Australian
Competition &
Consumer
Commission

# PRICING METHODOLOGY FOR THE GSM TERMINATION SERVICE

## FINAL REPORT

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# 1. Introduction

Following the deregulation of the telecommunications industry in 1997, the Australian Competition and Consumer Commission, in consultation with AUSTEL, deemed the Domestic GSM Originating and Terminating Services (the GSM origination and termination services) to be declared.[1] The GSM origination service is an access service for the carriage of voice or voice-grade calls from GSM mobile phone users to a point of interconnection (POI) for the purposes of providing special number services such as 1800 number services. The GSM termination service is an access service for the carriage of voice or voice-grade calls to GSM mobile phone users.

Under section 152AR of the *Trade Practices Act 1974* (the Act) standard access obligations apply to declared services. These require that access to a declared service must be provided to other carriers on request. Where the carrier providing the declared service (access provider) and the carrier seeking access (access seeker) are unable to reach agreement in relation to the terms and conditions of access, either party can seek an arbitrated outcome from the Commission.[2]

Where the Commission is notified of an access dispute in relation to the terms and conditions of access it is required to make a written determination.[3] The determination may deal with any matter relating to access and, in forming that determination, the Commission must take certain legislative criteria into account (these are outlined in Chapter 3 of this Final Report).

The Commission recognises that, while arbitration hearings for an access dispute must be held in private,[4] it will be appropriate in progressing certain issues of broad principle to seek the views of the telecommunications industry and the general public and to outline the pricing principles in relation to a specific service, or services, that it is likely to apply in an access dispute.

The Commission has been notified of seven access disputes in relation to the GSM origination and termination services, of which four have been subsequently withdrawn (see Appendix A for a list of the access disputes). In all of the access disputes, the main issue on which the parties are unable to agree is the price terms and conditions of access. Following notification of the access disputes the Commission was unsure whether the application of a Total Service Long-Run Incremental Cost (TSLRIC) pricing approach (as detailed in the Commission's *Access Pricing Principles Telecommunications – a guide*)[5] was appropriate. It was also of the view that it would be desirable to adopt a consistent approach in determining

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[1] Under section 39 of the *Telecommunications (Transitional and Consequential Amendments) Act 1997*.

[2] Section 152CM of the *Trade Practices Act 1974*.

[3] Section 152CP of the *Trade Practice Act 1974*.

[4] Section 152CZ of the *Trade Practice Act 1974*.

[5] *Access Pricing Principles, Telecommunications – a guide*, Australian Competition and Consumer Commission, July 1997.

the price terms and conditions of the services in each access dispute. Accordingly, the Commission has conducted a public process, outside the access disputes, to consider the appropriate pricing principles for the GSM origination and termination services.

As an initial step the Commission engaged consultant economists, Professor Stephen King and (the then) Associate Professor Joshua Gans, to provide advice on the appropriate methodology (or methodologies) for pricing access to the services. The Commission released a Discussion Paper based on this advice in December 1999, sought submissions in relation to the paper (see Appendix B for a list of submissions), and held a round-table in March 2000 to discuss the issues raised in the paper and by response submissions. The Commission released a Draft Report on its preliminary pricing principles in December 2000. Submissions were called for on this Report (see Appendix B for a list of submissions). Since this time it has also undertaken market inquiries, further analysis and considered the additional material provided by industry and other interested parties. The conclusions of the Commission's work are outlined in this paper.

While some of the access disputes concern both the GSM origination and termination service, the primary purpose of this paper is to outline the Commission's view on the appropriate pricing methodology for the GSM termination service, and reasons for that view. However, it is the Commission's understanding that a fixed line carrier providing 1800 or 13/1300 call services to mobile subscribers will require the GSM origination service, and without the service it will not be able to provide 1800 or 13/1300 call services to mobile subscribers. Therefore, the declared GSM origination service raises similar issues to those raised by the GSM termination service.

A description of the GSM origination service is in Appendix C, along with an outline of the Commission's views on pricing principles for this service. The Commission's view is that a similar pricing approach to the one used in the GSM termination service may be appropriate, but that this is a matter best addressed in particular arbitrations.

## 1.1 Overview of the Commission's pricing principles

The purpose of the Commission's Final Report is to outline the broad pricing principles that the Commission is likely to use if notified of a dispute on the supply of the GSM termination service for the carriage of fixed-to-mobile calls.

The Commission put forward a view in the Draft Report that there were factors leading to the supply of the GSM termination service at prices above the efficient costs of provision:

- once an end-user is connected to a mobile network, the mobile carrier has control over access to GSM termination for that end-user; and
- consumer ignorance allows the mobile carrier to increase access prices for the GSM termination service without feeling the full effect of the increase. This is because an end-user calling can do no better than basing his/ her calling decisions on estimates of the average access price for GSM termination.

The Commission continues to believe that control over access to the end-user and consumer ignorance enable mobile carriers to sustain above-cost access prices for GSM termination.

While the Commission considers that some factors somewhat mitigate control over access and consumer ignorance (such as closed user groups – mobile subscribers who are as concerned about the price of receiving calls as making a call) it does not believe these overcome the ability and incentive of mobile carriers to sustain above-cost access prices at this time. However, the Commission recognises that it may be possible in the future for developments in the market to further diminish control over access and consumer ignorance.

It is noted that sustained above-cost access prices for GSM termination are more likely to be a problem when the service is supplied in relation to fixed-to-mobile calls rather than mobile-to-mobile calls. This is because, in the case of mobile-to-mobile calls where uniform traffic patterns exist, reciprocal access prices between mobile carriers are equally a revenue stream and a cost. Therefore, unless traffic patterns are unbalanced or mobile carriers engage in price discrimination, no competitive advantage exists in sustaining above-cost GSM termination for mobile-to-mobile termination – except to the extent that by keeping them at the same level as when the service is supplied in relation to fixed-to-mobile calls, mobile carriers will circumvent any possibility of other carriers transiting calls via alternative (lower cost) termination paths. Accordingly, it is the Commission’s view that it is sufficient for any regulatory focus to be on access prices for GSM termination when the service is supplied in relation to fixed-to-mobile calls.

GSM termination is only one element of the mobile services market the Commission has examined. The provision of mobile calls essentially involves the interaction of four ‘joint products’:

- GSM origination services (which differ from the declared GSM origination services in that they allow 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);
- GSM termination services for which the mobile carrier charges other fixed network and mobile network carriers;
- mobile access (subscription) services including connection, handset and monthly access for which the mobile carrier charges the mobile subscriber; and
- outgoing call services, which use GSM origination services and possibly GSM termination services or PSTN termination services, and for which the mobile carrier charges the mobile subscriber.

The revenue streams from GSM termination, mobile access services and outgoing call services are interdependent, such that with effective competition a change in one revenue stream will, in the long term, be associated with an offsetting change in another stream.

The Commission has concluded that the mobile services market is becoming increasingly competitive, particularly at the retail level. In this respect it notes the presence of five mobile carriers (although one of the smaller carriers has been placed into administration), decreased retail prices for mobile access services and outgoing call services, and increased product offerings all indicate an increasingly competitive environment. This said, the Commission has remaining concerns about the effect of the pricing of GSM termination on competition and efficiency in the mobile services and fixed-to-mobile markets.

The Commission continues to consider that the most appropriate pricing methodology, having regard to the legislative criteria, is a form of the proposed retail benchmarking approach. Under this approach, changes in each mobile carrier's access prices will be benchmarked against the retail price movements for the overall mobile package (access and outgoing calls). The initial 'starting point' for the 'glide path', created by this pricing rule, will be the lowest current access price, as proposed in the Draft Report. The Commission understands that this price is about 24.5 cents per minute.

The advantage of pegging changes in access prices to changes in the average retail price for the overall mobile package is that the provision of GSM termination mirrors the increasingly competitive retail element of the mobile services market. The Commission considers that this is desirable because it is likely to improve allocative efficiency in the mobile services and fixed-to-mobile markets, and will reduce the potential for integrated carriers to engage in anti-competitive behaviour in the fixed-to-mobile market. In effect, a relevant competitive discipline is being placed on GSM termination, to overcome the relatively weak competitive forces which currently exist.

In conjunction with such a pricing approach the Commission also proposes to implement a monitoring program that will be used to ascertain:

- whether an increasingly competitive mobile services market is driving retail prices (and therefore access prices for GSM termination and retail prices for fixed-to-mobile calls) down;
- whether there are increasing competitive forces on GSM termination (e.g. increased evidence of closed user groups and increased use of call back); and
- whether integrated mobile carriers (who are likely to face lower internal access prices for GSM termination) engage in anti-competitive pricing of fixed-to-mobile calls. The Commission may also rely on its powers under Part XIB if this conduct is observed.

The Commission intends to closely monitor increases in competition for the supply of GSM termination and the extent of any structural change (proposals for which are outlined in Appendix D) that promotes consumer awareness. This will inform the Commission's considerations of the benefits of the application of pricing regulation on GSM termination services in the future.

The Commission intends to review the proposed pricing approach in 2 years time.

The Final Report is structured as follows:

**Chapter two** identifies the declared service which is the focus of this Final Report and outlines how it is used to provide end-to-end calls to GSM mobile phones;

**Chapter three** outlines the legislative background which the Commission must take into account when making a final determination in an access dispute;

**Chapter four** discusses the Commission's views regarding mobile carriers control over access to GSM termination;

**Chapter five** provides the Commission's assessment of competition in the mobile services market and fixed-to-mobile market;

**Chapter six** outlines the possible pricing methodologies that could be used to determine access prices for GSM termination; and

**Chapter seven** provides the approach and reasoning adopted by the Commission in forming its view on the appropriate pricing methodology for the GSM termination access service.

# 2. The domestic GSM termination service

The GSM termination service is a wholesale service used by carriers and service providers to supply particular call products to end-users. As noted in Chapter 1 of this Final Report, it was deemed to be declared under section 39 of the *Telecommunications (Transitional and Consequential Amendments) Act 1997*. In the statement deeming the service to be declared, it was described as:

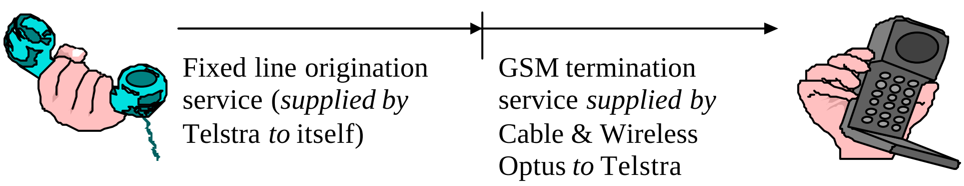
> Domestic GSM Terminating Access is an Access Service for the carriage of telephone calls (i.e. voice, data over the voice band) from a POI to B-parties assigned numbers from the GSM number ranges of the Australian Numbering Plan and directly connected to the Access Providers network.[6]

The statement also notes that the GSM termination service is broader than the GSM origination service and would be the main requirement for achieving any-to-any connectivity.[7]

The GSM termination service is used to terminate calls to mobile subscribers. Essentially it enables mobile subscribers to receive calls from end-users connected to other networks (a fixed line network, another mobile network, or the same mobile network). The service can be used to supply fixed-to-mobile calls, or mobile-to-mobile calls. It is supplied by mobile carriers to themselves and to other carriers. For example, in the case of a fixed-to-mobile call if an end-user connected to Telstra's fixed line network wants to call a mobile subscriber connected to the Cable & Wireless Optus GSM network, Telstra would need to purchase the GSM termination service from Cable & Wireless Optus in order for the fixed line end-user to be able to make the call. This is shown in Diagram 1.

**Diagram 1 – The GSM termination service**

***Call from fixed-line end user to mobile phone end-user***



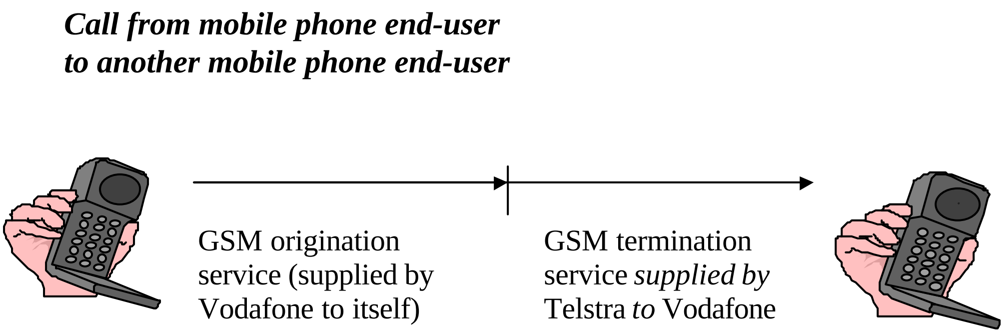

**Use of the GSM termination service to supply a fixed-to-mobile call**

[6] *Deeming of Telecommunication Services*, Australian Competition and Consumer Commission, June 1997, p. 42.

[7] *ibid.*, p. 19.

In the case of a mobile-to-mobile call, if a mobile subscriber connected to Vodafone's GSM network wants to call a mobile subscriber connected to Telstra's GSM network, Vodafone would need to purchase the GSM termination service from Telstra in order for the mobile subscriber connected to its network to make the call. This is shown in Diagram 2.

**Diagram 2 – The GSM termination service**




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

### *Pre-selection of fixed-to-mobile calls*

The Australian Communications Authority modified its 'pre-selection' determination in 1999 to include fixed-to-mobile calls in the pre-selection basket of national long distance and international calls. Following from this, an end-user jointly pre-selects a carrier for national long distance, international and fixed-to-mobile calls. For this reason pre-selected carriers now also purchase the GSM termination service from mobile carriers (in order to supply fixed-to-mobile calls). For example, if AAPT is a pre-selected carrier for an end-user who makes a call to a mobile subscriber connected to Telstra's GSM network then AAPT would need to purchase the GSM termination service from Telstra in order for its pre-selected end-user to be able to make the call. AAPT may also need to purchase the fixed line origination service from the carrier whose network the pre-selected end-user is connected to.

# 3. Legislative background

The object of Part XIC of the Act is to promote the long-term interests of end-users (the LTIE) of carriage services or of services provided by means of carriage services.[8] This will be achieved, in part, through establishing the rights of third parties to gain access to services that are necessary for the competitive supply of services to end-users.

An important part of the access regime is the terms and conditions of access, including the price or a method for ascertaining the price. Under Part XIC of the Act the Commission cannot approve a draft Telecommunications Access Forum (TAF) access code or accept an undertaking unless satisfied that the terms and conditions specified are reasonable.[9] In determining whether terms and conditions are reasonable, regard must be had to the following matters:

- whether the terms and conditions promote the LTIE;
- the legitimate business interests of the carrier or carriage service provider concerned, and the carrier's or carriage service 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.[10]

This does not, by implication, limit the matters to which regard may be had.[11]

When arbitrating access disputes the Commission must have regard to the same matters. In addition, in making a determination the Commission must take into account the value to a party of extensions, or enhancement of capability, whose cost is borne by someone else.[12]

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[8] Sub-section 152AB(1) of the Act.

[9] The Commission must also ensure that the terms and conditions in the TAF access code, in undertakings and any arbitration determination is consistent with any Ministerial pricing determination in place. See section 152CH of the Act.

[10] Sub-section 152AH(1) of the Act.

[11] Sub-section 152AH(2) of the Act.

[12] Paragraph 152CR(1)(e) of the Act.

The Commission discusses each of the criteria in Chapter 7, in deciding the appropriate pricing principle for the GSM termination service.

# 4. GSM termination

This Chapter of the Final Report focuses on the nature of the GSM termination service. In particular, this Chapter examines the issues of control over access to GSM termination and consumer ignorance raised by the Commission's economic consultants and by some service providers in their submissions to the Discussion Paper and to the Draft Report. In addition, it examines the provision of the GSM termination service when supplied in relation to fixed-to-mobile and mobile-to-mobile calls and the different incentives for mobile carriers when negotiating access prices in both of these cases.

## 4.1 Control over access and consumer ignorance

As noted in the Draft Report, the Commission's economic consultants raised several features of the GSM termination service that were said to confer market power on mobile carriers. In identifying these features, several assumptions were made about the structure of the market and mobile penetration. The Commission does not intend to comment on these assumptions, but rather will outline what it views as the fundamental elements of the analysis. These key features can be summarised as:

- the calling end-user pays for the call, although the mobile subscriber receiving the call chooses which mobile carrier will terminate the call. If the calling end-user wants to contact a mobile subscriber then he/she has no alternative but to purchase GSM termination from the mobile carrier which that mobile subscriber has chosen. There is no possibility of substitution and this means that the mobile carrier has control over access to GSM termination; and

- there is consumer ignorance by the calling end-user of the mobile carrier being called and the specific access prices for GSM termination charged by that mobile carrier.[13] As a result of this ignorance, the end-user, who possibly only knows the market shares of the mobile carriers, can only estimate the average access price for GSM termination across all mobile carriers.[14]

Therefore once a mobile subscriber is connected to a mobile network, the mobile carrier has control over access to that subscriber. Consumer ignorance means that the mobile carrier can increase the access price for GSM termination without feeling the full effect of the increase. This is because an end-user calling can do no better than basing his/ her calling decisions on estimates of the average access price for GSM termination.

[13] The Commission's economic consultants also noted that this effect is exacerbated in the context of number portability. Where previously the mobile carrier's prefix was unique to that carrier and end-users could 'learn' which prefixes were associated with particular mobile carriers, under mobile number portability the prefix will no longer guarantee that an end-user is calling a particular carrier. The Australian Communications Authority has determined that mobile number portability will be introduced in Australia on 25 September 2001.

[14] Issues associated with consumer ignorance are explored further in section 4.2 and Appendix D.

A 1998 report by the United Kingdom Monopolies and Mergers Commission on the charges made by BT Cellnet and Vodafone for terminating fixed-to-mobile calls noted that the Director General of Telecommunications took a similar view in relation to control over access to GSM termination.[15] Additionally, a report by Ovum on *Regulating Mobile Operators* also concluded that control over access and consumer ignorance leads to a market failure.[16] Importantly, Ovum notes that the lack of available substitutes for GSM termination is a crucial factor in establishing control over access.

The Commission's view is that the control over access problem is essentially related to the structure of pricing in the mobile market. The pricing structure provides one of the parties (in this case, the receiving party) with a benefit (from receiving the call) which it does not pay for.[17] The effect of this is that price competition in the mobile market is focused on call origination and subscription prices. There is hence no competitive advantage to be gained from lowering termination prices, unless called consumers care about the cost incurred by others in making calls to them. If, for example, mobile consumers were charged for the termination end of calls they received (meaning that the caller would pay for fixed or mobile origination), then carriers would likely compete on GSM termination prices because lower prices would directly impact on consumer's purchasing decisions. Similarly, if consumers were able to contract separately for origination and termination services (with different networks), then mobile carriers would not be able to offset lower origination and subscription prices with higher access prices for GSM termination. Both of these 'solutions' would mitigate the control over access problem; however, both would require substantial changes to market operation, and may not even be feasible at a technological level.

The Commission notes that to the extent that consumer ignorance exists, and is likely to be an ongoing concern, several different possibilities have been proposed, by the Commission's consultants and in submissions, as ways to mitigate its effect. These encompass providing end-users with information about mobile carriers being called and the retail price / access prices for GSM termination associated with a call. However, it appears that the Commission's powers are not well suited to requiring that such information be provided on an industry wide basis. This said, the Commission is supportive of industry discussions for amelioration of the consumer ignorance problem and consider it important that this issue is progressed to facilitate a withdrawal from pricing regulation. The Commission's view in relation to addressing the consumer ignorance problem at 'its source' is detailed in Appendix D.

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[15] *Cellnet and Vodafone – Report on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks,* Monopolies and Mergers Commission, December 1998, p. 15-16. While the MMC itself did not explicitly attempt to isolate factors leading to high prices for mobile termination in the UK, it clearly found a lack of competitive pressure on access prices for mobile termination.

[16] *Regulating Mobile Operators – The Road to Effective Competition*, Ovum, Volume 3: GSM termination Rates, 2000, p. 29, 37-38.

[17] It is noted that this is a common characteristic of telecommunications markets generally. See, for example, the Commission's report *Pricing guidelines for access prices of PSTN terminating and originating access services provided by non-dominant or smaller fixed networks*, March 2001.

