *op. cit.*, p. 3.

<sup>334</sup> AAPT, *op. cit.*, pp. 58-59.

Report.<sup>335</sup> These included modelling done by an Australian carrier and supplied to the Commission on a c-i-c basis, and which indicates costs comfortably within the range considered by the Commission.

Overall, therefore, the Commission has available to it a number of measures that could be used to estimate the cost of providing the mobile termination service. These range from 5-6 cents per minute to around 12 cents per minute. Accordingly, the Commission is confident in setting 12 cents per minute as a conservative price target for the mobile termination service.

*A gradual adjustment to the target price to address concerns regarding adjustment costs*

Whilst the Commission believes that a closer association of the price of mobile termination services and its underlying cost of production would generate a number of benefits in terms of promoting the LTIE, a sudden decrease could also cause substantial adjustment costs. In particular, any move substantially to reduce the price of mobile termination services could generate significant disruption to the pricing and business strategies of mobile network operators.

To address these concerns, regulators in Europe have tended to implement mechanisms that would ensure a gradual reduction in the price of mobile termination services towards cost over time. This is usually in the form of some type of CPI minus X per cent price reductions over a specified number of periods. A similar type of staged adjustment path could be developed in Australia, where the price of mobile termination services would be expected to decrease in staged adjustments towards the conservative target price over time.

The Commission believes there are four key issues in determining an appropriate adjustment path towards the 12 cents per minute target price:

1. What is the starting date and price – With regard to the appropriate starting date, the Commission notes that the pricing principle would be effective from the time of release of a Final Decision in this inquiry. Given the existing mobile termination service declaration expires on 30 June 2004, the Commission expects to make its final decisions on this matter by this date. Accordingly, the new pricing principle would take effect from 1 July 2004.

In choosing a starting price for the adjustment path of the pricing principle, the Commission has been mindful of the limited level of reduction in the price of the mobile termination service in recent periods and especially during the period over which the Commission has conducted this inquiry. This leads it to believe an immediate reduction in the price of the mobile termination service should be implemented on 1 July 2004. Against this, however, the Commission is also mindful that an immediate and significant reduction would give mobile operators little time to adjust their business plans in response to a regulated change in the price of the service. On balance, therefore, the Commission believes it would be appropriate to base the start of the

---

<sup>335</sup> ACCC, *Pricing Methodology for the GSM Termination Service Final Report*, July 2001, p. 14.

adjustment process on the lowest available price in the market at present. Based on information available to it, the Commission understands this is currently 21 cents per minute.

2. What is the target price – For the reasons outlined above, the Commission believes the target price should be set at 12 cents per minute, expressed in 2003-04 prices.
3. Over how many periods should the adjustment path operate – Given the dynamic nature of the telecommunications industry, the Commission believes it appropriate in this instance that its pricing principle apply for no more than three years. Accordingly, the Commission believes its pricing principle should apply up until 30 June 2007.

Following implementation of the first price reduction to 21 cents per minute on 1 July 2004, the Commission believes the next price reduction should occur six months later on 1 January 2005. Following this, the Commission believes two further price reductions should occur on each of 1 January 2006 and 1 January 2007. This implies three price reductions from 21 cents per minute to the eventual target of 12 cents per minute. In order to ensure a steady reduction in the price of the service, the Commission has decided that each of these price reductions should be of 3 cents per minute each. The schedule of prices required by this adjustment path is outlined in Table 8.5 below

	Adjustment Path
1 July 2004	21 cpm
1 January 2005	18 cpm
1 January 2006	15 cpm
1 January 2007	12 cpm

*Table 8.5 – Adjustment path for the pricing principle*

4. Should the target be CPI and Total Factor Productivity (TFP) adjusted – Not adjusting for CPI changes would mean the target would fall to be lower than 12 cents per minute in real terms by the end of the three-year implementation period. Inclusion of a CPI adjustment would mean the nominal (and therefore effective) price target would grow over the three year adjustment period to be greater than 12 cents per minute (e.g. 3 per cent inflation each year would increase the target to 13.1 cents per minute after three years). On the other hand, TFP growth implies expected cost savings for a service. The effect of including a TFP measure would be to lower the target price (i.e. to take account of expected cost savings). The Commission’s view on this issue is that either both these adjustments should be made or neither adjustment made. On balance, it believes the latter course is superior. While the CPI adjustment is relatively straightforward, a TFP adjustment is not.

## 8.4 Mechanisms to address FTM ‘pass-through’

The pass-through in lower retail FTM prices of a substantial proportion of reductions in termination charges will hardly influence the size of the consumer benefits and efficiency gains the Commission expects from declaration and the staged adoption of a pricing principle yielding a closer association of price with its underlying cost.<sup>336</sup>

The Commission has considered the pass-through issue both in principle and empirically. Basic economic analysis would suggest that a profit-maximising monopolist would pass-through 50 per cent of any cost reduction, while a totally competitive market would pass-through the entire cost saving in lower retail prices. In the Commission’s view, the market in which FTM services are provided lies within these bands – albeit closer to the monopoly end of the spectrum – and this is reflected in the empirical observation of pass-through of over 50 per cent when considered over the entire period since 1997-98. Over time, as competition develops in this market, the Commission expects that retail prices will decrease because of both decreases in termination charges and through the market becoming more competitive. This could result in the appearance of pass-through in excess of 100 per cent.

### *Greater competition in the FTM call market*

To the extent that the downstream market within which FTM services are provided remains less than effectively competitive, it is unlikely that decreases in mobile termination rates will be completely ‘passed-through’ to end-users of FTM services.

However, a key benefit of declaration of the mobile termination service with implementation of an accompanying pricing principle yielding a closer association of price with underlying cost, is that the market within which FTM services are provided will become more competitive. Accordingly, the pricing principle itself should, over the long-term, work to provide a greater level of FTM ‘pass-through’. The Commission’s views on this are set out in detail in section 5.4 of this report.

### *Tying availability of lower termination charges to access seekers’ setting lower retail prices*

The FTM call market is currently a long way from being effectively competitive, and the greater competition from the Commission’s recommendations will only be felt over time. In this light, some carriers, and in particular Hutchison, have raised concerns about the competitive advantage a lack of FTM pass-through will provide to the vertically-integrated carriers with which it competes in the mobile services market. Hutchison has also noted that less-than-complete FTM pass-through would reduce the benefits end-users would enjoy from a lowering of mobile termination prices. Accordingly, Hutchison has urged the Commission to consider incorporating

---

<sup>336</sup> The Commission notes, however, that it may not be necessary to demonstrate that any reductions in the charges for wholesale inputs (i.e. the mobile termination service) will be passed on to end-users in order to consider that such reductions would be in the LTIE. The LTIE test under s. 152AB of the Act requires consideration of the extent to which declaration promotes competition and encourages efficiency. The test does not require that the declaration of itself actually causes increased competition or efficiency.

into its pricing principle a mechanism to ensure a greater degree of ‘pass-through’ to end-users.<sup>337</sup>

In meetings with the Commission, Hutchison has suggested a mechanism whereby the Commission would set a range of prices for mobile termination services depending on the retail prices being set by access seekers for FTM services. That is, access seekers would be able to receive lower prices for mobile termination services only where they demonstrated they would be charging lower retail prices for FTM services.

Hutchison suggests that the key advantages of such an approach are that it:

- should ensure pass-through;
- will provide an incentive for lower prices in the downstream FTM market; and
- should promote more competitive outcomes in the downstream market within which FTM services are provided.

The Commission notes that an approach that links mobile termination prices to the prices charged in the FTM retail market could involve considerable complexity, as 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 mobile termination 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 mobile termination service is likely to remain unchanged.

The Commission also believes, as noted by Hutchison in its meetings with the Commission, that the only way this mechanism could work in a way that ensured the legitimate business interests of access providers were met would probably involve setting a price floor.

In any event, the Commission considers that in the long run competition in the downstream market for FTM services is likely to encourage and result in the pass-through of reductions in mobile termination prices to end-users. Given this, the Commission notes that any short term benefits that could be obtained by end-users, through pricing principles that require pass-through, may not be achievable in the short term due to the likely complexity of negotiations, or arbitration, and the consequent amount of time needed for parties to reach agreement, or the Commission to make a determination.

That said, the Commission notes the mechanisms has some potential benefits and would therefore welcome comments from interested parties as to the suitability of such a mechanism.

---

<sup>337</sup> Hutchison, *op. cit.*, pp. 12-14.

### *Retail price controls*

A further possible option for addressing pass-through is the use of the Government's retail price control mechanism to exert greater downward pressure on Telstra's – and therefore probably its competitors' – retail FTM prices. One party, the Australian Consumers' Association, called for

... an amendment of the Telstra price cap regime to create a specific fixed-to-mobile sub-basket that mandates retail pass-through ...<sup>338</sup>

A number of other parties considered the issue of modifying retail price controls, but none favoured their use in relation to pass-through. For example, Telstra dismissed the relevance of considering retail price controls in the light of what it saw as existing 'adequate' pass-through,<sup>339</sup> Optus observed that FTM prices were already in the call basket of the retail price controls and 'this is efficient',<sup>340</sup> and Vodafone 'would not support the introduction of additional retail price controls'.<sup>341</sup>

At the outset it needs to be pointed out that the Commission has no powers to determine the retail price controls applying to Telstra. In the past it has advised the Minister on retail price control arrangements<sup>342</sup>, and since 1997 it has reported to the Minister on Telstra's compliance with the controls.