Consistent with its view in the Draft Report, the Commission considers that there is evidence to support the view that these features have allowed the larger mobile carriers to price GSM termination above the long-run costs of providing that service.[18]

The Commission has considered a range of information sources on the costs of GSM termination, including:

- modelling by an Australian carrier which provides an indicative estimate of long-run incremental cost for GSM origination and termination services;
- modelling undertaken by the Monopolies & Mergers Commission (now the Competition Commission) for the 1998 review of access prices for mobile termination in the UK[19];
- long-run incremental cost modelling undertaken by Oftel for the same review[20]; and
- a summary of modelling by a US mobile carrier presented to the Florida Public Service Commission on the costs of mobile termination on its CDMA network.

While the probative value of this information differs, the evidence supports the view that the access price for GSM termination charged by the larger mobile carriers[21] exceeds efficient long-run costs. That is, the gap that appears to exist between access prices and long-run incremental costs (plus network common costs) seems significantly larger than could be explained by accounting for 'subscription externalities.'[22]

## 4.2 Factors which may mitigate control over access and consumer ignorance

The Draft Report noted a number of factors which were argued by carriers to mitigate the impact of control over access and consumer ignorance. Submissions to the Draft Report argued that empirically neither of these problems substantially reduced competition or gave carriers market power in the mobile market:

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[18] This notion of above-cost prices refers to cost in a broad sense – this notion of cost therefore includes long-run incremental costs plus all common costs associated with provision of GSM originating and terminating services.

[19] See *Cellnet and Vodafone – Report on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks,* Monopolies and Mergers Commission, December 1998.

[20] This modelling is available on request to Oftel.

[21] The Commission refers to 'larger' carriers here as the estimates considered by the Commission apply to a carrier that has achieved a level of scale economies. It is likely that smaller carriers, who have not captured these economies, have efficient costs that are higher than for the larger carriers.

[22] It has been argued that these subscription externalities could justify access prices efficiently exceeding costs, as this might 'internalise' the benefits fixed and mobile network users obtain (for which they do not otherwise pay) from additional subscriber connections to a mobile network.

> …there are a myriad of economic substitutes or alternative paths to customers with mobile phones.[23]

> …the available empirical evidence does not support the conclusion that consumers are ignorant of termination rates in a manner that causes market failure…it is only necessary for a small percentage of customers to be informed to create a sufficient economic substitution so that prices decrease for all consumers to competitive levels. [24]

> While some degree of end-user ignorance may exit, Vodafone considers that this ignorance does not have any material impact on the setting of termination rates.[25]

This Chapter considers these factors in light of submissions and comments to what extent the Commission considers these factors may impact on the pricing of GSM termination.

### 4.2.1 Transit arrangements

A supplementary submission to the Commission's Discussion Paper from Cable & Wireless Optus argued that mobile carriers do not have market power deriving from control over access because of transit arrangements.[26] In its view, such arrangements allow for the existence of more than one path to GSM termination and therefore mobile carriers do not have control over the termination of a call. Similarly, Vodafone submitted that the Commission's consultant did not consider the scope for transit services[27], and that it is the potential for transit networks to create competitive pressure that is important – not whether they are actually used for this purpose.[28]

An example of how a transit arrangement may work is as follows. If a fixed line carrier has to terminate a call to Mobile Carrier A's network but has a relatively high access price for GSM termination with Mobile Carrier A, then it could transit the call through Mobile Carrier B's network. This would occur if Mobile Carrier B had a significantly lower access price for GSM termination with Mobile Carrier A. In such a case there are two sources of supply to Mobile Carrier A's network, and Mobile Carrier A will be constrained to charge the fixed line carrier an access price for GSM termination similar to that negotiated with Mobile Carrier B.[29] To the extent that significantly lower access prices for GSM termination are negotiated, there is a possibility that transit arrangements exist, which may affect the extent of a mobile carrier's control over access to GSM termination.

[23] Cable & Wireless Optus submission to the Draft Report, p. 17.

[24] Cable & Wireless Optus submission to the Draft Report, p. 9.

[25] Vodafone submission to the Draft Report, p. 12.

[26] Cable & Wireless Optus supplementary submission to the Discussion Paper, p. 5.

[27] Vodafone submission to the Discussion Paper, p. 10.

[28] Vodafone submission to the Draft Report, p. 11.

[29] The Commission notes, however, that there may be an incentive for mobile carriers to negotiate reciprocal access prices which are higher in order to maintain parity, or near parity, with access prices for GSM termination when the service is used to supply fixed-to-mobile calls. This is discussed below.

The transit effect has been well established in the international telecommunications pricing context. For example the Productivity Commission's report *International Telecommunications Market Regulation* noted that a major effect of transit is to place pressure on terminating providers to lower settlement rates.[30]

However, the Commission remains of the view that the conditions that lead to transit arrangements mitigating control over access to international termination services do not exist domestically in the mobile services market. Historically, access price negotiations for international termination services were typically between government owned telecommunications providers. This setting was considerably more conducive to variable price outcomes than the domestic mobile services market. The Commission's views in relation to this matter are supported by observations of current access prices for GSM termination, and in examining the incentives facing mobile carriers when negotiating access prices for GSM termination.

Market inquiries lead the Commission to understand that any transit arrangements which are currently in place exist because of the relative cost of installing switches and switchports as against direct GSM termination. That is, fixed line carriers may overcome the cost of setting up switches to directly terminate a relatively low number of calls by utilising existing switches with other carriers. The Commission also understands that the price of transiting calls is the same, or more, than the access price for GSM termination. This supports the view that the effect of transit is to reduce differences in access prices between different carriers, and not to drive access prices to competitive levels. Therefore the Commission continues to believe that transit arrangements do not mitigate control over access to GSM termination.

### 4.2.2 Countervailing power of fixed line carriers seeking GSM termination

The Draft Report raised the issue of countervailing power in the context of the GSM termination service. Carriers had argued that even though a mobile carrier may have control over access to GSM termination, its ability to raise access prices is tempered by the fact that GSM termination is not negotiated in isolation and that mobile carriers are usually buyers of services from other carriers. This is said to create a commercial dynamic, which is more likely to produce commercially acceptable and reasonably efficient outcomes.

Several carriers continued to support this proposition in their submissions to the Draft Report.[31] However, none of these carriers were able to provide convincing evidence of an instance where their pricing of GSM termination had been substantially constrained by the countervailing power of another carrier. Market evidence on the spread of access prices for GSM termination also does not support this view.

[30] *International Telecommunications Market Regulation*, Productivity Commission, Report Number 7, 23 August 1999, p. 51. The report notes that Cable & Wireless Optus asserted that, as a result of refile, between 1997 and 1999, prices for terminating calls from Australia to China and Pakistan fell by 50 per cent and to India by 10 per cent.

[31] One.Tel submission to the Draft Report, p. 17, Vodafone submission to the Draft Report, p. 12.

Vodafone's submission notes that the Commission discounted countervailing power in the Draft Report, and countered that "it is in every carrier's interest to use the range of countervailing powers at their disposal to extract the best commercial price from the negotiation."[32] The Commission, as discussed in sections 4.3 and 4.4 below, considers that the incentives for all mobile carriers (including integrated fixed and mobile carriers) favour high termination prices. Where a carrier with a mobile network negotiates GSM termination prices with a fixed network carrier (which has regulated termination prices) seeking to supply fixed-to-mobile calls, there is limited countervailing power possessed by the fixed network carrier. Even where an integrated carrier with a large fixed-to-mobile market share negotiates with a mobile-only carrier (to terminate fixed-to-mobile and mobile-to-mobile calls), its incentives to negotiate a (reciprocal) low access prices are mitigated by the mobile-only carrier's ability to transit calls from other fixed networks ultimately intended for the integrated carrier's mobile network.

### 4.2.3 Closed user groups, call back and increasing consumer awareness

Submissions received by the Commission questioned the extent of consumer ignorance that exists, and whether it allows mobile carriers to sustain above-cost access prices for GSM termination. In particular, Cable & Wireless Optus and Vodafone re-iterated their views that not all end-users are ignorant of retail prices for fixed-to-mobile calls, and that any ignorance is unlikely to be sustained because of the high number of repeat calls made by many end-users.[33]

Specifically the Commission's attention was drawn to 'closed' user groups, which are generally families or small businesses, where the mobile subscribers are as concerned about the price of receiving a call as the price of making a mobile call. Such user groups may mitigate control over access and consumer ignorance. It was noted that not all mobile subscribers need to be concerned about the price of receiving a call (just a sufficient percentage) for there to be a competitive outcome.[34] That is, imperfect or incomplete information among some end-users is not a barrier to competitive discipline being exercised by consumer choice.

There is increasing evidence of 'closed' user groups and pricing plans designed by mobile carriers to target such groups. The Cable & Wireless Optus submission commented on a number of new initiatives since the Commission released its Draft Report, including a capped fixed-to-mobile call rate from Telstra fixed lines to Telstra mobiles (a 'closed' group).[35] Telstra has recently offered end-users significant reductions for fixed-to-mobile, mobile-to-mobile and mobile-to-fixed call prices in relation to nominated fixed line and mobile

[32] Vodafone submission to the Draft Report, p. 12.

[33] Cable & Wireless Optus submission to the Draft Report, p. 11, Vodafone submission to the Draft Report, p. 12.

[34] Cable & Wireless Optus submission to the Discussion Paper – associated paper by Professor J. Hausman, p. 8-9.

[35] Cable & Wireless Optus submission to the Draft Report, p. 12.

services. Further, Vodafone offers a virtual private network service which enables corporate customers to route fixed-to-mobile calls over the Vodafone network at discounted rates. These examples appear to indicate an increasing level of awareness about the prices of calls to mobile subscribers and the presence of 'closed' user groups.

While the Commission notes these examples, it is also apparent that closed-user groups are not necessarily a panacea to the problem of control over access. While these groups are able to put pressure on access prices for GSM termination, mobile carriers can effectively segment these particular users by charging lower prices for 'on-net' calls (calls that remain on the mobile carrier's network). Prices for other consumers (i.e. those who commonly call 'off-net') would be unaffected if carriers pursued such a strategy.

The Commission also notes that control over access may be mitigated if a calling end-user requests a mobile subscriber to call them back (if average fixed-to-mobile call prices are too high). This, however, supposes that the calling end-user is not ignorant (either because he/she is a part of a closed user group, or because of a large number of repeat calls). Furthermore, most market enquiries by the Commission would seem to suggest that fixed-to-mobile calls may be relatively inelastic; that is, demand will not change greatly because of price movements. In this regard, the extent to which call back constrains mobile carriers from sustaining above-cost access prices for GSM termination may not be as great as otherwise.

Oftel, the UK telecommunications regulator, has undertaken research into the awareness of consumers when calling mobile phones.[36] The Cable & Wireless Optus submission to the Draft Report argued that this research demonstrates that consumers are very aware of the cost of calling mobile phones, and that even a small number of users not making a call would make increases in access prices for GSM termination unprofitable.[37] The Commission does not find Oftel's survey evidence (at least in regard to residential users) as compelling in this regard. For example, Oftel found that:

- almost 1 in 5 mobile customers said their mobile selection took into consideration what mobile networks they would be calling; but that
- 85 per cent of mobile customers did not find out how much it would cost people to call them;
- 8 per cent of mobile customers said the cost to others calling them was a significant factor in their choice of network; and
- 7 per cent of mobile customers said they knew roughly how much it cost to call a mobile number from their fixed line phone.

[36] *Effective Competition Review: Mobile*, Oftel, February 2001, available at www.oftel.gov.uk.

[37] Cable & Wireless Optus submission to the Draft Report, p. 11.

The Commission notes that it is not sufficient for consumers to be merely informed about the cost of calling a fixed-to-mobile phone (as only 7 per cent would appear to be).[38] Consumers would need to also be aware of (a) which network had been called; and (b) differences between mobile carrier's access prices for GSM termination to make conscious decisions as to higher or lower levels of use in relation to calling specific mobile carriers. This is hindered by the current fixed-to-mobile pricing structure, which in general makes little distinction between the mobile carriers being called. Oftel in fact concludes from its evidence that "consumers must be able to take advantage of competition in order for it to be effective, but Oftel is not convinced that mobile consumers are well informed."[39]

#### 4.2.4 Conclusion

The Commission notes that several issues have been raised which could potentially serve to mitigate control over access and consumer ignorance. However, it is the Commission's view that the competitive forces on GSM termination are relatively weak at this point in time.

## 4.3 Control over access to GSM termination in relation to fixed-to-mobile calls

The Commission's consultants noted that the smaller the mobile carrier (in terms of market share), the less likely it is to internalise the demand-reducing effects of an increase in its access price for GSM termination. That is, the less concentrated the market for mobile services, the higher the retail prices of fixed-to-mobile calls. This results from a greater number of smaller mobile carriers having the same incentive to increase their access prices, due to the minimal impact on the one (average) retail price of a fixed-to-mobile call.

In its submission to the Commission's Discussion Paper, Telstra argued that there is little incentive for a mobile carrier to increase the access price for GSM termination, as an increase will be matched very quickly by rival mobile carriers.[40] It also noted that mobile carriers will not necessarily benefit from higher access prices for GSM termination as the carriers will compete more aggressively for the higher termination revenues by lowering mobile access (subscription) fees.

The Commission accepts there are incentives for the mobile carriers to not continually increase the access price for GSM termination if they know other mobile carriers will retaliate in order to retain market share. Also, there will be a point at which an increase in the access price for GSM termination will not result in an increase in the revenue stream. This occurs because as access prices for GSM termination increase, resulting in an increase in the

[38] The Commission is not convinced by arguments raised by Cable & Wireless Optus and Vodafone that conditions are such that a small number of 'marginal' customers will not purchase if there is an increase in access prices for GSM termination, and hence render that increase unprofitable. The inelastic nature of fixed-to-mobile demand suggests that an increase in the fixed-to-mobile price caused by higher access prices is not likely to reduce demand by a sufficient amount for the increase to be unprofitable.

[39] *Effective Competition Review: Mobile*, Oftel, February 2001, at 2.86.

[40] Telstra submission – Response to Professor Gans's Discussion Paper, p. 3.

retail prices for fixed-to-mobile calls, end-users calling mobile networks may begin to question the prices they are paying and at a certain point may reduce their demand for calls.

The Commission's market inquiries indicate that access prices for GSM termination, when used to provide fixed-to-mobile (and mobile-to-mobile calls) are trending down. This also does not support the conclusion that access prices for GSM termination will trend upwards as the market becomes less concentrated. However, the downward trend in access prices for GSM termination could be due to a number of factors, such as changes in the costs of providing GSM termination or the threat of the Commission applying strict price controls.

That said, the Commission notes that control over access and, to some degree, consumer ignorance allows mobile carriers to sustain above-cost access prices for GSM termination. This occurs from the incentive to increase prices when the service is used to supply fixed-to-mobile calls, as access prices for GSM termination are an important revenue source. Furthermore, sustaining above-cost access prices for GSM termination may also allow mobile carriers to cross-subsidise mobile access service fees and increase demand for mobile subscription.

As briefly described earlier, the incentives that integrated mobile carriers face, when supplying GSM termination to each other in relation to fixed-to-mobile calls, are important. In isolation, it would seem that the incentive to negotiate a 'low' or 'high' access price will be dependent on the traffic patterns that exist between the mobile carriers. For example, assume there are two integrated mobile carriers and that Carrier A originates a lot more fixed-to-mobile calls than Carrier B. This implies that Carrier B will terminate a lot of fixed-to-mobile calls (relative to those it terminates on Carrier A's network) and therefore will have an incentive to negotiate 'high' access prices as it represents a net benefit in terms of termination revenue (higher revenue, relative to cost). Carrier A would seem to have an incentive to negotiate 'low' access prices as they represent an increased cost to the carrier, relative to the revenue received. The incentives, though, are more complicated than they appear.

Where Carrier A terminates more calls on Carrier B's network than on its own network in providing fixed-to-mobile calls, there are two reasons why it may prefer to keep access prices high.

Firstly, it will not want to negotiate a reciprocal access price too 'low' as this would provide other fixed line carriers with an incentive to negotiate alternative paths to fixed-to-mobile termination (via Carrier B).

Secondly, maintaining a high termination price inflates the retail fixed-to-mobile price for other carriers (as other carriers use Carrier A's GSM termination service as an input) while not inflating Carrier A's own costs. This provides the Carrier A with an opportunity to reduce the price of 'on-net' fixed-to-mobile calls (calls which stay entirely on the integrated carriers' networks), and increase its competitiveness relative to fixed-only carriers providing fixed-to-mobile calls.[41]

## 4.4 Control over access to GSM termination in relation to mobile-to-mobile calls

The Commission's consultants concluded that in the case of mobile-to-mobile calls unregulated access prices for GSM termination, when set independently (i.e. without any interaction of mobile carriers) may be set too high and that when negotiated may be set too low.

Assuming consumer ignorance, the Commission's consultants concluded that mobile carriers will be indifferent between the precise levels of reciprocal access prices for GSM termination, as their profits are the same regardless. This is because if each mobile carrier was to negotiate a slightly higher access price (increasing their revenue streams) it also increases the marginal cost (decreasing revenue) for other mobile carriers and ultimately itself. Therefore, assuming no price discrimination, there is no advantage to the mobile carriers in negotiating higher access prices for GSM termination. In this respect the Commission's consultants submitted that mobile carriers would not be deterred from negotiating access prices for GSM termination equal to marginal costs, and unregulated outcomes (provided negotiations are efficient) will result in efficient pricing.

The Commission notes that PowerTel supported the conclusion that mobile carriers will be indifferent to the level of access prices for GSM termination in relation to mobile-to-mobile calls (as mobile carriers will generally expect that a mobile subscriber will make as many calls as it receives).[42]

However, it is the Commission's view that where mobile carriers have uniform (or similar) traffic patterns, there may be an incentive to negotiate reciprocal access prices for GSM termination in the supply of mobile-to-mobile calls, that are as high as those negotiated when the service is used to supply fixed-to-mobile calls. By keeping the access prices for the supply of mobile-to-mobile calls at similar levels to access prices when used to supply fixed-to-mobile calls, mobile carriers will circumvent any possibility of other carriers transiting calls via alternative (lower cost) termination paths. In this respect, market inquiries indicate that the access prices for GSM termination are largely the same for both fixed-to-mobile and mobile-to-mobile calls.

The Commission also notes that mobile carriers may favour high GSM termination prices for mobile-to-mobile calls in order to price discriminate between 'on-net' and 'off-net' calls – by

[41] This type of response is analysed at a theoretical level by J.J. Laffont, P. Rey and J. Tirole, "Network Competition II: Price Discrimination", *The RAND Journal of Economics*, Spring 1998, Vol. 29, No. 1, pp. 38-56, and was also raised by the Commission's economic consultants.

[42] PowerTel submission to the Discussion Paper, p. 4.

raising other carriers costs to terminate calls the mobile carrier can increase the attractiveness of on-net calls.

This said, it does not appear necessary to regulate access prices when used to supply mobile-to-mobile calls at this time. This is primarily because commercial negotiations appear to result in prices linked to GSM termination when used for fixed-to-mobile calls.

## 4.5 The impact of control over access and consumer ignorance

It remains the Commission's view that control over access to GSM termination, and to an extent consumer ignorance, results in mobile carriers sustaining above-cost access prices for GSM termination. The Commission considers that the competitive forces on GSM termination will remain relatively weak at least in the near future. That said, the Commission recognises that 'closed' user groups and the possibility of fixed-line callers requesting mobile subscribers to call them back may increasingly place a competitive focus on access prices for GSM termination.

It has been argued to the Commission that above-cost pricing of GSM termination does not necessarily imply a market power problem which requires regulatory intervention to correct. This is because the ability to set above-cost termination prices could be offset by effective competition in the retail side of the mobile market.

In submissions to the Draft Report, carriers argued that the effect of any above-cost pricing is minimal if the market for mobile services as a whole is effectively competitive:

> ..we consider that the very fact that there is effective competition at the retail level translates to an effective competitive discipline on all revenue streams of mobile operators (including revenue gained through GSM termination.)[43]
>
> To be overly concerned that the price of *one component* of one product of a multi-product firm generates above-normal returns makes no economic sense. The relevant issue is whether the firm *as a whole* is earning above-normal returns.[44]

The Commission notes that if the overall market for mobile services was effectively competitive (such that no excess profits were being earned), then any above-cost access prices for GSM termination would be offset by below-cost retail prices (for mobile-to-mobile calls, subscription, etc.). In principle, the Commission would then need to consider whether regulated reductions in access prices (and therefore fixed-to-mobile prices) would be welfare-improving. That is, it would need to consider the efficiency gains from lower access (and hence retail) prices against any efficiency losses from higher prices in other elements of the mobile market (such as mobile subscription).

If the retail level of the market for mobile services was not effectively competitive, then above-cost access prices for GSM termination will not necessarily be offset by below-cost

[43] Vodafone submission to the Draft Report, p. 11.

[44] NERA (on behalf of One.Tel) submission to the Draft Report, p. 6.

retail prices. In such circumstances, a lack of effective retail competition, combined with control-over-access and consumer ignorance, may allow mobile carriers to sustain overall excess profits.[45] The Commission notes, however, that if retail competition is becoming increasingly effective, then it is to be expected that overall excess profits will decline or be eliminated in the near future. The Commission considers the evidence as to the competitiveness of the mobile market in the following Chapter.

This said, the Commission will also need to consider whether integrated mobile carriers, who notionally face lower internal access prices than fixed line carriers seeking access to GSM termination, use this advantage to undertake anti-competitive pricing in the fixed-to-mobile market. This potential for anti-competitive pricing in downstream markets may occur even in the existence of a competitive overall mobile market.

[45] This approach is consistent with the view of Oftel expressed in its current review of access prices for mobile termination: "If Oftel were to conclude that mobile markets other than call termination were some way from being effectively competitive, then it would be unlikely to regard the previous argument (that above-cost termination prices will be offset by competitively-determined retail prices) as providing a sound justification for not taking regulatory action." See *Review of Price Controls on Calls to Mobiles,* Oftel, February 2001, pp. 21-22.

# 5. Competition in relevant markets

In this Chapter of the Final Report the Commission considers the market in which the GSM termination service is supplied, and the level of competition in that market. As noted in Chapter 4 above, the extent of competition will be important in informing the Commission's decision about appropriate pricing principles. This Chapter examines the appropriate market definition taking into account the four joint products involved in the provision of mobile services and then considers the extent of competition in this market, at both the wholesale and retail levels.

Further, this Chapter considers the supply of GSM termination in the related downstream market in which fixed-to-mobile calls are provided. As noted in Chapter 4, access prices for GSM termination will impact on the retail prices for fixed-to-mobile services. An assessment of the market in which fixed-to-mobile calls are supplied will allow the Commission to assess the extent to which access prices for GSM termination promote competition in the related downstream market.

## 5.1 Mobile services market

### 5.1.1 Market definition

The process of market definition begins with identifying the service(s) or product(s) under consideration and the firm(s) supplying that service. Once the relevant service and sources of supply have been identified, they are described in terms of their functional, geographic and temporal dimensions. 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, and which would effectively constrain the price of that service. This is consistent with section 4E of the Act which 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. A discussion of these elements can be found in the Commission's *Merger Guidelines* and is canvassed in the information paper *Anti-competitive Conduct in Telecommunications Markets* (August 1999).

It should be noted that the Commission's approach to market definition in relation to declaring services, or other activities carried out under Part XIC of the Act, does not require the determination of a definitive market definition as is the case in a Part IV or Part XIB case.

In submissions to the Discussion Paper and the Draft Report, several service providers raised the issue of the market in which GSM termination is supplied. Some carriers, such as AAPT and WorldxChange, considered that a narrow view of the market should be taken.

AAPT accepted that retail aspects of the market influence outcomes at the wholesale level, but considered the focus should be on market factors at the wholesale level.[46] That is, the

[46] AAPT supplementary submission to the Discussion Paper p. 1-2.

market should be defined as the supply of the GSM origination or termination services to carriers and service providers. Further, AAPT submitted that by considering the wholesale and retail elements in the same market the Commission risks understating the important distinctions between the wholesale market for access services and other mobile markets relevant to the competition questions raised.

Similarly, WorldxChange submitted that the relevant market for measuring the appropriate price for GSM termination is the wholesale market for GSM access services. WorldxChange argued because of the difficulty and expense in establishing a mobile network, and because there are no substitutes for mobile services, there is clearly a wholesale market that is separate from the retail market.[47]

Other carriers, however, considered that a broader view of the market should be taken. A number of carriers considered that the retail and wholesale dimensions of the market, although clearly separate functional elements, should be included in the relevant market definition. For example, in its submission to the Draft Report Vodafone reasoned that the suggestion of a separate market for GSM termination is infeasible.[48] It argued that consumers do not want to purchase incoming calls as a separate service from outgoing calls; rather they prefer a bundled package that delivers inbound and outbound calls. It stated:

> …A critical feature of mobile telecommunications services is that they are jointly produced and jointly consumed elements of the mobile service, with common costs of production allocated among different price elements.
>
> The LTIE test cannot be ascertained by examining the individual elements of the service. It is necessary to consider the affect of any regulation on the markets in which end-users participate.[49]

### (a) Product

Delineation of the relevant product market requires identification of the goods and/or services supplied. Following this, the market is expanded to incorporate close substitutes, or potential substitutes, that end-users could turn to in the event of a small but significant and non-transitory increase in price.[50]

The Commission considers the relevant product in this instance is a GSM mobile call. The provision of GSM mobile calls are made up of the following 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);

[47] WorldxChange submission to the Draft Report, p. 3.

[48] Vodafone submission to the Discussion Paper, p. 9.

[49] Vodafone submission to the Draft Report, p. 9.

[50] *Merger guidelines*, Australian Competition and Consumer Commission, June 1999, p. 33.

- 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.

Without the interaction of all these elements a GSM mobile call cannot be provided.

Also, the Commission notes that the revenue streams flowing from these elements are interdependent. The revenue sources associated with the provision of these joint services are:

- 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.

As noted in Chapter 4, if effective competition exists in the provision of mobile calls, a change in one revenue stream will, in the long-term, be associated with an offsetting change in another stream. For example, if there is an increase in the access price for the GSM termination service, then the value to the mobile carrier of attracting additional mobile subscribers increases. Competition for mobile subscribers will result in a reduction in the price of mobile access services. In addition, the higher access price for the GSM termination service will be passed on to fixed-line end-users in the form of higher prices for call services (i.e. fixed-to-mobile calls). In the long-term the increase in revenue from higher access prices for GSM termination will be offset by a reduction in revenue from mobile access service fees and charges for outgoing call services.

Where there is not effective competition, there will still be a link between the revenue streams but they are unlikely to be exactly offset.

In its Draft Report, the Commission was of the view that due to the interdependencies between the wholesale and retail elements necessary to provide a GSM mobile call, they should be included in the same market. This remains the Commission’s view.

The Commission considers that if it were to determine that GSM termination was part of a separate market, then the overall market analysis might be distorted. This is because a mobile carrier prices each element of a mobile call taking into consideration the price of other elements. For example, the Commission understands that access prices for GSM termination may include some of the common costs associated with providing mobile origination. To define these elements as separate markets might ignore the fact that the pricing decision of one element affects the pricing decision of other elements. However, even if the Commission took the opposite view and accepted arguments that GSM termination should form its own market, it believes its conclusions would not differ. This is because the Commission considers the interdependency discussed above would still need to be factored into any consideration of the appropriate response to GSM termination.

The next step in determining the relevant product market is to consider all the potential substitutes for GSM mobile services.

***Substitutes for a GSM mobile call***

A number of carriers noted in submissions that there are many potential substitutes for a mobile call. Vodafone, for example, stated that consumers are faced with an abundance of choice when seeking to make contact with others. It considered possible substitutes included fixed calls, mobile calls, short message services (SMS), facsimile, WAP and e-mail to the mobile.[51]

The Commission is generally of the view that the period over which substitution possibilities should be considered is the longer term, but still the foreseeable future.[52]

*CDMA*

The Commission noted in its report on *Competition for long distance mobile telecommunication services* that there was information indicating that a network using CDMA technology would have different performance features from one utilising GSM technology.[53] However, the Commission considered that both types of networks would provide mobile services which were close substitutes for one another.

The Commission considers its previous assessment that CDMA is a substitute for the provision of a GSM mobile call, is the correct one. This leads the product market to be defined more in terms of a mobile call, rather than specifically as a GSM mobile call.

*3G mobile technologies*

Third generation mobile technology combines high-speed radio access and IP-based services. It allows 'always on' connection from the handset to the network, although end-users only pay when data is sent and/or received.

In March 2001, the Australian Communications Authority auctioned the 2GHZ spectrum, which can be used to provide 3G services. Telstra, Cable & Wireless Optus, Hutchison, 3G Investments Australia (Qualcomm), CKW Wireless and Vodafone all obtained licences in this band. Many of these carriers are reported to be making plans for the construction of 3G networks, with Hutchinson and Qualcomm claiming that their respective 3G networks will be established by 2002.[54] Generally, however, 3G services are considered to be a minimum of two-to-three years away from being widely available.

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[51] Vodafone submission to the Draft Report, p. 10.

[52] *Merger Guidelines*, Australian Competition and Consumer Commission, June 1999, p. 40.

[53] *Competition for long distance mobile telecommunications services*, Australian Competition and Consumer Commission, January 2000, p. 18.

[54] Communications Day, 4 July 2001 and Communications Day, 6 April 2001.

Third Generation services are not yet available and there is some uncertainty about how the technology will be applied and what services will be utilised. In its *Review of the Price Control on Calls to Mobiles*, Oftel, the UK telecommunications regulator, noted these uncertainties. It stated that there is uncertainty over which services will be developed, both initially and subsequently, to exploit 3G capabilities. Oftel commented that while it is likely that 3G will be used for voice, because a mobile user is likely to only want a single voice/data handset, it might be used primarily for more advanced applications. For these reasons, Oftel considered it inappropriate to include call termination on 3G networks in the scope of its consideration of regulatory controls at this time.[55]

Given the timing in relation to the availability of 3G services, and uncertainty surrounding demand characteristics for 3G services, the Commission considers 3G technology is unlikely to provide an effective constraint on GSM mobile prices in the two-year period relevant to this decision. The Commission acknowledges, however, that 3G services may become a substitute for GSM mobile services at some time in the future. The degree of this substitution will depend on the way the technology is implemented and which services and applications consumers demand.

Given the above, the Commission has not included 3G services in the relevant market definition for the purposes of this paper. However, it should be noted that even if the Commission did include 3G services in the relevant market, this would not affect the conclusions reached at this time.

*Fixed line*

The Commission concluded in its *Competition for long distance mobile telecommunication services* report that fixed line calls were not a sufficiently close substitute for mobile services.[56] It was noted that mobile services are not simply about enabling the end-user to make phone calls; mobility (the ability to make and receive calls from any geographic location) was, in the Commission's view, a significant feature of mobile services which was not present in the fixed market. It was noted that substitution possibilities between fixed and mobile services were increasing, although they still appeared to be in separate markets. Cable & Wireless Optus challenged this conclusion, asserting that the services were substitutable because of the superior sound quality and generally lower price of fixed services.

Although the Commission acknowledges that there is likely to be some substitution of fixed services for mobile services, the Commission considers that at this time such services are unlikely to constrain the prices charged for mobile calls to such a degree that they should be considered in the same market.

[55] *Review of the Price Control on Calls to Mobiles*, Oftel, February 2001, p. 26.

[56] *Competition for long distance mobile telecommunications services*, Australian Competition and Consumer Commission, January 2000, p. 18.

*Pre-paid packages*

A further consideration is whether the pre-paid mobile packages, where the end-user pays an up-front fee and purchases a SIM card with call 'credits', are in the same market as the post-paid (i.e. contract) packages. In its report on *Competition for long distance mobile telecommunication services* the Commission noted that it appeared that the two packages were targeted to different end-users. However, some degree of overlap was thought to be likely and the end-users were treated as separate but overlapping segments of the same market. The Commission considers this analysis still applies.

*Short message services*

Short message services to mobile phones enable communication to and from mobile phones and therefore incorporate the element of mobility.

In response to the Commission's Draft Report, Cable & Wireless Optus noted that SMS provides an alternative path to consumers. Cable & Wireless Optus argued that since the availability of SMS across mobile networks, there has been an explosion in SMS. Cable & Wireless Optus considered that a significant portion of this increase is substitution from mobile voice calls.[57]

Vodafone also supported the view that SMS is increasingly being used as a substitute for mobile calls or to trigger mobile call back. It noted that while SMS cannot fully replace some phone conversations, it does represent a valid communication substitute for some price sensitive customers. Vodafone pointed to anecdotal evidence of increasing sophistication of price-sensitive users, sending SMS at peak tariff times, and placing phone calls at off peak times. Vodafone did, however, concede that usage of text messaging is much higher for pre-paid customers than post-paid customers.[58]

Contrary to this view, Oftel considered that although SMS is to some extent a substitute for mobile calls, it is unlikely to have a constraining effect on access prices for mobile termination.[59] In its *Review of the Price control on Calls to Mobiles*, Oftel stated that because those operators who provide mobile voice calls also provide SMS, the implication would be that the operator would be competing with itself which would seem illogical.

As noted in its Draft Report, the Commission does not consider SMS to be an effective substitute for mobile calls at this time. In the event of an increase in the price of mobile calls the Commission believes the extent of substitution would be small, although growing. Further, it is noted that SMS offers a truncated form of communication that is not simultaneous, which is likely to limit substitution possibilities.

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[57] Cable & Wireless Optus submission to the Draft Report, p. 19.

[58] Vodafone submission to the Draft Report, p. 12.

[59] *Review of the Price Control on Calls to Mobiles*, Oftel, February 2001, p. 16-17.

*Other*

Other possible substitutes for a mobile call include e-mail, facsimile and paging. Cable & Wireless Optus noted in its submission to the Discussion Paper that calling parties in practice have numerous different methods by which contact can be made, including those options listed above.[60] It submitted that these competitive substitutes ensure that the price of the GSM termination service is at competitive levels.

As noted above, mobility is a significant feature of mobile services which is not present in e-mail and facsimile services. Mobility also exists in paging services, but again these services do not allow two way simultaneous communications and, as such, the extent of substitutability appears to be limited.

*Conclusion*

As in its Draft Report, the Commission considers the relevant product market to be one in which a mobile call is supplied, incorporating technologies such as CDMA and GSM. The market does not include fixed line, 3G mobile and SMS services, but does include both post-paid and pre-paid mobile packages.

**(b) Functional**

Delineation of the relevant functional market requires identification of the vertical stages of production and/or distribution which comprise the relevant arena of competition. This involves consideration of the efficiencies of vertical integration, commercial reality and substitution possibilities at adjacent vertical stages.[61]

Generally, it will be appropriate to include two (or more) stages of production in the same market where there are overwhelming efficiencies of vertical integration. In such a situation, market coordination between buyers and sellers would be superseded by in-house coordination.

The Commission noted in its Draft Report that there are separate wholesale and retail elements of the mobile services market. In support of this view, the Commission noted that there were seven carriers offering mobile calls at only the retail level. For example, resellers such as AAPT and Virgin Mobile (through a joint venture agreement with Cable & Wireless Optus) are able to offer retail services, without entering the wholesale market. There have been five mobile carriers offering services at the wholesale and retail level. Two of these, One.Tel and Hutchison, entered at the retail level, but later moved into the wholesale level. In May 2001, One.Tel announced that it had gone into administration and subsequently the administrator (Ferrier Hodgson) has ceased operation of the network. The sale of network assets has not yet occurred. The Commission understands, however, that

[60] Cable & Wireless Optus submission to the Discussion Paper, p. 54.

[61] *Merger guidelines*, Australian Competition and Consumer Commission, June 1999, p. 38.

there has been considerable interest in the network assets of One.Tel, and a possibility that there will continue to be five mobile carriers operating at a wholesale level.

As noted under the discussion of the product dimension, the Commission believes a market definition including both the wholesale and retail elements is most appropriate. In light of the existence of separate resellers, the Commission considers that the wholesale and retail elements of the market constitute separate functional levels within the same market.

### (c) Geographical

The Commission's report on *Local Telecommunications Services* noted that substitutability tests tend to be of limited use when delineating the geographical dimensions of telecommunications markets.[62] For example, a local call made in Perth is unlikely to be a substitute for a local call made in Melbourne. Rather, in delineating the geographic dimension of the telecommunications markets, factors such as the area over which major suppliers operate (supply-side) are considered to ensure that the relevant arena of competition is described.

As in the Draft Report, the Commission considers that the geographic dimensions of the market in which mobile calls are supplied to be a national one.

The wholesale and retail elements of a mobile call are currently supplied nationally by three carriers, Telstra, Cable & Wireless Optus, and Vodafone to other carriers and service providers, and to end-users. Hutchison supply the wholesale and retail elements of a mobile call in Sydney and Melbourne. One.Tel also supplied wholesale mobile services, using its 'NextGen' network.

Although One.Tel's and Hutchison's networks only operate(d) in distinct geographical locations, the Commission understands that they provide a national mobile service. This is made possible through roaming agreements with the three national mobile carriers. As noted below, the existence of national coverage (whether or not by utilising roaming agreements) is considered essential to compete.

### (d) Conclusion

The Commission's view is the relevant market is that in which a mobile call is supplied. This is a national market, involving distinct wholesale and retail functional elements allowing for the supply of mobile telecommunications services to service providers and end-users ('the mobile services market').

It includes the supply of the mobile origination and termination services (supplied by GSM and CDMA networks), mobile access services and outgoing call services.

[62] *Local Telecommunications Services*, Australian Competition and Consumer Commission, July 1999, p. 40.

### 5.1.2 Competition in the mobile services market

This section considers the level of competition in the mobile services market. Firstly, the level of concentration at the wholesale level is considered. Following this, the Commission assesses:

- whether the market is open to competition, by assessing the barriers to entry; and
- whether the characteristics of competition are present, by analysing *inter alia* price changes over time and product differentiation at the retail level.

Assessing the effectiveness of competition is not, however, a static analysis limited to a description of current conditions and behaviour. It is a dynamic analysis concerned with features affecting the supply of services in the future. Nevertheless, current conditions will, in general, provide a starting point from which to consider the future effectiveness of competition.

The Commission notes that throughout the public consultation processes associated with this Final Report, a number of carriers submitted that the mobile services market is highly competitive. In particular, Telstra noted in its submission to the Draft Report that its view remains that the mobile industry is highly competitive and set to become more so.[63] Similarly, Vodafone submits that the mobile market is intensely competitive.[64] Primus and One.Tel also commented that the mobile services market is becoming more competitive.[65]

#### (a) Market concentration

A concentrated market, assessed in terms of market share, is a necessary but not sufficient condition to enable the exercise of market power. Market share information in the context of the mobile services market is often presented in the form of the number of subscribers per network.

The mobile services market is highly concentrated. Recent figures indicate that the three largest mobile carriers, Telstra, Cable & Wireless Optus and Vodafone, account for 99 per cent of the mobile services market[66] at the wholesale level, in terms of subscribers.[67]

However, some new entry into the wholesale element of the mobile services market occurred during 2000, with One.Tel and Hutchison, under the brand name of 'Orange One', both rolling out new mobile networks. As noted above, however, One.Tel is no longer active, and its network assets may be sold in the future.

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[63] Telstra submission to the Draft Report, p. 1.

[64] Vodafone submission to the Draft Report, p. 3.

[65] Primus submission to the Draft Report, p. 2 and One.Tel submission to the Draft Report, p. 16.

[66] In the Commission's merger guidelines, a market is considered highly concentrated where the combined share of the four largest firms in the market is 75 per cent or greater. This is clearly the case in the mobile services market, regardless of whether the wholesale or retail dimensions are considered.

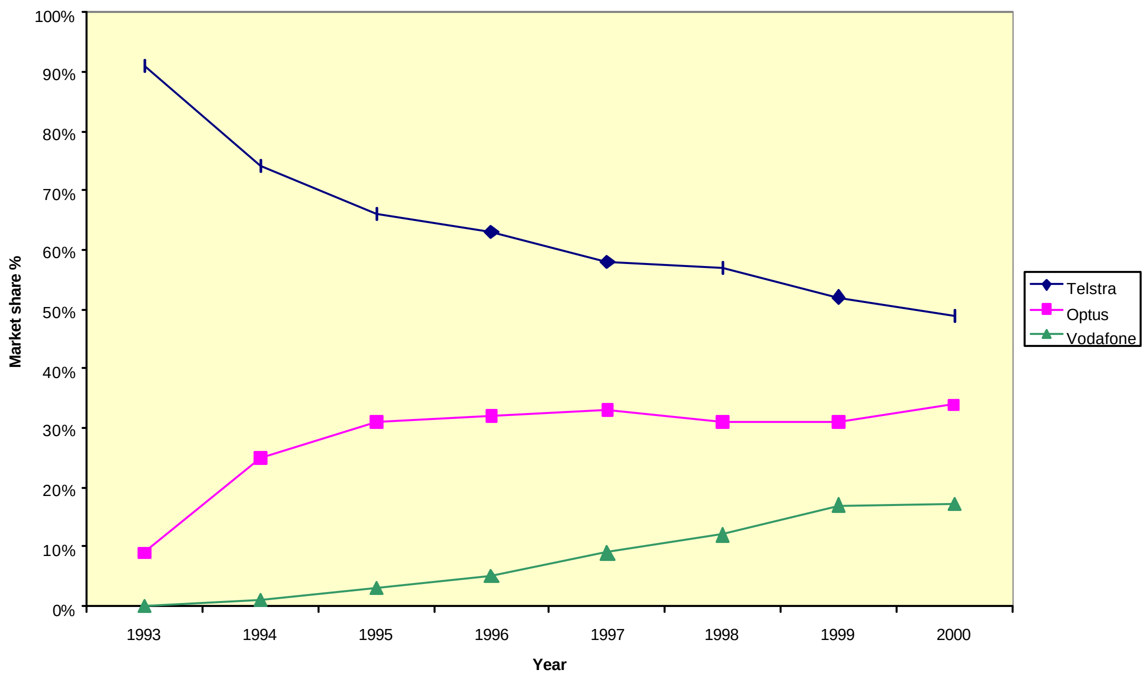
[67] As at December 2000.