In its February 2001 report to the Minister on retail price controls, the Commission did not favour the continuation of existing sub-caps due to the superior efficiency properties of broad-basket price caps. Consistent with this view, the Commission believes the addition of more sub-caps to the retail price control arrangements is not an appropriate way to address the pass-through issue. On the other hand, it observes that the retail price controls applying to Telstra have, since 2002-03, exerted a weaker constraint on Telstra's FTM pricing than did the previous regime, and this has coincided with FTM prices ceasing to decrease. While the placement of FTM calls (together with local, national long-distance and international outgoing calls) in a CPI – 4.5 per cent basket appears similar to its previous placement in a broader basket with a CPI – 5.5 per cent constraint, the downward pressure on call prices is weaker for two reasons. First, the previous broad basket contained line rentals which have tended to increase. Under the 2002 Determination, line rentals are placed in a separate CPI + 4 per cent basket meaning that a stronger constraint would have been necessary for the call basket in order for the weighted-average price of PSTN services to have been constrained as much as under the previous regime. Second, the Government allowed Telstra to carry-over credits from the previous retail price control regime, and this meant Telstra actually had the freedom to increase the real value of the weighted average of the prices in the call basket in 2002-03.

---

<sup>338</sup> Australian Consumers' Association, *Response to the ACCC Discussion Paper*, 11 June 2003, p. 3.

<sup>339</sup> Telstra, *op. cit.*, pp. 3, 8.

<sup>340</sup> Optus, *op. cit.*, p. 56.

<sup>341</sup> Vodafone, *op. cit.*, p. 17.

<sup>342</sup> ACCC, *Review of Price Control Arrangements*, February 2001.



## 8.5 Conclusions

Overall, therefore, the Commission believes:

- That regulatory forbearance is unlikely to be in the LTIE as it would be unlikely to generate significant decreases in mobile termination rates to more closely align them with their underlying cost of production, and could result in rate increases;
- Whilst the provision of greater information to consumers may in select circumstances (such as closed-user groups) militate against the incentives of mobile carriers to increase the price of termination above costs, this is unlikely to be the case in most circumstances. Further, the provision of such information will do nothing to reduce the ability of access providers to maintain the price of termination above cost;
- The retail benchmarking methodology, if applied in an arbitration over the last two years, may not have been successful in generating its stated objective of ensuring a reduction of mobile termination rates towards cost. Concerns about the practical suitability of this pricing principle are re-affirmed by theoretical concerns about the incentives created by it;
- A more direct pricing principle that generates a closer association of prices and cost now appears more appropriate than it did when the question of pricing principles was first considered in 2001;
- In recognition of the cost and time-consuming nature of implementing a cost-based pricing principle *de novo*, the Commission has determined a conservative price target rate of 12 cents per minute towards which mobile termination charges should move. This rate is based on benchmarking against rates determined in overseas jurisdictions, information derived from the RAF and other corroborative sources;<sup>343</sup>
- In order to limit concerns about the potential for substantial adjustment costs, the Commission has adopted a staged adjustment approach, whereby the price of mobile termination services reduces gradually to the target;
- The level of FTM ‘pass-through’ would be improved by the introduction of a pricing principle that generated a closer association of prices and costs for the mobile termination service, as this would be expected to generate a greater level of competition in the downstream FTM services market;
- While the Commission does not favour a specific sub-cap on FTM prices, it does observe that retail price controls applying to Telstra have, since

---

<sup>343</sup> All sources of the benchmark rate reflect recognition of the need to attribute some measure of organisational-level costs to the price of the mobile termination service, but do not recognise the need to include a further increment to reflect the presence of network externalities.

2002-03, exerted a weaker constraint on Telstra's FTM pricing than under the previous regime, and this has coincided with FTM prices ceasing to decrease.

## Appendix A – Service description

### DRAFT Domestic Mobile Terminating Access Service

**The Domestic Digital Mobile Terminating Access Service** is an Access service for the carriage of voice calls from a point of interconnection, or potential point of interconnection, to a B-Party directly connected to the access provider's digital mobile network.

#### Definitions

Where words or phrases used in this declaration are defined in the *Trade Practices Act 1974* or the *Telecommunications Act 1997* or the *Telecommunications Numbering Plan 1997*, they have the meaning given in the relevant Act or instrument.

Other definitions:

**B-Party** is the end-user to whom a telephone call is made.

**Digital mobile network** is a *telecommunications network* that is used to provide *digital mobile telephony services*.

**Point of interconnection** is a location which:

- (a) is a physical point of demarcation between the access seeker's network and the access provider's digital mobile network; and
- (b) is associated with (but not necessarily co-located with) one or more gateway exchanges of the access seeker's network and the access provider's digital mobile network.

## **Appendix B – Submissions in response to the Discussion Paper**

AAPT

Adam Lucas Johns

Australian Consumers' Association

Australian Telecommunications Users Group

Charles River Associates (on behalf of Optus)

Competitive Carriers Coalition

Convergent Communications Research Group, University of Adelaide

Competitive Telecommunications Association (CompTel)

Core Research (on behalf of Hutchison)

Frontier Economics (three submissions on behalf of Vodafone)

Hutchison

MCI

Network Economics Consulting Group (on behalf of Telstra)

Optus (three submissions)

PowerTel

Queensland Department of Innovation and Information Economy

Small Enterprise Telecommunications Centre Limited

Telstra (two submissions)

Vodafone (three submissions)

vRoam Australia