The Commission understands that the network rollout of Hutchinson is restricted to Sydney and Melbourne and that other areas are services by a roaming agreement with Telstra. This agreement enables mobile subscribers connected Hutchison's networks to roam onto Telstra's network outside Sydney or Melbourne to make or receive a mobile call. One.Tel had a similar roaming arrangement with Telstra.

The size of the market also appears to be growing as the latest mobile subscriber figures indicate that the size of the market is continuing to increase and new entrants are gaining market share. For example, it was reported that Orange One has increased its subscriber base from 39,000 in October 2000, to 102,000 in March 2001. Figures released by Vodafone also indicate an increase in subscribers from 1,960,000 in December 2000, to 2,111,000 as at March 2001.[68] Against this, a recently released report by analysts ABN-AMRO suggests market growth has recently plateaued.[69]

While the market is highly concentrated, relative market share has been changing over the past few years, with Telstra's market share declining and that of Cable & Wireless Optus and Vodafone increasing. Diagram 1 depicts the market shares of the mobile carriers over the period 1993-2000.

**Figure 1: Market share of major carriers**




Source: *Australia – Mobile Communications – Subscriber Statistics*, Paul Budde Communication, 2000

[68] Communications Day, 27 April 2001, p. 1.

[69] Communications Day, 4 July 2001, p. 2.

Recent network subscriber figures available to the Commission include One.Tel and Hutchison's entry into the market and are provided in Table 1. The figures include both CDMA and GSM networks.

**Table 1: Mobile network subscribers as at December 2000**

| Mobile carrier | Number of network subscribers | Market share |
|---|---|---|
| **Telstra** | 4,770,000 | 46.2% |
| **C&W Optus** | 3,420,000 | 33.1% |
| **Vodafone** | 1,960,000 | 19% |
| **Hutchison (Orange)** | 80,000 | 0.77% |
| **One.Tel**[70] | 100,000 | 1.0% |
| **Total subscribers** | **10,330,000** | |

Source: *Mobile subscriber numbers,* Deutsche Bank

The Commission understands that these figures only reflect the level of competition between mobile carriers in the wholesale element of the mobile services market. They do not expressly reflect the role of resellers, such as Virgin Mobile and AAPT, in the retail element of the market.

In the Commission's report on *Competition for long distance mobile telecommunication services*, it noted that on the basis of available information it appeared that resellers held approximately 15 per cent of the market at a retail level.[71] Although subscriber figures have altered somewhat since the release of this report, it serves to demonstrate that vertically integrated mobile carriers account for the majority of subscribers at the retail level.

High concentration levels do not necessarily mean that competition is ineffective. Where the market is characterised by low barriers to entry, incumbent firms may be constrained to act as if operating in a competitive market due to the threat of entry. If, however, there are significant barriers to entry, this may indicate that the threat of entry is unlikely to be effective in terms of competitive outcomes.

### (b) Barriers to entry

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

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[70] The Commission notes that the One.Tel network has ceased operation and it is expected most customers will have transferred to other carriers.

[71] *Competition for long distance mobile telecommunication services*, Australian Competition and Consumer Commission, January 2000, p. 24.

- the importance of geographic coverage;
- the need to obtain spectrum;
- sunk costs; and
- brand loyalty.

Each of these is discussed below.

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

The Commission noted in its report on *Competition for long distance mobile telecommunication services* the importance of national network coverage in enabling carriers to effectively compete with each other.[72] Currently the three major mobile carriers have rolled out network infrastructure that provides mobile coverage for over 90 per cent of the Australian population. Details of network coverage for Telstra, Cable & Wireless Optus and Vodafone are given in Table 2.

**Table 2: Coverage of incumbent networks**

| Carrier | Population coverage (%) |
|---|---|
| Telstra (GSM) | 94 |
| Telstra (CDMA) | 95 |
| Cable & Wireless Optus | 94 |
| Vodafone | 93 |

Source: *Telecommunication Infrastructures In Australia: A Research Report for the ACCC*, BIS Shrapnel, June 2001 (to be published shortly).

As noted above, the roll-out of Hutchison's mobile network has to date only occurred in Sydney and Melbourne. National coverage is achieved through roaming agreements with Telstra. If Hutchison only offered mobile services in regions where they had rolled out their own networks, they would find it difficult to attract mobile subscribers (and would only offer limited competition to the major mobile carriers). It is likely that very few mobile subscribers would join a mobile network which limited the regions they could make calls from or to – particularly where other carriers offered national coverage for equivalent price.

The Commission considers, therefore, that national coverage is essential for a new mobile carrier, whether it is achieved by rolling out a network or through roaming agreements.

[72] *ibid.*, p. 26.

***The need to obtain spectrum***

Spectrum in the 1.8 GHz, 900 MHz and 800 MHz ranges is used to provide mobile services. Typically, spectrum is licensed through an auction process, with licences effective for up to 15 years.

There are currently seven carriers with spectrum licences that enable them to provide mobile calls in Australia, with four of those carriers actually providing such services. The following spectrum licences have been allocated, some quite recently following various spectrum auction processes held in 1998, 1999 and 2000:

- Telstra, Cable & Wireless Optus and Vodafone have nationwide spectrum licences;
- AAPT has spectrum licences nationwide, excluding Sydney and Melbourne (although it is not currently providing services utilising this spectrum);
- Hutchison and One.Tel have spectrum licences in the five mainland capitals; and
- Catapult has spectrum licences in Cairns and South Australia (although it is not currently providing services utilising this spectrum).

The Commission notes that there have been mobile spectrum auctions in the past three years allowing new carriers to enter the mobile market. It also notes that where significant holdings of spectrum are not currently being utilised, as is particularly the case with AAPT and One.Tel, there is the possibility that these holdings are sold to a new carrier.

That said, 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 (i.e. there are nevertheless significant barriers to entry). Without an auction process to allocate spectrum licences, or holdings which are not being utilised, prospective new mobile carriers cannot enter the mobile services market.

***Sunk costs***

The Commission's report on *Competition for long distance mobile telecommunication services* noted that the significant up-front investment costs associated with rolling out a mobile network was a possible barrier to entry.[73]

With regard to establishing base stations and other mobile infrastructure, the Commission understands that in setting up a new network it is possible to minimise the number of base stations by starting with relatively large 'cells' and then dividing these into smaller cells through the establishment of additional base station sites as necessitated by service take-up. Mobile carriers can also reduce commercial risks by setting up local networks and negotiating domestic roaming arrangements with other mobile network operators.[74]

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[73] *ibid.*, p. 26-28.

[74] Although the degree to which this reduces commercial risk will depend on the terms and conditions of the roaming agreements.

The Commission understands that one base station in a CDMA network is capable of handling as much as ten times the traffic of the old analogue system and five times the traffic of the GSM system.[75] Given this, the Commission would anticipate lower barriers to entry (because of lower sunk costs) associated with rolling out new CDMA networks, as compared to GSM networks.

Also, considering the number of competitors in the mobile services market at this point in time, it is likely that a secondary market exists, for at least some components of a mobile network, such as spectrum. For example, with the demise of One.Tel, its mobile spectrum and network assets may be sold to a competitor or new entrant. This may serve to reduce the sunk cost nature of the assets. However, the Commission recognises that selling components of a mobile network, such as base stations, to competitors is limited by differing network structures and their technological compatibility.

To date, evidence suggests that the sunk costs associated with establishing a mobile services network are significant, but not so prohibitive as to deter some entry. However, it appears that these sunk costs limit the extent of contestability in the mobile services market.

*Brand loyalty*

It has long been considered that brand awareness, through advertising and marketing promotions, leads to increased market share. This is also evident in the mobile services market. Paul Budde highlighted the relationship between advertising and market share in the mobile services market in the *1999/2000 Mobile Communications Market*. He stated:

> In late 1995 Cable & Wireless Optus became the market leader in digital, with around 37% of the market. After a successful Christmas 1995 blitz campaign, Telstra caught up and both companies had a market share of around 40%. However, in early 1996 Telstra slipped behind – its share of the digital market dropped to around 36%, while Cable & Wireless Optus maintained its 40% share.
>
> What basically happened at this stage was that $70 million was spent on a special promotion, resulting in a swap of 100,000 customers between Cable & Wireless Optus and Telstra. Telstra put a special program into action in April/May 1996 to rectify the situation, the program has clearly been working as the company is currently pulling ahead of the digital race. This caused major problems for the other two players during 1996; it was not until 1997 that Cable & Wireless Optus finally cracked the 500,000 barrier.[76]

The funds required for advertising and creating brand awareness for new entrants may constitute a sunk cost and hence, to some extent, a barrier to entry. However, such costs may not constitute a significant barrier to entry, as when a brand is sold (in the event of collapse or sale), goodwill for that brand may be recognised. This would serve to reduce the sunk nature of funds required for brand awareness.

That said, the environment for brand loyalty to act as a barrier to entry may be increased with the bundling of services. In this regard, the Commission notes the recent bundling of services

[75] *Communications Day*, 24 August 2000, p. 2.

[76] *Telecommunications Strategies in Australia - 1999/2000 Mobile Communications Market,* Paul Budde Communication, 1999, p. 174-175.

by carriers that participate in the wholesale level of the mobile services market, as well as the wholesale level of the long distance and local call markets. For example, some carriers offer special (retail) deals, which involves a discount on the 'total bill' for all three services, provided the customer uses the one carrier for each of those services. This may increase brand loyalty and hence the barriers to entry at the retail level of the mobile services market.

***Conclusion***

The Commission considers there are certain barriers to entry to the mobile services market, including national geographic coverage, the need to acquire spectrum and the sunk costs associated with rolling out a mobile network. These barriers operate to limit the contestability of the market. Therefore, in the Commission's view, actual entry to the mobile services market is likely to be required to effectively constrain the actions of the established carriers in the market.

**(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 and the erosion of market power.

To date, the mobile services market has been characterised by relatively high growth rates. This has been driven by increasing penetration levels (i.e. the total number of subscribers compared to the total population) as distinct from, say, increasing applications for mobile phones. As subscriber growth begins to decline, overall market growth may begin to slow. It is noted in the Commission's report on *Competition for long distance mobile telecommunication services* that Telstra supplied the Commission with information suggesting that mobile market growth in terms of number of subscribers appeared to have peaked in 1995, and had progressively fallen to around 16 per cent in 1998.[77]

In that report Cable & Wireless Optus was noted to predict that penetration figures would surge as a result of the popularity of pre-paid services.[78] It also submitted that as the mobile services market moved into its second phase of growth, the marketing emphasis would shift from customer acquisition to customer retention.

Recent figures indicate that there has been a further increase in penetration rates. Currently over one in two Australians are reported to own a mobile phone (60 per cent penetration).[79] Some industry commentators predict this figure will exceed 80 per cent in the coming years. However, as noted above, a recently released report by analysts ABN-AMRO suggests market growth has recently plateaued.

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[77] *Competition for long distance mobile telecommunication services*, Australian Competition and Consumer Commission, January 2000, p. 24.

[78] *ibid.*, p. 32.

[79] Communications Day, 4 July 2001.

### (d) 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.

The wholesale element of the mobile services market appears to be largely homogenous. Different mobile carriers essentially use similar mobile origination and termination services to provide the ability to make and receive a mobile call, although there may be some differences between networks in terms of coverage, call drop-out rate, and clarity of the call.

Product differentiation is more likely to occur at the retail level of the market, where mobile carriers, and/or resellers, sell the service to mobile subscribers. These differences are essentially 'financial' in nature reflecting a price trade-off between various elements.

The key areas where product differentiation occur are:

- Length of contract offered – most contracts are offered on an 18 to 24 month basis. However, Virgin Mobile offers a month-to-month contract, under certain conditions. Also prepaid contracts are available.

- Type of handset offered – there are a variety of brands of handset offering a range of functionality. They are generally offered over a range of prices, depending on the call plan they are bundled with. In some cases the handsets are offered free of charge.

- Extra, or cheaper services offered by the carrier – these appear to differ between carriers. For example, Telstra offers a discount service for calls between a mobile subscriber's fixed line and mobile phones, provided both services are on the same bill. Cable & Wireless Optus offers 'Yes time' where mobile subscribers can talk for free for the first 20 minutes of any mobile call between two Cable & Wireless Optus mobile subscribers from 8pm to 12pm. Virgin Mobile offers free voice mail recovery.

- Structure of call charges – for example a number of mobile carriers offer one second mobile call charges as opposed to charging for 30 second blocks (or part thereof).

There appears to be a number of areas in which mobile carriers are able to differentiate their retail product offerings, as is evidenced by the large variety of product offerings outlined above.

### (e) 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 where they are close to or at cost, allowing for a normal rate of return.

The Communications Research Unit (CRU) of the Department of Communications, Information Technology and the Arts has recently undertaken work for the Commission on pricing of certain telecommunications services. This included the extent of retail price movements for GSM mobile calls over the last four years. These retail price movements are outlined in Table 3 where a series of indexes are used to illustrate these movements, for the overall mobile package (mobile access services and outgoing call services), over a variety of pricing plans.[80] The plan types range from very low (where handsets are generally provided for free, mobile access service fees are low and outgoing call charges are relatively high) to very high (where handsets are also generally provided for free, mobile access service fees are high and outgoing call charges are low).

**Table 3: GSM retail price movements (postpaid plans – using real prices)**

| Elementary aggregate indices | 1996/97 | 1997/98 | 1998/99 | 1999/2000 |
|---|---|---|---|---|
| Very Low | 100.00 | 94.55 | 74.60 | 53.00 |
| Low | 100.00 | 95.69 | 87.99 | 72.37 |
| Average | 100.00 | 95.92 | 94.20 | 81.00 |
| High | 100.00 | 95.57 | 89.25 | 78.80 |
| Very High | 100.00 | 97.21 | 95.28 | 84.38 |
| **Index for GSM Postpaid** | **100.00** | **96.55** | **92.82** | **81.11** |

Source: *Changes in the price paid for telecommunications services in Australia*, Australian Competition and Consumer Commission, April 2001, p. 28.

As can be seen the aggregate index (taking into account all pricing plans) has declined from 100 to 81.11 over four years, suggesting a significant decline has occurred in the retail prices for GSM mobile calls.

The Commission also notes that many carriers are no longer charging a $65 connection fee. This fee was a one off fee payable upon the connection of a mobile phone to a particular mobile network. This fee was charged each time a consumer changed mobile carriers.

Another indication of the level of price competition among the carriers is the amount of churn experienced.[81] Churn is where a mobile subscriber changes carrier at the end of their contract, or before, due to perhaps a better price being offered by another mobile carrier or more favourable terms and conditions.

Arrangements for the supply of a mobile service to end-users typically involve the end-user entering into a fixed term contract with the service provider (i.e. the mobile carrier or reseller). This contract effectively 'ties' the end-user to the service provider for a specific period, generally 18 to 24 months.[82] If customers wish to end their contract earlier than the

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[80] It is noted that these indexes only reflect aggregate retail price movements for the three main mobile carriers, Telstra, Cable & Wireless Optus and Vodafone.

[81] The Commission notes that churn may also occur because of non-price terms and conditions such as customer service.

[82] Telecommunications Strategies in Australia – *1999/2000 Mobile Communications Market*, Paul Budde Communication, 1999, p. 174-175.

specified time, a cancellation fee must be paid. This fee is designed to recover up front costs to the provider, such as handset subsidies.

Table 4 displays the mobile churn rates from 1996 to 2000. The figures show an increase in churn rates since 1996, and in fact depict reasonably high rates of churn, indicating that customers are willing to change carrier at the end of a contract term.

**Table 4: Mobile churn rates 1996-2000**

| Year | Digital | Analogue |
|---|---|---|
| 1996 | 21% | 42% |
| 1997 | 24% | 32% |
| 1998 | 31% | 46% |
| 1999 | 40% | N/A |
| 2000 | 35% | N/A |

Source: *Australia – Mobile – Churn, Roaming, MNP, Fixed-to-Mobile*, Paul Budde Communication, August 2000, p. 1

However, the Commission understands that the figures above include subscribers who switch to a higher plan within the one network, thus not fully reflecting the customers churning from one network to another. Also, the above figures incorporate customers forced to churn to new networks as a result of the phase out of the analogue system. This would lead to churn amounts being overstated in terms of movement from one digital network to another.

One factor that will reduce the cost to a customer of switching networks, and thus should increase the willingness of a customer to churn is mobile number portability. As of 25 September 2001, mobile numbers will be retained when switching carriers, a feature that has not been available previously in Australia.

### (f) Profitability

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.

While the Commission did not comment on the profitability or otherwise of carriers in the Draft Report, Cable & Wireless Optus was of the view that carriers were not profitable and that this was indicative of vigorous competition:

> In terms of financial accounts, the data is clear – mobile operators are making substantial losses and not earning their opportunity cost of capital concerning their present investments.[83]

[83] Cable & Wireless Optus submission to the Draft Report, p. 21.

Cable & Wireless Optus presented evidence relating to accounting profits, such as earning before interest and tax (EBIT), and also estimated returns on capital[84], which provides a rough benchmark for profitability (when compared to the firm's weighted average cost of capital). Cable & Wireless Optus did not, however, provide the Commission with mobile-specific information on its own business to support its views.

The Commission is of the view that the carriers are likely to differ markedly in their profitability. This is due to differences in operating efficiency, the scale of the carriers (in that unit costs decline as more customers use that network[85]) and the costs of market entry in terms of licence fees and spectrum costs. The most recent results of some of the larger carriers suggest that current returns on capital are in excess of operators' cost of capital for their mobile business units. This would suggest they are currently earning excess profits, although this would depend on the extent of cumulative operating losses from previous years.

The Commission has been limited in its ability to accurately assess carrier profitability due to the limited mobile-specific financial information put forward by the carriers other than Vodafone.[86] The Commission will look to enhance its information base in this area to assist future decision-making on the GSM termination service.

### 5.1.3 Conclusion

There appears to be an increasing level of competition in the mobile services market, particularly in the retail element of the market. In this regard it is noted that while the mobile services market is characterised by high concentration levels and barriers to entry, there are signs that the level of competition is intensifying, with some successful (and some unsuccessful) new entry, continued growth in the market, increased product offerings and reductions in retail prices for mobile calls.

The previous Chapter noted that analysis of the overall level of competition in the mobile services market was a factor in determining whether the Commission considered there to be grounds for the reduction of access prices for GSM termination. The Commission considers that, in particular, the above analysis shows that the retail element of the mobile market is becoming increasingly competitive, and accordingly the Commission expects that any excess profits earned (by some carriers) are likely to be reducing.

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[84] Usually estimated as earnings before interest and tax divided by capital employed (total assets less current liabilities).

[85] The MMC estimated the 'cost-volume elasticity' to be about 0.64 in the 1998 review of access prices for mobile termination for BT Cellnet and Vodafone. This implies that a 1 per cent increase in call volumes leads to a 0.64 per cent increase in call costs, and therefore that larger carriers who have captured scale are likely to have lower costs than recent entrants.

[86] Due to the confidential basis on which Vodafone provided this information, the Commission is unable to make any comment on Vodafone's profitability or financial position.

## 5.2 Fixed-to-mobile services market

The Commission's Draft Report did not examine in detail the related downstream market in which fixed-to-mobile calls are supplied (this is a related market in the sense that one of the key inputs enabling the provision of a fixed-to-mobile call is GSM termination). Consideration of this market is important, however, because as identified in Chapter 4 above, it is the supply of GSM termination for the provision of fixed-to-mobile calls which is of particular concern to the Commission.

### 5.2.1 Market definition

#### (a) Product

As noted above, the process of market definition begins with identifying the product/service being offered and extending the market boundaries to incorporate all possible substitutes for that product/service.

In this instance the Commission considers that the relevant product is a fixed-to-mobile call. That is, a call which originates on a fixed line network and terminates on a mobile network and which enables an end-user to contact a mobile subscriber regardless of that mobile subscribers' location. The market is then expanded to incorporate close substitutes, or potential substitutes, that end-users could turn to in the event of a small but significant and non-transitory increase in price.

There are a range of services which may be considered substitutes for fixed-to-mobile calls. For example, Vodafone has suggested that fixed line calls, mobile calls, SMS, Web-based SMS, WAP, and e-mail to the mobile are all choices facing an end-user when seeking to make contact with other end-users.[87]

*Fixed line*

The Commission notes that fixed line calls (calls which originate and terminate on a fixed line network) do not provide an end-user with the ability to contact a mobile subscriber regardless of that mobile subscribers' location. In this respect, such calls are unlikely to offer substitution possibilities to end-users in the case of an increase in the retail price of fixed-to-mobile calls. For these reasons the Commission considers that fixed line calls are unlikely to be substitutes for fixed-to-mobile calls.

*Mobile*

The extent of substitution between mobile calls and fixed-to-mobile calls is not immediately clear. Mobile calls provide an end-user with the ability to contact a mobile subscriber regardless of that mobile subscribers' location (the difference being that the end-user calling may also be mobile). However, the question to consider is whether in the event of a small but

[87] Vodafone submission to the Draft Report, p. 10.

significant and non-transitory increase in the retail price of fixed-to-mobile calls an end-user would substitute mobile calls for fixed-to-mobile calls. It is the Commission's view that at this point in time such substitution would not be widespread. In this respect, the Commission notes that, say, for an on-going 10 per cent increase in the retail price of fixed-to-mobile calls (e.g. from 30 cents per minute to 33 cents per minute) end-users are unlikely to consume fewer fixed-to-mobile calls and more mobile calls. The Commission notes that factors limiting substitution possibilities include the less than full penetration rate of mobile phones.

*SMS*

As noted above, SMS enables an end-user with the ability to contact a mobile subscriber regardless of that mobile subscribers' location. However, the Commission is of the view that at this stage the extent of substitution of SMS (and web-based SMS) for fixed-to-mobile would be relatively limited. In particular, given web-based SMS is a relatively new product its ability to constrain the price of fixed-to-mobile calls is, at this point in time, likely to be quite small. A further factor is that SMS does not allow for simultaneous communication between the end-user calling and the mobile subscriber, which may limit the extent of substitution.

*The pre-selection determination*

The Commission noted in the Draft Report that fixed-to-mobile calls are a part of the pre-selection basket, with national long-distance and international calls, and that pricing of fixed-to-mobile calls may also impact on competition for these call types. AAPT's submission to the Draft Report was that the market in which fixed-to-mobile calls are supplied is likely to be 'artificial' as a result of the pre-selection determination. It also submitted that the correct approach for the Commission to take in assessing downstream markets is to ignore the impact of the other services in the pre-selection basket.[88]

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. The result is that with increasing competition at the retail level in the provision of long-distance and international calls it is not clear what the extent of new entry into the fixed-to-mobile market would be if, say, access prices for GSM termination were lowered.

*Conclusion*

The Commission considers the relevant product market to be one in which a fixed-to-mobile call is provided.

[88] AAPT submission to the Draft Report, p. 12.

**(b) Functional**

The Commission considers that the relevant functional level of the market for fixed-to-mobile calls is the retail level. The Commission is of the view that while fixed-to-mobile calls are provided using the wholesale PSTN origination and GSM termination services, competition at the retail level for fixed-to-mobile calls does not constrain the access prices for these services. In support of this conclusion, it is noted that PSTN origination is regulated and that Chapter 4 above determines there are particular features of GSM termination which mean that the competitive forces in place are relatively weak, allowing mobile carriers to set access prices above cost. The Commission, therefore, considers that fixed-to-mobile calls are provided at a retail level and that the wholesale PSTN origination and GSM termination services are a part of separate markets.

It is noted that Macquarie Corporate stated in its submission to the Draft Report that it is not an access seeker of GSM termination, rather that it acquires fixed-to-mobile services in the wholesale market. It also noted that there is an absence of competition in the wholesale market.[89] In addition, Primus submitted that there is a wholesale fixed-to-mobile segment of the market.[90] The Commission notes that even if there was a wholesale level of the fixed-to-mobile market, there would still be two separate wholesale inputs (PSTN origination and GSM termination) which are a part of separate markets to the fixed-to-mobile market.

Therefore, the Commission, considers that fixed-to-mobile calls are provided at a retail level and that wholesale PSTN origination and GSM termination services are a part of separate markets.[91]

**(c) Geographic**

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

**(d) Conclusion**

The Commission considers the relevant market to be the national market for the provision of fixed-to-mobile calls at the retail level. It is noted that the fixed-to-mobile market is a related downstream market of the mobile services market.

### 5.2.2 Competition in the fixed-to-mobile market

This section examines the level of competition in the fixed-to-mobile market. Consideration of the extent of competition is important as it will allow the Commission to assess the likely

[89] Macquarie Corporate submission to the Draft Report, p. 3.

[90] Primus submission to the Draft Report, p. 2.

[91] As noted above, the Commission considers GSM termination is provided in the mobile services market.

impact of the various pricing methodologies (for determining access prices for GSM termination) on the market for fixed-to-mobile calls.

A number of submissions to the Draft Report commented on the relationship between competition in the mobile services market and that in which fixed-to-mobile calls are supplied. In particular, submissions noted that retail prices for fixed-to-mobile calls have not decreased in line with retail prices for mobile access services and outgoing calls.

RSL COM stated that, in its view, the fixed-to-mobile market is devoid of any competitive pressure.[92] Further, Macquarie Corporate submitted that fixed-to-mobile competition at the retail level was severely restricted, as a result of the lack of competitive forces on access prices for GSM termination. In addition it noted:

> Results from an ATUG/AAS benchmarking study released in early 2000 showed that although fixed to mobile is the fastest growing sector of voice services, fixed to mobile retail prices did not change over the period of the benchmarking study while prices for all other voice services dropped.[93]

Vodafone submitted that there are strong pressures in the fixed-to-mobile market as a result of the increasing range of substitutes available to end-users. It noted that as end-users devoted more of their telecommunications budget to fixed-to-mobile calls, the incentives to press for lower retail prices for fixed-to-mobile operators would increase.[94] Vodafone also commented, however, that reductions in access prices for GSM termination which have been negotiated with fixed line carriers have often not been passed through, or have been slow to pass through, to end-users.[95]

In relation to this last point, AAPT submitted that the ability of a carrier to pass on higher discriminatory prices in the fixed-to-mobile market is limited by the presence of two vertically integrated mobile carriers who also provide fixed-to-mobile calls based on their internal transfer prices. It submitted that this constraint is illustrated by the fact that Telstra and Cable & Wireless Optus have introduced capped prices which only apply to fixed-to-mobile calls on their own networks.[96] The Commission understands, however, that Telstra is the only carrier to differentiate between fixed-to-mobile calls which are terminated on their own network or that of other mobile carriers.

**(a) Market concentration**

As noted above, a concentrated market, assessed in terms of market share, is a necessary but not sufficient condition to enable the exercise of market power.

The Commission does not have exact market share data in relation to the fixed-to-mobile market, but notes there appears to be in excess of ten carriers providing these retail services

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[92] RSL COM submission to the Draft Report, p. 9.

[93] Macquarie Corporate submission to the Draft Report, p. 1.

[94] Vodafone submission to the Draft Report, p. 12.

[95] Vodafone submission to the Draft Report, p. 12.

[96] AAPT supplementary submission to the Discussion Paper, p. 2.

as a part of the pre-selection basket. In respect of market share it its useful to consider the market shares for national and international calls. This is because under the pre-selection determination when a consumer pre-selects national and international calls they also pre-select fixed-to-mobile calls. Therefore it is expected that the market shares for fixed-to-mobile calls would be expected to be similar to national and international calls. These are provided in Table 5.

Having said that, the market share figures for international calls are considered to be less relevant for determining fixed-to-mobile market concentration as there appears to be several providers of (only) international calls, who rely on use of override codes and hence do not compete to provide national or fixed-to-mobile calls. Therefore, the market share figures for national calls appear to be of greater relevance – these illustrate that there is a degree of concentration with Telstra providing a significant proportion of the calls.

**Table 5: Estimated share for national and international services, June 2000**

| Carrier | National | International |
|---|---|---|
| Telstra | 75% | 48% |
| Cable & Wireless Optus | 16% | 18% |
| AAPT | 6% | 6% |
| One.Tel | 2% | 5% |
| Other | 1% | 23% |

Source: *A report on the assessment of Telstra's undertaking for the Domestic PSTN Originating and Terminating Access services,* Australian Competition and Consumer Commission, July 2000, p. 32.

The Commission also notes that to the extent that many of these carriage service providers purchase the PSTN origination and GSM termination services, their ability to compete on price is restricted by the access prices they are charged for these key inputs. That said, in an environment where there appears to be a degree of concentration but a reasonably large number of competitors the Commission would expect reductions in access prices for GSM termination to be passed on, at least in part, by fixed-line only carriage service providers, to end-users in the form of lower retail prices for fixed-to-mobile calls.

### (b) Barriers to Entry

The Commission considers that the barriers to entry to the fixed-to-mobile market are minimal, as is evidenced by the large number of carriers operating in the market. In particular the Commission notes that carriage service providers are able to purchase PSTN origination and GSM termination from carriers and provide fixed-to-mobile calls without rolling out significant amounts of their own infrastructure. This would suggest that there would be minimal sunk costs associated with entry into this market. It is noted, however, that where access prices for these services are above cost, entry may be more difficult than otherwise. Carriage service providers purchasing wholesale inputs at above cost access prices may find it difficult to compete with integrated carriers who face lower internal transfer prices.

A decision to enter the fixed-to-mobile market means that a carriage service provider must also provide long-distance and international calls (given the pre-selection determination). The Commission does not consider this to be a barrier to entry as carriage service providers are able to purchase the relevant wholesale services to provide these call types without rolling out significant additional amounts of their own infrastructure. Furthermore, to the extent that carriage service providers were already providing long-distance and international calls they may have established brand awareness.

**(c) Price Conduct**

As noted above, a 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, allowing for a normal rate of return.

The Commission has some information about the cost of providing fixed-to-mobile calls (comprising the cost of PSTN origination, transmission and GSM termination[97]) and considers that retail prices are high relative to costs. This led the Commission to conclude in the context of the recent *Review of Price Control Arrangements* that competition does not appear to be effective in the fixed-to-mobile market.[98] It is noted, however, that this conclusion rests, in particular, on access prices for GSM termination, a wholesale service which is a part of a separate market, being above cost.

The CRU's work on pricing of certain telecommunications services included the extent of retail price movements for fixed-to-mobile calls over the last five years. The CRU collected information from Telstra, Cable & Wireless Optus, AAPT and One.Tel and its calculations indicated that:

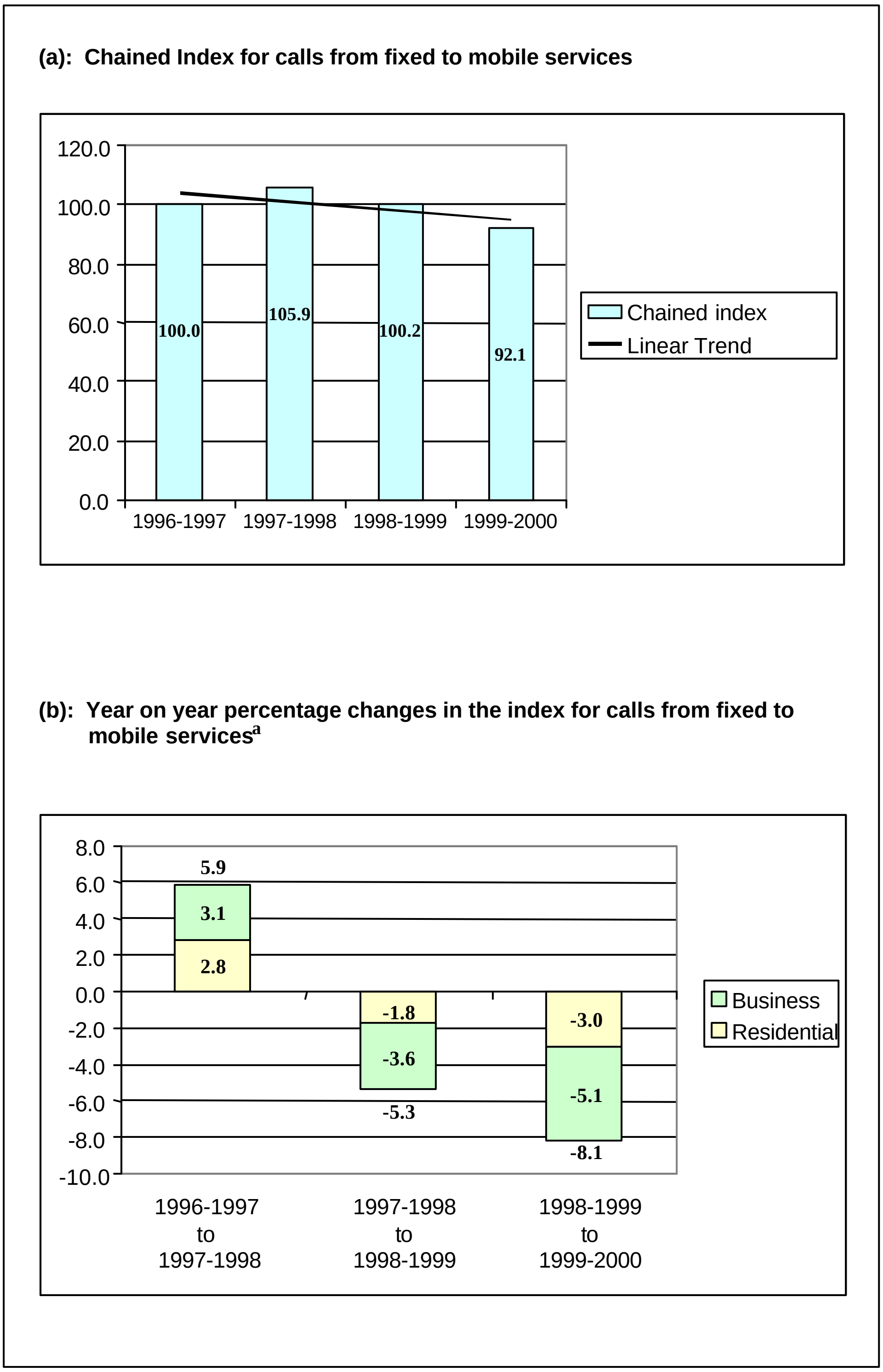
- the price of fixed-to-mobile calls decreased by 7.9 per cent between 1996-97 and 1999-2000; and
- the price of fixed-to-mobile calls increased by 5.9 per cent between 1996-97 and 1997-98 before it began a downward trend over the rest of the analysis period. It decreased by 5.3 and 8.1 per cent between 1997-98 and 1998-99, and 1998-99 and 1999-2000.

The change in fixed-to-mobile prices between 1996-97 to 1999-2000 is shown in Figure 2 below.

[97] Information on the cost of GSM termination was outlined in Chapter 4 of this Final Report.

[98] *Review of Price Control Arrangements*, Australian Competition and Consumer Commission, February 2001, p. 24.

**Figure 2: Change in the price of calls for fixed to mobile services, 1996-97 to 1999-2000**




(a) the sum of the percentage points attributed to each major component of the index may not sum to the total percentage change due to rounding.

Source: *Changes in the prices paid for telecommunications services in Australia,* Australian Competition and Consumer Commission, April 2001, p. 48.

As can be seen from a comparison of Figure 2 and Table 3 above, retail prices of fixed-to-mobile retail have decreased by less than the retail prices for mobile calls over the period 1996-2000.

### 5.2.3 Conclusion

The Commission considers that it is difficult to make definite conclusions about the competitiveness of the fixed-to-mobile market. There appears to be a degree of market concentration with one large player, but also a relatively large number of carriage service providers competing for market share and low barriers to entry. Further, there is some evidence of declining prices for fixed-to-mobile calls.

This said, the Commission notes that the extent of price reductions appear to be limited by the lack of competitive pressure on prices for GSM termination, and that to the extent one of the key wholesale inputs appears to be priced above cost there is the potential to improve allocative efficiency in the fixed-to-mobile market. In summary, there appears to be effective competition associated with resale of the inputs into a fixed-to-mobile call, but some doubts as to the competitiveness of the supply of these inputs.

# 6. Comparison of pricing methodologies

In the Draft Report the Commission discussed a range of regulatory approaches that had been proposed for determining access prices for GSM termination. The following proposed approaches were discussed:

- forbearance (i.e. no regulation);
- short-run marginal cost / long-run incremental cost pricing;
- retail-minus pricing; and
- benchmarking the change in access prices.

This Chapter of the Final Report outlines these proposed approaches and details the views of the parties in relation to the use of these approaches to determine access prices for GSM termination. In concluding it identifies those pricing methodologies which the Commission intends to assess the effects of against the legislative criteria outlined in Chapter 3 above.

## 6.1 Forbearance

Under a forbearance approach, access prices for GSM termination would be effectively set by the market using commercial negotiations. Such an approach could also be combined with on-going monitoring of access prices for GSM termination, to determine whether they move in line with the Commission's expectations (that is, that access prices should decline).

Some carriers have argued in their submissions to the Discussion Paper and Draft Report that the most appropriate regulatory response would be no response. That is, the Commission should not become involved in regulating access prices for GSM termination. In particular, the mobile carriers have all submitted that the mobile services market is sufficiently competitive to not require regulation.

> Telstra's view remains that the mobile industry is highly competitive and set to become more so. As a result, Telstra believes that regulation of mobile termination charges is unnecessary and potentially harmful to the long-term interests of end-users.[99]
>
> The Commission should allow the market to set the price of mobile termination. This will lead to the most efficient outcome and provide the greatest consumer welfare.[100]
>
> …it is incumbent on regulators to forbear from regulating unless it is demonstrated that the potential benefits of regulation outweigh the costs. In principal, this will be where competitive investment can overcome transitory market constraints and act to create and contest new market space...
>
> In essence, regulation should be reserved for cases where:

[99] Telstra submission to the Draft Report, p. 1.

[100] Cable & Wireless Optus submission to the Discussion Paper, p. 4.

> *effective markets cannot emerge in the medium to long term because of constraints controlled by or favouring inherited incumbencies;
>
> *markets are abused by a dominant player (in which case general competition law principles should be applied); and
>
> *government social objectives cannot be achieved by market forces alone (eg USO type arrangements).
>
> Plainly, none of the three situations described [above] is at play in the mobile market in Australia.[101]

> The Australian mobile services market is becoming increasingly competitive. In this environment it is inappropriate for fixed-to-mobile GSM termination charges to be regulated by a stringent price methodology.[102]

However, other carriers have submitted that the mobile services market and the fixed-to-mobile market are not sufficiently competitive and require regulation. In this regard they do not believe that forbearance is the appropriate pricing methodology.

> In the absence of any compelling evidence that would indicate the willingness of mobile networks to reduce wholesale rates of their own violation, it is apparent that only regulatory intervention will create change.[103]

## 6.2 Marginal/incremental cost pricing

### 6.2.1 Short-run marginal cost pricing

The short-run marginal cost of supplying the service is the change in cost from changing the amount supplied, given that the availability of at least one factor of production is fixed. Short-run marginal cost is limited to those costs which the firm would immediately avoid by reducing or abandoning output. In relation to GSM termination, the price would be set by reference to the marginal cost incurred by the access provider in terminating each call to a mobile user.

Initial discussions about determining access prices for GSM termination focused on a short-run marginal cost approach, arising from initial pricing recommendations by the Commission's consultants.[104]

Submissions from several carriers presented arguments as to why such an approach is not appropriate. Essentially the three established mobile carriers argued that pricing access to GSM termination at short-run marginal cost is inefficient because it does not allow for the recovery of fixed and common costs. Therefore a mobile carrier is not able to earn its cost of

[101] Vodafone submission to the Discussion Paper, p. 3.

[102] One.Tel submission to the Draft Report, p. 6.

[103] RSL COM submission to the Draft Report, p. 6.

[104] *Principles for determining access prices for Domestic GSM Terminating Access and Domestic GSM Originating Access services,* Australian Competition and Consumer Commission, December 1999, p. 12-13.

capital. In addition, it was submitted that pricing at short-run marginal cost would also impact on the incentives for investment in GSM (and substitute service) networks. Mobile carriers were also of the view that pricing at short-run marginal cost is a concern because it is likely to lead to an increase in mobile access service fees, with the effect of reducing mobile penetration.

Setting price equal to capacity-unconstrained short-run marginal cost may promote efficient usage of a service.[105] However, no allowance is made for what the economy gives up in keeping the productive capacity alive or in expanding that capacity. Under such an approach the incentives for providing infrastructure are removed, as the capital and operating costs of providing it are not met. Further, while it would be possible to vary the price in line with capacity constraints, this could result in large price fluctuations and potentially higher transaction costs for all parties.

In addition, short-run marginal cost pricing approaches do not take into account the costs incurred in the provision of a group of services (i.e. common costs). These costs are incurred if any one of the group of services is produced and are not avoided unless the production of all the services in the group ceases. A short-run marginal cost approach is, therefore, likely to yield access prices that are below those which would be set under a long-run marginal cost approach.

For these reasons, the Commission is of the view that it is more appropriate to consider a long-run incremental cost pricing approach, rather than a short-run marginal cost pricing approach, in determining the appropriate pricing principles for GSM termination.

### 6.2.2 Long-run incremental cost pricing

Long-run incremental cost pricing determines the change in cost given that all factors of production are variable. It has a number of interpretations according to the circumstances. The interpretation generally used by the Commission is the TSLRIC pricing approach. This approach can be understood by breaking it up into its components:

- 'total service' – it measures the cost of production of an entire service (or a production element) rather than the cost of a particular unit.[106] 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;

[105] By equating the marginal value to the user with what the economy gives up in supplying that unit.

[106] The TSLRIC of supplying a service can be expressed as the sum of the operating and maintenance costs, and the capital costs that the firm incurs in providing the service as a whole. *Operating costs* are the continuing operational costs of providing the service, including the labour and materials costs that are causally related to the provision of the service. *Capital costs* comprise the cost of capital (i.e., the opportunity cost of debt and equity used to finance the firm) and depreciation (i.e., the decline in economic value of assets) of capital that is specific to the production of the service.

- ‘long-run’ – it measures costs in the long-run. 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; and
- ‘incremental cost’ – it is a form of ‘marginal cost’ pricing, although not the more familiar ‘marginal cost’ of the change in cost incurred through a change in the *amount* of output produced. Rather, it refers to the change in cost from the two alternatives of producing or not producing at all.

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 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.

A long-run incremental cost pricing approach, and TSLRIC in particular, is generally preferred by the Commission for a variety of reasons. Essentially, an access price based on TSLRIC would be consistent with the price that would prevail if the access provider faced effective competition, and would usually best promote the long-term interests of end-users. It would:

- promote efficient entry and exit in dependent markets since prices are based on long-term costs;
- encourage economically efficient investment in infrastructure by providing for a normal commercial return on efficient investments in infrastructure;
- provide for the efficient use of infrastructure as access prices are based on the long-term value of the resources embodied in that service;
- provide incentives for access providers to minimise the costs of providing access by using best-in-use technology compatible with existing network design to measure cost;
- allow efficient access providers to fully recover the costs of producing the service, and promote the legitimate business interests of the access provider; and
- inhibit the access provider discriminating in favour of one access seeker over another (unless the discrimination is based on differences in costs).[107]

The Commission’s view, expressed in its *Access Pricing Principles*, is that in general access prices should be based on the TSLRIC of providing a declared service, although whether this

[107] *Access Pricing Principles, Telecommunications – a guide,* Australian Competition and Consumer Commission, July 1997, p. 28-30.

principle applies to a particular service will be determined on a case-by-case basis.[108] In general, it considers TSLRIC to be appropriate for services:

- that are well developed in a market and have established demand characteristics;
- that are necessary for competition in dependent (upstream or downstream) markets; and
- where the forces of competition or the threat of competition work poorly in constraining prices to efficient levels.[109]

Since releasing its *Access Pricing Principles* the Commission has considered the application of its preferred TSLRIC pricing approach on a case-by-case basis. For example, in the context of determining efficient costs for the Domestic PSTN Originating and Terminating Access Services the Commission considered it appropriate to use TSLRIC pricing. However, in the context of determining pricing principles for the Local Carriage Service, the Commission concluded that a retail-minus approach was more appropriate than TSLRIC.

In relation to using a TSLRIC approach to determine access prices for GSM termination there were differing views taken by the carriers in submissions to the Commission. Some carriers were in support of a TSLRIC approach stating:

- it best mimics the pricing outcome which would occur in a contestable market and is therefore the most appropriate benchmark; and
- it creates efficient investment incentives.[110]

In response to the Draft Report, where the Commission outlined its preliminary view that TSLRIC was not the appropriate pricing methodology for determining access prices for GSM termination, some carriers have further argued that:

- under the legislative criteria which the Commission must consider, TSRLIC is the most appropriate pricing methodology[111]; and
- TSLRIC modelling of a mobile network should not be as complex as modelling a PSTN network[112] because cable trench lengths do not need to be considered and estimation of the cost of capital should be easier to determine because there is a mobile only carrier.

However, other carriers opposed the use of a TSLRIC approach stating:

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108 *ibid.,* p. 27-30.

109 *ibid.,* p. 27-28.

110 AAPT submission to the Discussion Paper – associated paper *Pricing termination services* by Nina W. Cornell, p. 6 and PowerTel submission, p. 6.

111 RSL COM submission to the Draft Report, p. 7 and WorldxChange submission to the Draft Report, p.2.

112 AAPT submission to the Draft Report, p.13 and Primus submission to the Draft Report, p. 2.

- it is an inappropriate approach in a dynamic, changing industry where efficient investment is of paramount importance;
- the benefits of using such an approach are the greatest where there is no effective competition in the provision of the service; and
- using such an approach would be extremely costly, lengthy, adversarial and ultimately subjective and inappropriate for a dynamic and rapidly growing market.[113]

***Allocation of common costs***

As noted above, TSLRIC in its pure form is 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 TSLRIC. However, in practice, the Commission has also included a contribution to common (or 'indirect') costs when calculating cost-based prices (sometimes referred to as 'TSLRIC+').

The recovery of common costs is a fundamental dilemma of public utility pricing, as there is a tension between the efficiency of relating use prices to 'marginal cost' and the imperative of cost recovery. One way of meeting both objectives is by the use of two-part pricing with a component unrelated to use, and use charged at TSLRIC.[114] However, the use of two-part pricing for access pricing is problematic and this approach may create barriers to entry (due to the large non-use related charge, which results in falling average costs and potential disadvantages for small-scale entry).

As common costs are not directly attributable to the production of any one service, the allocation of these costs across services is somewhat arbitrary and there is a range of possible methods of allocating them. One commonly used approach is the 'equi-proportionate mark-up over directly attributable costs'. This involves measuring the directly attributable costs of each service within the group and allocating the common costs based on each service's proportion of the total directly attributable costs. This is the approach adopted by the Commission in its estimate of the efficient costs of Telstra's Domestic PSTN Originating and Terminating Services.[115]

[113] Vodafone submission to the Discussion Paper – associated paper *Regulation of GSM Termination Charges: Issues and Options*, Chongwoo Choe and Sisira Jayasuriya, p.12, Cable & Wireless Optus submission to the Discussion Paper, p. 68 and Telstra submission to the Discussion Paper – Response to the ACCC's Discussion Paper, p. 5.

[114] The Commission's consultants noted that in taking into account the investment costs faced by a mobile carrier, a two-part tariff could be used which set access prices for GSM termination equal to marginal cost and also had a fixed fee to reflect investment costs.

[115] The actual approach taken by the Commission under the ACCC-n/e/r/a PSTN cost model involves the allocation of three types of common costs:
- common capital costs;
- common operations and maintenance costs; and
- common indirect costs.

Another option for allocating common costs, which has specifically been raised in submissions, is the use of Ramsey pricing.[116] Under a Ramsey pricing approach, the common costs would be allocated in inverse proportion to the elasticity of demand for the services over which the common costs relate. That is, a greater proportional mark-up is allocated towards the service which is relatively price inelastic, and a lesser proportional mark-up towards the service which is relatively price elastic. This ensures that the distortions to demand for these services are minimised and that common cost contribution can be achieved with the least overall cost to economic efficiency. In practice there are substantial informational difficulties with applying Ramsey pricing, as elasticity estimates would need to be developed. Furthermore, getting the allocation wrong under a Ramsey pricing approach could be worse than using the equi-proportionate markup method.

## 6.3 Retail-minus methodology

Under a retail-minus approach, the access price would be determined by deducting from the retail price, for a given service, the retail costs of the access provider associated with providing that service. In this respect the Commission notes that, for the purpose of GSM termination, a retail-minus approach would be used to determine an access price that is a proxy for the cost of providing the service. This implicitly relies on some competition existing in the mobile market such that the access price is not inflated.

The Commission has indicated that when determining access prices for the Local Carriage Service in access disputes its preferred approach is likely to be the retail-minus pricing methodology. However, the application of a retail-minus approach in the context of determining an access price for GSM termination would be different to the way in which it would be applied to the Local Carriage Service. The Local Carriage Service is an end-to-end service and, as such, the access price can be determined by deducting only retail costs from the retail price of a local call. In contrast, for GSM termination the access price would be determined by deducting retail costs and transmission costs from, say, the retail price of a mobile-to-mobile call and then halving (or otherwise dividing) this figure.[117] This would provide an estimate of the costs associated with mobile origination and termination for provision of a mobile-to-mobile call; the estimate of the costs associated with GSM termination could be used to determine access prices for GSM termination.[118]

The third component, common indirect costs, is expressed as a percentage of capital and operations and maintenance costs. Common capital costs are allocated on a per line, per cable or per minute basis, depending on the asset concerned, while common operating and maintenance costs are determined as a percentage of capital costs for each equipment type.

[116] Cable & Wireless Optus submission to the Discussion Paper, p. 28-30 and Vodafone submission to the Discussion Paper, p. 27-28.

[117] The Commission understands that GSM termination may have additional costs of locating the mobile telephone and potentially extra switching stages. Therefore, it may be more appropriate to apply a different ration, such as a 40:60 ratio, to the retail price less retail/transmission cost figure, rather than halving.

[118] The Commission notes that these costs should be the same as when the GSM termination service is used to terminate a call that originates on a fixed line network.

In its submission to the Discussion Paper, Cable & Wireless Optus were initially supportive of a retail-minus approach stating it would minimise market distortions.[119] It submitted that a retail-minus approach would allow a reasonably efficient service provider to compete in the provision of fixed-to-mobile and long distance calls and that it would leave the 'efficient' recovery of fixed and common costs associated with a mobile network to the market. However, in its supplementary submission to the Discussion Paper, Cable & Wireless Optus moved away from supporting retail-minus pricing, preferring 'market-based pricing'.

AAPT noted in its submission to the Draft Report that a retail-minus approach may offer significant advantages over the Commission's proposed pricing methodology — retail benchmarking.[120] It did not, however, detail these advantages.

In its report *Regulating Mobile Operators*, Ovum noted that a retail-minus approach may be used for reducing access prices for mobile termination.[121] It considered such a methodology to be an indirect regulatory approach that is consistent with a policy of light-handed regulation. Ovum note that there are likely to be three phases associated with using a retail-minus approach. These are:

- before the retail-minus approach is adopted — retail prices will decline as costs decline (because of technology improvements, increased economies of scale and increasing competition). However, access prices will decline slowly (if at all) because of control over access and a lack of substitute services;
- the retail-minus approach is adopted — if there has been significant cross-subsidisation between retail prices and access prices, there may be a rise in retail prices and a corresponding reduction in access prices. The two prices will move towards each other, but access prices will remain higher reflecting its higher costs; and
- the retail-minus approach takes effect — the rate of decline for the retail prices and access prices are the same, driven by the extent of competition in the retail market. At this stage it is important to ensure that measures, such as mobile number portability, are in place to ensure the market becomes effectively competitive.

## 6.4 Benchmarking the change in access prices

Under a benchmarking approach the change in access prices for GSM termination could be determined by reference to two measures:

- best practice total factor productivity changes for the GSM termination service (i.e. use of a CPI-X price-cap); or

[119] Cable & Wireless Optus submission to the Discussion Paper, p. 70.

[120] AAPT submission to the Draft Report, p. 9.

[121] *Regulating Mobile Operators – The Road to Effective Competition*, Ovum, Volume 3: GSM Termination Rates, 2000, p. 4, 45.

- each mobile carrier's retail prices movements for the overall mobile package (subscription and outgoing call charges).[122]

Both of these approaches create a 'glide path' for the changes in access price. That is, they determine the change to access prices rather than independently pricing the service, as would occur for TSLRIC and to a lesser extent retail-minus pricing. The difference between the two approaches is the manner in which the change is determined.

### 6.4.1 Initial 'starting point'

A 'glide path' pricing rule is intended to effect future access price changes. However, it is still necessary to determine an initial 'starting point' from which to then benchmark the change in access price.

There are several possible 'starting points' which may be more or less appropriate, depending on which measure it is decided to benchmark against. The possibilities include[123]:

- the lowest current access price in the market;
- the weighted average access price for mobile-to-mobile termination;
- the weighted average access price for all mobile termination; or
- the current access price agreed, pending finalisation of access disputes.

In relation to these 'starting points' the Commission notes that there is little to choose between them from an economic perspective, except to the extent that the lowest of these prices will be likely closer to the actual costs of providing the service.[124]

In the Draft Report, the Commission proposed that under a retail benchmarking approach it would use the lowest current access price in the market. The primary reason for this was the Commission's concern that the other possible starting 'starting points' (such as a weighted average access price) might benefit the mobile carrier who had negotiated the highest access prices. Cable & Wireless Optus was not in favour of this starting point, noting that existing access prices allow for:

- (efficient) price discrimination between carriers based on economies of scale; and for

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[122] The Commission notes that benchmarking could also occur with respect to international prices for GSM termination. However, this is not considered appropriate as generally overseas prices are also subject to the same market conditions of control over access and consumer ignorance.

[123] A further 'starting point' raised in submissions to the Draft Report is one of internal transfer access prices and 'cost' based access prices. However, the Commission understands that the mobile carriers do not have useful internal transfer price information that would allow for such a 'starting point' to be used. Cost-based approaches are considered in section 6.3 above.

[124] Some submissions to the Draft Report noted that using any of these access prices as a 'starting point' would not be adequate as they potentially lock in inefficiencies generated by mobile carriers' ability to set access prices above cost.

- carriers to differentiate themselves by offering lower subscription and higher access prices for GSM termination.[125]

The current pattern of access prices does not appear to support these views, with no consistent relationship between carrier size (in terms of traffic volume) and access prices. Similarly, no one access provider appears to offer uniformly higher or lower termination prices. The Commission therefore believes that in this instance it may be preferable for all access seekers to be offered the same (non-discriminatory) starting price by access providers.

Using the weighted average access price as the 'starting point' (for mobile-to-mobile termination in particular) is not without its advantages. Similar to the lowest starting price, it would provide for non-discriminatory access prices, i.e. that access prices for GSM termination are not priced lower when calls are originated on mobile networks. Some submissions noted that such a 'starting price' was preferred (as compared to the lowest in the market).[126]

Using both the lowest and weighted average access prices as 'starting points' relies on access seekers being informed of all access prices negotiated in the mobile market in order to facilitate commercial negotiations. It is unlikely, however, that access seekers will be aware of specific access prices other than those they negotiate, although they may be broadly aware of other prices. The Commission would therefore need to consider releasing information about the lowest access price or weighted average access price, as the case may be. This matter is discussed further in Appendix E.

Using the current access price agreed, pending finalisation of access disputes, as a 'starting point' may be more conducive to commercial negotiations — it is an access price that individual access seekers and mobile carriers (obviously) know. Against this, the Commission is concerned that some carriers in dispute appear to still be paying the access price in existence at the time they notified the Commission of the access dispute. These access prices are substantially higher than those prices other access seekers (who are not in dispute) have negotiated. Adopting the existing access price as the starting price may therefore continue to reward those carriers who have been unwilling to negotiate lower access prices.

On balance, the Commission concludes that the it would be preferable for the 'glide path' to start from the lowest access price currently in the market.

The Commission recognises that there is a danger that the lowest access price could be an 'outlier', in the sense of not being representative of the majority of access agreements. The Commission is minded of this and will ensure that the lowest access price is, in fact, a 'normal' or representative access agreement (i.e. without any special conditions attached).

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[125] Cable & Wireless Optus submission to the Draft Report, p. 37.

[126] Telstra submission to the Draft Report, p. 3 and Cable & Wireless Optus submission to the Draft Report, p. 38.

### 6.4.2 Benchmarking against total factor productivity changes

Benchmarking the change in access prices for GSM termination against 'best practice' total factor productivity (TFP) changes (i.e. the X factor in a CPI-X price-cap) would allow access prices to reflect productivity improvements in the provision of the service. This would ensure that any productivity gains, generated by technical progress, economies of scale or scope and managerial improvements, are passed on to access seekers and ultimately end-users. Using a 'best practice' measure ensures that changes in access prices reflect changes in the efficient costs of providing the GSM termination service.

In using such a measure there is an issue of whether the total factor productivity movements should be historical or prospective. A weakness in using historical productivity movements is that the productivity gains may have represented 'best practice' at the time they were achieved, but may not necessarily be the case now or in the future. For this reason, the Commission considers that it may be more appropriate to use estimated prospective total factor productivity movements if this pricing approach is adopted.

Telstra, although supporting a forbearance approach, submitted that the Commission should use a benchmarking approach, where the change in access prices is linked to productivity changes (forecast reductions in unit cost), if it is to regulate GSM termination.[127] In particular, Telstra submitted that such an approach has fewer implementation difficulties than the Commission's proposed pricing methodology and provides efficient incentives that are consistent with maximising the LTIE. It noted that the change in the access price for GSM termination would be a function of the growth in GSM traffic. Furthermore, an initial 'starting point' was proposed of the average existing access price for GSM termination in relation to fixed-to-mobile calls levied by Telstra, Cable & Wireless Optus and Vodafone.

In the *Review of Price Control Arrangements* the Commission noted that the determination of the value of X in a CPI-X per cent price cap formula can be a particularly complex task.[128] It requires consideration of a range of factors, including past and potential productivity growth of the carrier (including economies of scale and scope), past and potential economy-wide productivity, business plans of the carrier, investment requirements and the economic and required rates of return on investment and forecasts of traffic growth. International benchmarks are also a relevant point of comparison that may need to be considered. For these reasons the Commission considers that implementation of such a benchmarking approach is likely to be more involved than the retail benchmarking approach outlined below. This is not to suggest that the retail benchmarking approach does not involve complexities of implementation as well – comments on the implementation of the benchmarking approach are left to Appendix E.

In its submission to the Draft Report, One.Tel noted that it agreed with the Commission's view that there were some difficult issues involved in the measurement of productivity

[127] Telstra supplementary submission to the Discussion Paper, p. 2 and submission to the Draft Report, p. 4.

[128] *Review of Price Control Arrangements*, Australian Competition and Consumer Commission, February 2001, p. 55.

gains.[129] In addition, it noted its concerns with the use of a prospective productivity measure as compared to a historical measure.

### 6.4.3 Benchmarking against the retail price movements for the overall mobile package

Benchmarking the change in access prices for GSM termination against each mobile carriers' retail price movements for the overall mobile package (retail benchmarking) would ensure that the provision of the GSM termination services at least mirrors the increasingly competitive retail element of the mobile services market, over a period of time. In effect, it ensures that a relevant competitive discipline is placed on the access price for GSM termination.

The manner in which each mobile carrier's retail price movements for the overall mobile package would be determined was not explored in the Draft Report. However, some submissions in response to the Draft Report commented on the difficulties that were likely to be encountered in determining these movements. In particular they noted the difficulties associated with taking into account the large number of product offerings included in the overall mobile package, and any price substitutes, as well as the difficulties associated with taking into account changes in quality of these product offerings.[130]

The Commission considers that if a retail benchmarking approach was adopted it is likely a yield method of calculating retail price movements (for each mobile carriers overall mobile package) would be most appropriate. This involves determining retail prices by dividing a mobile carrier's total mobile revenue from retail activities[131] by the total number of its mobile minutes in a given period. In this way a revenue per minute figure (a proxy for average prices) for a mobile carrier is derived that can be compared between periods in order to determine the retail price movements.

Using the yield method provides the following advantages:

- the information required to calculate a revenue per minute figure is relatively easier to obtain than the information that would be required with more detailed approaches;
- as such the approach appears to be relatively easier to update on a regular basis and in a more timely fashion that other approaches; and
- it takes into account free minutes provided as a part of the overall retail package.

In its submission to the Draft Report, Telstra suggested the use of a yield method should the Commission decide to adopt a retail benchmarking approach. It submitted that changes in average mobile revenue for each carrier could make an appropriate deflator for access prices

[129] One.Tel submission to the Draft Report, p. 10.

[130] Telstra submission to the Draft Report, p. 3-4, Cable & Wireless Optus submission to the Draft Report, p. 35-36, Vodafone submission to the Draft Report, p. 20 and Primus submission to the Draft Report, p. 4.

[131] This is likely to include revenue from mobile access charges as well as from outgoing call charges. Further discussion in relation to this issue is provided in Appendix E.

for GSM termination.[132] It noted, however, that significant implementation difficulties would still be encountered, such as how to take into account the various additional services that are provided within the overall mobile package, e.g. messagebank and SMS. A further difficulty it noted was how revenue from mobile services supplied as a part of a bundle would be isolated. The Commission examines some of these implementation issues in Appendix E.

Should the Commission adopt a retail benchmarking approach it considers that a monitoring program will form an important component of the approach. In this respect, a retail benchmarking approach will involve the following:

- monitoring each mobile carriers' retail price movements for the overall mobile package using the yield method (and publishing such information) to facilitate ongoing commercial negotiation; and
- monitoring changes in retail prices for fixed-to-mobile calls and access prices for GSM termination to determine whether there is any anti-competitive behaviour.

## 6.5 Conclusion

In light of the above discussion, the Commission considers that there are essentially three pricing methodologies which are appropriate to assess the effects of against the legislative criteria outlined in Chapter 3 above. These are:

- forbearance;
- the cost based approaches of TSLRIC and retail-minus (i.e as a proxy for cost); and
- retail benchmarking.

The Commission does not intend to assess short-run marginal cost pricing against the legislative criteria. In terms of cost based approaches, the Commission considers that TSLRIC is a better pricing benchmark than short-run marginal cost pricing in this instance. In this respect it notes that while a capacity-unconstrained short-run marginal cost price may appear to be efficient in the short-run it does not provide for the recovery of fixed and common costs. In addition, while it would be possible to vary the price in line with capacity constraints, this could result in large price fluctuations and potentially higher transaction costs for all parties. Accordingly, the Commission considers that, in this case, further analysis of the short-run marginal cost pricing approach against the legislative criteria is not warranted.

Further, the Commission does not intend to assess the benchmarking against total factor productivity approach against the legislative criteria. In terms of benchmarking approaches, the Commission considers that in an increasingly competitive mobile market a retail benchmarking approach is more appropriate. This is because it will reflect productivity gains and possibly reductions in excess profits as a result of competitive pressures at play in the market. Benchmarking against total factor productivity changes, however, will only reflect productivity gains. In addition, the Commission considers that a retail benchmarking

[132] Telstra submission to the Draft Report, p. 3-4.

approach is likely to be less difficult to implement (even given its associated implementation difficulties).

# 7. An assessment of pricing methodologies against the legislative criteria

The following Chapter of the Final Report provides the Commission's views on the pricing principles it will use in making determinations on access disputes about the GSM termination service, having regard to the legislative criteria in section 152CR of the Act. Background to the legislative criteria, and the Commission's interpretation of them, is provided to inform the Commission's discussion of the various approaches. The implications of forbearing from access price regulation, the use of cost based pricing approaches and the use of the retail benchmarking approach are then discussed.

Consistent with its discussion in Chapter 4, the following assessment of the appropriate pricing approach, if any, only concerns fixed-to-mobile call termination pricing.

## 7.1 Legislative criteria

As noted in Chapter 3, the legislative criteria in section 152CR of the Act require the Commission to take into account the following matters when making a final determination in the context of an arbitration:

(a) the long-term interests of end-users;

(b) legitimate business interests of the access provider;

(c) interests of the access seeker;

(d) the direct costs of providing access to the declared service;

(e) the value to a party of extensions, or enhancements of capability, where the cost is borne by someone else;

(f) the operational and technical requirements necessary for the safe and reliable operation of a carriage service; and

(g) the economically efficient operation of a carriage service.

The Commission can also take into account other matters it considers relevant.

The legislative criteria have been interpreted from the perspective of access pricing. Further discussion can be found in the Commission's *Access Pricing Principles*.[133]

The Commission notes criterion (c), the interests of access seekers, will generally be promoted by access pricing principles that promote competition and efficient investment. These objectives are also considered as part of the long-term interests of end-users, as outlined below. Criteria (e) and (f) are of greater relevance to particular arbitration disputes

[133] *Access Pricing Principles, Telecommunications – A Guide,* Australian Competition and Consumer Commission, July 1997.

than to general GSM termination pricing principles. To the extent that criterion (g) is not covered by the discussion under the LTIE criterion, it will likewise generally be a matter for specific arbitrations. Therefore, the discussion below will focus on criteria (a), (b) and (d).

There are trade-offs between these criteria. For example, an access price that promotes the efficient use of infrastructure in the short term may, in some cases, not encourage efficient investment in infrastructure and may not be consistent with the legitimate business interests of the access provider. The Commission must balance the outcomes of different regulatory approaches using the legislative criteria.

The Commission's general approach to the application of the key criteria is now discussed.

### 7.1.1 General principles of the long-term interests of end-users

The objective of Part XIC is to promote the long-term interests of end-users of carriage services or of services provided by means of carriage services (section 152AB).

To consider the likely impact on the LTIE of particular terms and conditions in a determination, the Commission must have regard to the extent to which the determination is likely to result in the achievement of the following objectives:

- promoting competition in markets for carriage services and services supplied by means of carriage services;
- achieving any-to-any connectivity, for carriage services involving communications between end-users; and
- encouraging the economically efficient use of, and economically efficient investment in, infrastructure by which carriage services and services provided by means of carriage services are supplied.

The Commission has published a guideline explaining what it understands is meant by the phrase 'long-term interests of end-users' in the context of its declaration responsibilities.[134] A similar interpretation would appear to be appropriate in the context of arbitrating an access dispute.

***Promoting competition***

Declared services tend to be inputs used in the supply of downstream telecommunications (and other) services to end-users. Access to these inputs, or improving the terms and conditions on which they are supplied, can promote competition in markets for these downstream services by creating conditions conducive to the entry of efficient firms. Sub-section 152AB(4) requires the Commission to have regard to the extent to which the pricing principles will remove obstacles to end-users of listed services gaining access to listed services.

[134] *Telecommunications services — Declaration provisions: a guide to the declaration provisions of Part XIC of the Trade Practices Act,* Australian Competition and Consumer Commission, July 1999.

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

Any-to-any connectivity is the ability of end-users to communicate with each other, irrespective of the network to which they are connected. It benefits end-users by allowing end-users of one network to communicate with end-users of other networks.

***Encouraging efficiency***

Economic efficiency has three interdependent elements:

- productive efficiency — 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 — 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; and
- dynamic efficiency — 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.

Sub-section 152AB(6) of the Act requires that the Commission have regard to a number of specific matters in applying this criterion:

- the technical feasibility of supplying and charging for particular services;
- the legitimate commercial interests of the supplier or suppliers, including the ability of the supplier to exploit economies of scale and scope; and
- the impact on incentives for investment in infrastructure.

Technical feasibility would appear to be more relevant to declaration or revocation of a service, than pricing principles.

### 7.1.2 General principles of legitimate interests of the access provider

Regard to the legitimate business interests of access providers requires an access price that at least provides a normal commercial return on prudent investment. However, it is unlikely that the criterion would extend to achieving a sustained higher than normal commercial return through the use of non-transitory market power.[135]

### 7.1.3 General principles of the direct costs of providing access

Direct costs are those costs necessarily incurred, or caused by, the provision of access. The Commission noted in the *Access Pricing Principles* that the inclusion of this criterion appeared to preclude arguments that access providers should be compensated for the impact

[135] *ibid.*, p. 9. The Commission notes that above-normal returns may be justified on other grounds, such as innovation or cost-cutting measures that are unrelated to market power.

of competition on downstream revenues. That is, a loss of retail revenues through the introduction of retail competition should not be recovered through access prices.

### 7.1.4 Application of the criteria

The Commission now examines the impact of the broad pricing approaches considered for the GSM termination service on the criteria discussed above. Following from Chapter 6, these three approaches are:

- forbearance;
- a cost-based approach; and
- a retail benchmarking approach.

## 7.2 Forbearance

The Commission should not regulate access prices where the forces of competition already effectively operate in relation to those prices. The relevant explanatory memorandum, in relation to Part XIC of the Act, states:

> It is not intended that the access regime embodied in this Part impose regulated access where existing market conditions already provide for the competitive supply of services.[136]

The Commission noted in the Draft Report and in Chapters 4 and 5 of this Final Report that it considered the competitive forces on GSM termination were relatively weak at this point in time, although the competitiveness of the overall mobile market will also be relevant to any consideration of whether forbearance is an appropriate pricing approach. The impact of forbearance on the legislative criteria in section 152CR is outlined below.

### 7.2.1 Promoting competition in the markets for listed services

The forbearance approach would mean that access prices for GSM termination are left to commercial negotiations between mobile carriers and access seekers. The Commission considers that the effect on competition in downstream markets, under all of the proposed pricing approaches, will be determined by two factors:

- the extent to which integrated mobile carriers are able to (inefficiently) price discriminate to internally provide the service to themselves at a price below the price charged to access seekers for that same service; and
- the extent to which the pricing approach lowers access prices for the GSM termination service to reflect more efficient pricing.

The Commission has particular concerns with the potential for anti-competitive pricing under a forbearance approach. Given the Commission's view that access prices are currently above-cost, there is the potential for integrated mobile carriers to engage in anti-competitive

[136] Explanatory Memorandum for the *Trade Practices Amendment (Telecommunications) Bill 1996*.

pricing in the fixed-to-mobile market. Specifically, if an integrated carrier charged itself lower internal access prices for GSM termination than it charged to fixed competitors, then it would be able to prevent the entry of efficient competitors into the fixed-to-mobile market.

The Commission notes that even if the overall mobile services market becomes more competitive, the opportunities for such anti-competitive conduct may not be diminished. An integrated carrier could charge itself lower internal transfer prices (reflecting the actual costs of supply) for GSM termination and then discriminate between 'on-net' and 'off-net' fixed-to-mobile calls to leverage this advantage. In this way, an integrated carrier could ensure that GSM termination price reductions are only passed to its customers and do not benefit users of other fixed networks. This could have the effect of restricting competition for equally or more efficient competitors in the downstream market. In the extreme, it may foreclose the fixed-to-mobile market to carriers who do not own mobile networks.[137]

Rather than relying on the provisions of Part XIC to address these problems, it is possible that the Commission could instead rely on the use of Part XIB (relating to anti-competitive conduct). Such an approach may be considered to more directly address the problem as it would focus on specific firms who had engaged in that conduct, rather than by broadly reducing access prices as the use of Part XIC would likely do. The Commission needs to weigh this against the benefit of lower access prices encouraging more efficient entry and exit decisions in the downstream (fixed-to-mobile) market.

### 7.2.2 Encouraging efficiency in use of, and investment in, infrastructure by which listed services are supplied

#### *Productive efficiency*

The Commission considers that there are strong incentives for firms to be productively efficient in the mobile market. Mobile carriers have strong incentives to produce at low cost (given carriers can capture the resulting higher profits). The Commission therefore believes that forbearing from regulation is unlikely to have a major impact on the promotion of productive efficiency.

#### *Allocative efficiency*

As noted in Chapter 4, the current lack of effective competition in the supply of the GSM termination service appears to lead to higher prices for fixed-to-mobile calls than would be justified by looking at the costs of supply for the larger carriers. Depending on the level of retail mobile costs and prices, this suggests that there may currently be either:

[137] The Commission notes increasing moves by Telstra to price differentiate between 'on-net' and 'off-net' fixed-to-mobile calls in its recent changes to business pricing. While not necessarily implying anti-competitive behaviour, the Commission is concerned that prices for on-net fixed-to-mobile calls are approaching the access price of termination (one element of the fixed-to-mobile call) charged to access seekers. See media release, *Telstra introduces new pricing structure for business services*, May 11, 2001 at www.telstra.com.

- allocative inefficiencies caused by the cross-subsidisation of mobile phone subscribers by fixed phone subscribers (if retail prices are below long-run incremental cost); or
- allocative inefficiencies caused by excess profits being earned by (larger) carriers (if retail prices are above long-run incremental cost).

The Commission is aware that carriers have consistently argued that there is no cross-subsidisation between mobile and fixed users and no pricing of retail services below cost. However, the Commission's view that GSM termination is priced above cost effectively supports one of the two cases. The Commission therefore considers that reductions in GSM termination prices are likely to improve allocative efficiency. It is recognised that this is complicated by possible network externalities (in that external benefits accrue to fixed and mobile subscribers as mobile penetration increases), and the desire by carriers to allocate relatively more common costs to the GSM termination service.[138]

***Dynamic efficiency***

There has been some debate over whether current access pricing is likely to lead to 'over-investment' (inefficient build / buy decisions) by access providers and access seekers in mobile network infrastructure. This argument reflects concern that fixed subscribers may effectively cross-subsidise mobile subscribers by paying inflated prices for the GSM termination service (through payment for fixed-to-mobile calls). It could be argued that this additional revenue allows mobile carriers to reduce the price of mobile subscription, to a level greater than would be possible if the mobile infrastructure was provided on a 'stand-alone' basis.[139]

### 7.2.3 Legitimate business interests

The Commission notes that the forbearance approach allows mobile carriers, at a minimum, to achieve a commercial return on their investments. However, as noted in previous chapters, there is a concern that the larger mobile carriers are earning excessive returns on their mobile investments. While the Commission recognises that the opportunity for excessive returns is generally diminishing over time as competition intensifies between the mobile carriers, the concern remains that integrated carriers may be able to leverage their ability to set above-cost termination prices into the fixed-to-mobile market.

[138] The Commission has undertaken modelling work similar to that submitted by Cable & Wireless Optus and Frontier Economics looking at the benefits of reductions in termination (and hence fixed-to-mobile) prices (see Cable & Wireless Optus submission to the Discussion Paper, p. 17). The Commission considers that the Cable & Wireless Optus results rest heavily on neither fixed-to-mobile nor subscription prices being above stand-alone cost or below incremental cost, and there being no excess profits earned from the two markets overall. However, once these assumptions are relaxed, allocative efficiency gains are likely from lower GSM termination prices, even when incorporating a 'subscription externality'.

[139] That is, if the mobile network was provided without any connectivity to the fixed network (and therefore only provided mobile-to-mobile calls).

### 7.2.4 Direct costs of providing access

This criterion implies that access prices should not be inflated to a level that exceeds the stand-alone cost of providing the service. As noted in Chapter 4, the Commission is concerned that totally forbearing from regulation would be inconsistent with this criterion.

## 7.3 Cost-based approaches

In Chapter 6, the Commission noted its general preference for the use of a cost-based approach to access pricing, and, in particular, the use of TSLRIC-based pricing. For the purpose of the pricing principles, the retail-minus methodology has also been included in the category of cost-based approaches, as it is intended to provide a proxy for cost in this instance. Cost-based approaches are analysed together here because it is believed that these approaches have similar (although not identical) consequences for the long-term interests of end-users.

In general, the promotion of competition and efficient investment for declared services will be achieved by TSLRIC pricing, as outlined in the Commission's telecommunications *Access Pricing Principles*, and discussed in Chapter 6 of this paper. In particular, TSLRIC pricing will also decrease the potential for anti-competitive conduct, by ensuring that the access provider and access seeker face the same input costs in downstream markets.

A retail-minus methodology uses an access price determined by deducting from the retail price, for a given service, the retail costs of the access provider associated with providing that service. This approach relies on some competition in the retail market[140] such that the resulting access price will not be inflated – in this instance, it has been proposed that the price of a mobile-to-mobile call (which entails the provision of the GSM termination service) be used.

The Commission noted in the Draft Report, and previously in the *Access Pricing Principles*, that there may be circumstances where a cost-based approach, and in particular a TSLRIC approach, is not appropriate for the pricing of a declared service. In the *Access Pricing Principles*, the Commission noted that it will consider whether to apply TSLRIC pricing to particular declared services on a case-by-case basis. In general, the Commission considers it appropriate to use TSLRIC pricing to determine access prices for services:

- that are well developed in a market and have established demand characteristics;
- where the forces of competition or the threat of competition work poorly in constraining prices to efficient levels; and
- that are necessary for competition in dependent (upstream or downstream) markets.[141]

[140] Or that retail prices are regulated to efficient levels.

[141] *Access Pricing Principles, Telecommunications – a guide,* Australian Competition and Consumer Commission, July 1997, p. 27-28.

In the Draft Report, the Commission considered that not all of these conditions were met and hence a TSLRIC-based price was not to be preferred. In response to the Draft Report, some carriers submitted that these conditions were met. In particular it was noted that the forces of competition work poorly to constrain access prices for GSM termination (as a result of control over access and consumer ignorance) and that they are necessary for competition in the downstream fixed-to-mobile market.[142]

In light of these submissions the Commission has further considered both the principles and practical aspects of implementing a cost-based approach to the GSM termination service.

### 7.3.1 Promoting competition in the markets for listed services

In the downstream fixed-to-mobile market, the Commission considers that the significant competitive benefit from the use of a cost-based approach comes from the reduced likelihood of anti-competitive pricing, rather than from lower access prices *per se*. It has been noted that the fixed-to-mobile market is subject to limited competition in the supply of wholesale inputs (fixed origination and mobile termination) but greater competition with respect to the resale of those inputs as a retail product. This suggests that lower access prices for GSM termination, a key wholesale input, are likely to be, at least partly, passed through into lower fixed-to-mobile prices.

The Commission has previously noted that a TSLRIC-based access price inhibits the access provider discriminating in favour of one access seeker over another (unless based on differences in costs).[143] The Commission continues to favour this approach to prevent anti-competitive access pricing in the downstream markets, and hence sees advantages in its application in this instance.

In the upstream mobile services market, however, the impact of implementing cost-based pricing on competition (and therefore efficiency) could be substantial:

- cost-based pricing may only be able to partially replicate the outcomes likely to be observed in a market with effective competition, particularly one with increasing penetration levels. To the extent that the mobile carriers increase their subscription prices in response to regulated lower access prices, the effect on competition in the mobile services market may be minimal. However, carriers have argued that there is a risk that if the regulated access price is cost-based, it may reduce the market size and force carriers out of the market.[144] This might occur if the cost-based price did not allow for an efficient allocation of common costs or an allowance for network externalities; and

[142] AAPT submission to the Draft Report, p. 10-12, Macquarie Corporate submission to the Draft Report, p. 1, Primus submission to the Draft Report, p. 2, WorldxChange submission to the Draft Report, p. 1-2.

[143] *Access Pricing Principles, Telecommunications – a guide,* Australian Competition and Consumer Commission, July 1997, p. 37.

[144] Cable & Wireless Optus submission to the Draft Report, p. 27.

- if using TSLRIC, the Commission would need to consider how to model different mobile networks and what is 'best-in-use' technology. If the Commission was minded to model only one network, the decision as to which network to model may be particularly problematic, with three large existing GSM networks. Adjustments to a base model also may be required to reflect the different circumstances of carriers.[145]

It is noted that some submissions to the Draft Report submitted that the difficulty associated with using TSLRIC should not be overstated. In particular it was submitted that TSLRIC modelling of a mobile network may be more straightforward than for a PSTN network, and that as the three larger networks are well developed, the cost differences between the networks are unlikely to be significant.[146] Further, AAPT submitted that if estimating TSLRIC is difficult, the Commission should use suitable 'proxy' measures to provide interim prices while the correct TSLRIC price is determined.[147]

There is a further risk in using cost-based pricing. The rapidly changing nature of the market means that excessive pricing problems may only be transitory, particularly as any TSLRIC modelling would require a lengthy process before a final access price could be determined (this would not be as great a concern if retail-minus was used). Changes might occur through ordinary market developments affecting the extent of control-over-access (e.g. increased use of closed user groups) or through the impact of 'structural' solutions to address the consumer ignorance problem (discussed in Appendix D). The Commission intends to closely monitor increases in competition for the supply of GSM termination and the extent of any structural change which promotes consumer awareness. This will inform the Commission's considerations of the benefits of the application of cost-based pricing on competition in the future.

### 7.3.2 Encouraging efficiency in use of, and investment in, infrastructure by which listed services are supplied

***Productive efficiency***

As discussed under the forbearance approach, the Commission believes that existing incentives for productive efficiency are relatively strong given the ability of firms to claim resultant higher profits. This reduces one of the strong advantages of a forward-looking cost-based approach – that it ensures productive inefficiencies (such as outdated equipment, inefficient network design or overstaffing) are not entrenched into access prices.

***Allocative efficiency***

In principle, the Commission believes that a cost-based approach such as TSLRIC has the potential to improve the efficiency of use of the mobile infrastructure. Aligning access prices

[145] For example, the Commission would need to adjust for scale effects between the different carriers, which substantially affect the efficient costs of providing the GSM termination service. It might imply that carriers charge markedly different prices for the service.

[146] AAPT submission to the Draft Report, p. 13, Primus submission to the Draft Report, p. 2-3.

[147] AAPT submission to the Draft Report, p. 13.

with cost should ensure that the price of fixed-to-mobile services more accurately reflects the value of resources given up in the production of the service.

However, in practice, the Commission noted in the competition section that there are a number of potential problems with the use of a cost-based approach, such as TSLRIC, which may reduce allocative efficiency gains from the adoption of a cost-based approach. While the Commission believes this should not preclude the application of TSLRIC or retail-minus pricing, it suggests that the Commission should only use regulation of this type when the benefits of doing so are clear. At this stage, the Commission does not consider that allocative efficiency gains are likely to be sufficient to justify cost-based regulation.[148]

***Dynamic efficiency***

As noted under the forbearance approach, there are questions as to whether current access prices are likely to provide ongoing incentives for dynamic efficiency. However, there are similar questions that arise under a cost-based approach. The Commission expects that while cost-based prices in general allow for a normal commercial return on prudent investments, there is the potential for incorrect application of a cost-based methodology to be damaging. There is extensive investment in new infrastructure expected in the mobile telecommunications sector over the next few years. Hence, the risks to any new investment must be weighed against the expected benefits from the cost-based intervention.

### 7.3.3 Legitimate business interests

The *Access Pricing Principles* note that the access provider should be allowed to recover a commercial return on prudent investment. In general, the use of a cost based price (such as TSLRIC) allows a fully efficient access provider to recover the costs of producing the service. However, in this instance the Commission has concerns that imposing a view of common cost recovery (between originating and terminating services) could potentially restrict mobile carriers' ability to recover a commercial return. That is, if it is more efficient that more common costs should be attributed to the termination service, then imposing a different allocation method could reduce the market size and hence carriers' prospects of recovering commercial returns.

### 7.3.4 Direct costs of access

It has been noted by access seekers in submissions that the legislative criteria require the Commission to take into account the direct costs of providing access to the access seeker.[149] While the Commission accepts that a cost-based price may therefore better meet this

[148] As noted in footnote 138, the Commission has undertaken modelling of potential efficiency gains from reductions in wholesale termination and fixed-to-mobile prices. While it is noted that allocative efficiency gains can be generated from this modelling (particularly if carriers' do not recover all of the revenue loss from lower termination prices), the magnitude of these benefits does not currently support cost-based pricing purely on these grounds.

[149] AAPT submission to the Draft Report, p. 15.

particular criterion, the Commission notes it must have regard to the range of legislative criteria in arbitrating access disputes.

## 7.4 Retail benchmarking approach

As discussed in Chapter 6, the Commission envisages that a retail benchmarking approach will incorporate several features:

- a starting access price of the lowest existing commercially-negotiated price currently in the market;
- an expectation or requirement that access prices for GSM termination will fall at least at the same rate as retail prices; and
- monitoring of retail prices to facilitate ongoing negotiation and determine whether there is any anti-competitive behaviour.

### 7.4.1 Promoting competition in the markets for listed services

As noted in the previous Chapter, the Commission believes that the extent to which competition will increase in the downstream fixed-to-mobile market pricing will largely depend on the effect of the pricing principle on the ability of integrated carriers to inefficiently price discriminate. In this regard, the benchmarking approach may be favourable to the promotion of competition as it is likely to reduce the gap between the price and cost of GSM termination, hence reducing the opportunity for anti-competitive pricing.

However, the retail benchmarking approach is likely to have substantially less impact than a cost-based price, at least initially. Therefore, the Commission would need to monitor the market to determine whether any carriers contravene the anti-competitive conduct provisions of the Act. Monitoring of fixed-to-mobile and access prices for GSM termination would also be proposed to determine whether competition increases for the GSM termination service, and whether lower access prices are passed through into fixed-to-mobile prices.

The Commission considers that the retail benchmarking approach has the advantage of being relatively easy to implement and is amenable to commercial negotiation. It also reduces opportunities for discriminatory pricing over time, yet provides carriers with (some) pricing flexibility and is therefore unlikely to stifle innovation.

In the upstream market, the possibility has been raised (and was considered in the Draft Report) that a benchmarking approach could provide a disincentive for mobile carriers to compete in the upstream mobile market.[150] This is because retail prices become linked to wholesale prices, and a carrier considering changing retail prices would also need to consider the effect on GSM termination revenues. While the Commission recognises this disincentive, the result (retail and access prices moving in line) is not necessarily inefficient nor a disincentive to compete. This is discussed further below.

[150] Cable & Wireless Optus submission to the Draft Report, p. 31-34, One.Tel submission to the Draft Report, p. 9-10, and Telstra submission to the Draft Report, p. 4.

### 7.4.2 Encouraging efficiency in use of, and investment in, infrastructure by which listed services are supplied

***Productive efficiency***

Similar to the discussion of the forbearance and cost-based pricing approaches, the Commission does not believe that the retail benchmarking approach would significantly alter existing incentives for productive efficiency, given the ability of mobile carriers to capture higher profits from lower-cost production.

***Allocative efficiency***

To the extent the Commission will not substantially reduce the starting price, there will be minimal allocative efficiency gains initially. This was raised by some service providers in their submissions to the Draft Report. In particular they were concerned that even the lowest access price in the market would build in existing inefficiencies, as a result of the relatively weak competitive forces on GSM termination.[151]

The Commission considers that the proposed retail benchmarking approach will likely improve allocative efficiency over time if:

- there is increasing competition in the retail element of the mobile market; and
- retail and termination costs move in similar ways.

The benchmarking approach generates efficiency gains by using a proxy for the overall competitive pressure and efficiency improvement in the mobile sector – the price changes in the retail element of the market. That is, the approach relies on firms competing by lowering retail (and hence termination) charges towards cost, even if this has a negative effect on industry profitability.

The benchmarking proposal is also considered to be an appropriate response in this instance because the costs of GSM termination are expected to fall in line with the costs of GSM origination (a large component of total retail costs), as they are both effectively provided using the same infrastructure. Consequently, linking the price changes of retail services, which were considered to be set on a more competitive basis, to termination services is also a method of ensuring productivity changes are passed on (and thereby promoting allocative efficiency).[152]

The costs of the pricing intervention, in terms of resource costs as well as costs from possible inaccurate implementation, are also relevant. The Commission has noted in Chapter 6 that it

[151] AAPT submission to the Draft Report, p. 14, PowerTel submission to the Draft Report, p.3, Primus submission to the Draft Report, p. 3, and WorldxChange submission to the Draft Report, p.4.

[152] To the extent that retail and access prices would have fallen at the same rate in the absence of regulation, the retail benchmarking approach will only act as 'safety net' to ensure this occurs. However, to the extent that retail prices would otherwise have fallen faster than access prices, then allocative efficiency is likely to be improved.

proposes to use a methodology for measuring retail price changes which is relatively straightforward, as the benefits from greater precision are unlikely to outweigh the higher implementation costs. The flexibility of the approach also reduces the risk of inaccurate implementation compared to more 'heavy handed' pricing approaches.

In summary, while the Commission believes that allocative inefficiencies deriving from any excess profits being earned in this market will be decreased by increasing retail competition in the longer term, the benchmarking methodology also ensures that allocative efficiency losses caused by pricing GSM termination above cost are also reduced.

***Dynamic efficiency***

The Commission considers that the retail benchmarking approach presents similar dynamic efficiency issues to those discussed under forbearance, as the 'starting price' adopted is similar. However, the retail benchmarking approach is expected to result in faster access price falls than under forbearance, and therefore may reduce the potential for any future over-investment. This said, the retail benchmarking approach should not unduly threaten new investment as firms are only obliged to reduce prices by retail price competition, and also should have only a minor impact on the ability of carriers to offer new and innovative services.

### 7.4.3 Legitimate business interests

The retail benchmarking approach does not significantly change existing methods of pricing and rather imposes a requirement for continued price decreases. In this way it will allow access providers to recover (at least) a commercial return on prudent investment. Mobile carriers would also need to factor in the effect on access prices for GSM termination when responding to retail price competition. If existing retail price competition is weak, this linkage may weaken retail price competition. If price competition is relatively strong, termination prices should decrease while still allowing mobile carriers to retain some pricing flexibility. This should promote the legitimate business interests of mobile carriers.

### 7.4.4 Direct costs of access

The direct costs of access are not directly considered under the retail benchmarking approach. Rather, the retail benchmarking approach focuses on changes in the costs of access (and in retail competition).

## 7.5 Conclusions on the appropriate pricing principle

GSM termination pricing principles raise the difficult issue of the supply of one service in a broader bundle of services facing increasing competition. In deciding the most appropriate pricing principles – having regard to the legislative criteria – the Commission must therefore consider not only the supply of the GSM termination service in isolation, but broader competition in the mobile services market.

The Commission concludes that the forbearance approach does not best meet the legislative criteria, given the level of competition in the mobile services market, and particularly its termination element. In making this assessment, the Commission is conscious that an increasingly competitive market can generate outcomes that can not be replicated by a regulatory pricing approach, and that an increased competitive focus may develop on access prices for GSM termination as the market matures. This said, the Commission has remaining concerns with competition and efficiency in the mobile services market, and the ability and motivation of integrated carriers to restrict competition in downstream markets that are supplied with the GSM termination service.

The Commission concludes, in line with the Draft Report, that a cost-based approach to the pricing of the GSM termination service also does not best meet the legislative criteria at this time. While the Commission recognises that 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) outweigh the benefits at this stage. In coming to this conclusion, the Commission has also considered the potential transitory nature of the problem.

While the Commission has decided, on balance, not to undertake cost-based regulation at this time, it believes it is important to ensure that continued competitive pressure develops on termination prices. The Commission will monitor the market and seek to facilitate structural adjustment within the market. Other developments – such as increased use of closed user groups – may occur to increase competition for termination services.

The Commission also believes that a degree of regulatory intervention is appropriate at this time, having regard to the legislative criteria, in the form of a retail benchmarking approach. The retail benchmarking approach uses a reasonable proxy for the efficiency improvements and competition pressures on mobile prices – the price fall in the retail segment of the market – to provide a safety net that price falls continue to occur for the termination service. This is likely to reduce opportunities for anti-competitive pricing and improve allocative efficiency, and best promote the LTIE at this time.

This 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. This said, the Commission is likely to retain its current caution about cost-based regulation of mobiles and therefore clearer evidence of detriment caused by current pricing practices would need to be presented to it.

***Implementation of the pricing principles***

The Commission has noted concerns with the application of the benchmarking principle expressed in submissions to the Draft Report in Chapter 6. Appendix E provides further detail on the practical implementation of the pricing principles and outlines the approach the Commission is likely to take in an arbitration.

The Commission hopes that a benefit of issuing these pricing principles will be to enhance commercial negotiation and to minimise its involvement in regulation through access disputes. Consequently, it does not intend to encourage further delays in negotiations by undertaking an overly-complex price change methodology – this would clearly reduce the benefits of issuing the principles in the first instance.

***Application to CDMA***

The Commission also notes that the GSM mobile technology is currently the only declared mobile technology and, therefore, the only mobile service that the Commission has power to regulate under Part XIC of the Act. The issues of control over access and consumer ignorance (which allow mobile carriers to sustain above-cost access prices), however, may equally apply to other mobile termination services. As noted in the Draft Report, it may be appropriate, therefore, to extend the GSM service declaration so that it also applies to other mobile technologies. The Commission intends to immediately begin a public inquiry process on the release of the Final Report. This inquiry will specifically look at the extension of the service declaration to the CDMA mobile technology.

# Appendix A Access disputes currently being arbitrated by the ACCC in relation to the GSM origination and termination services

The Commission has been notified of the access disputes detailed below.

| Date notified | Access seeker | Access provider | Service |
|---|---|---|---|
| 16 March 1999 | AAPT Limited | Telstra Corporation Limited | Domestic GSM Originating and Terminating Access Services |
| 15 June 1999 | AAPT Limited | Optus Mobile Pty Limited | Domestic GSM Originating and Terminating Access Services # |
| 1 October 1999 | Primus Telecommunications (Australia) Pty Ltd | Telstra Corporation Limited | Domestic GSM Originating and Terminating Access Services # |
| 1 October 1999 | Primus Telecommunications (Australia) Pty Ltd | Cable & Wireless Optus Limited | Domestic GSM Originating and Terminating Access Service # |
| 1 October 1999 | Primus Telecommunications (Australia) Pty Ltd | Vodafone Network Pty Limited | Domestic GSM Originating and Terminating Access Services # |
| 30 November 1999 | AAPT Limited | Vodafone Network Pty Limited | Domestic GSM Originating and Terminating Access Services |
| 22 December 2000 | WorldxChange Pty Limited | Telstra Corporation Limited | Domestic GSM Terminating Access Service |

# The access disputes in relation to the Domestic GSM Originating and Terminating Access Services have been withdrawn.

# Appendix B Submissions received in relation the pricing principles for the GSM origination and termination services

The following submissions were provided to the Commission in response to:

- its Discussion Paper on the Principles for Determining Access Prices for the GSM Originating and Terminating Services;
- the subsequent roundtable held in March 2000 to discuss the appropriate pricing principles; and
- its Draft Report on the Pricing Methodology for the GSM Termination Service.

***Submissions to the Discussion Paper were received from:***

- Telstra
- Cable & Wireless Optus
- Vodafone
- AAPT
- Primus
- Australian Mobile Telecommunications Association
- Ericsson
- Global One
- One.Tel
- PowerTel

***Submissions subsequent to the roundtable were received from:***

- Telstra
- Cable & Wireless Optus
- Vodafone
- AAPT
- Hutchison Telecommunications
- Macquarie Corporate Telecommunications
- PowerTel
- RSLCom

***Submissions to the Draft Report were received from:***

- Telstra
- Cable & Wireless Optus
- Vodafone
- AAPT
- Primus
- One.Tel
- PowerTel
- RSLCOM
- WorldxChange
- Macquarie Telecommunications
- Centre for Telecommunications Information Networking

# Appendix C GSM origination

The GSM originating service is a wholesale service used by carriers and service providers to supply particular call products to end-users. As noted in Chapter 1 of this Final Report, it was deemed to be declared under section 39 of the *Telecommunications (Transitional and Consequential Amendments) Act 1997*. In the statement deeming the service to be declared, it was described as:

> Domestic GSM Originating Access is an access service for the carriage of telephone calls (i.e. voice, data over the voice frequency band) to a POI from end-customers assigned numbers from the GSM number ranges of the Australian Numbering Plan and directly connected to the Access Provider's GSM network.[153]

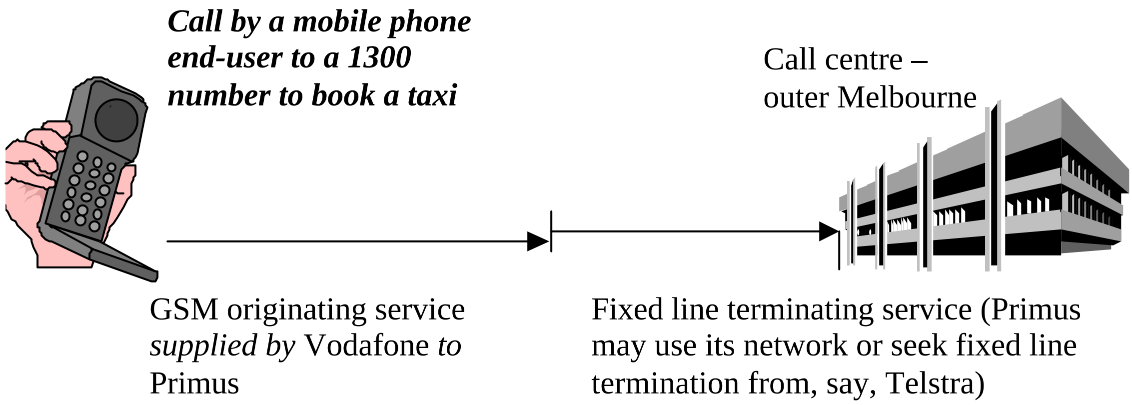
The statement notes that this means an access service for the carriage of telephone calls from an end-user connected to the Access Providers Network to a POI with the network of the Access Seeker *for the purposes of providing access to special number services such as 1800 numbers*.[154] It is not the more general origination service that allows mobile carriers to provide mobile subscribers with mobile-to-mobile and mobile-to-fixed calls.

The GSM originating service is used to originate calls from GSM mobile phones to 13/1300 and 1800 services. It is supplied by mobile carriers to themselves and other carriers to enable mobile subscribers to make calls to 13/1300 and 1800 services. For example, if a mobile subscriber (who is connected to Vodafone's GSM network) wants to book a taxi service using a 1300 number, and Primus provides the network ability for the taxi company to run the 1300 number service, Primus would need to purchase the GSM originating service from Vodafone for the mobile subscriber to be able to make the call. It may also need to purchase a fixed line terminating service from another carrier where it does not have its own network. This is shown in Diagram 1.

[153] *Deeming of Telecommunication Services*, Australian Competition and Consumer Commission, June 1997, p. 42.

[154] *ibid*., p. 19.

**Diagram 1 – The GSM originating service: use of the GSM originating service to supply a 13/1300 or 1800 call**




The Commission notes that in its submission to the Draft Report, Vodafone disagreed with the above analysis. It submitted that a fixed line carrier providing 1800 or 13/1300 services (Primus in the above example) does not purchase GSM origination.[155] Rather, Vodafone considers that the end-to-end call service from the mobile to the 1800 or 13/1300 number is provided by the mobile carrier. It notes that without GSM origination the call to the 1800 or 13/1300 number cannot be supplied. Vodafone submitted that both the mobile carrier and fixed line carrier providing 1800 or 13/1300 services have commercial imperatives to reach agreement.

However, the Commission notes that its understanding of the provision of GSM origination is supported by the Australian Communications Industry Forum Interconnection Model. In particular principles G15 and G16 outline the following:

- the carrier providing the 1800 or 13/1300 services (Primus above) to the ‘commissioning customer’ (the taxi service above) is the prime service deliverer; and
- the mobile carrier originating the A-party’s call (Vodafone above) and any transit service deliverers are the supporting service deliverers to the carrier/prime service deliverer providing the 1800 or 13/1300 service (Primus).[156]

This suggests that the carrier providing the 1800 or 13/1300 services, as the prime service deliverer, is responsible for the call and as such would purchase GSM origination from the mobile carrier originating the A-party’s call.

[155] Vodafone submission to the Draft Report. p.27.

[156] *ACIF Interconnection Model* – G538, August 1999, p. 13, 18.

***Control over access and consumer ignorance***

The Commission’s consultants noted that although their advice, and paper, focused on the regulation of access prices for GSM termination, the same issues apply to the GSM origination services which allow for mobile calls to be made to 1800 and 13/1300 number services. In particular, that control over access and consumer ignorance allow mobile carriers to sustain high access prices for GSM origination.

In this respect the Commission notes that if a business decides to provide a 13/1300 or 1800 service, and to accept calls from mobiles, it has no alternative but to purchase the GSM origination service. However, it is noted that such a business may have greater incentives to inform itself about access prices for GSM origination (or the net payment). Therefore, it appears mobile carriers may be able to sustain high access prices for GSM origination, although perhaps not to the extent they are able to for the GSM termination service.

The Commission considers that the pricing issues associated with the GSM origination service would be best resolved, using a similar framework as proposed for GSM termination services, in the context of the access disputes. The Commission understands, however, that in the context of commercial negotiations access price for GSM origination generally mirror the access prices for GSM termination. Therefore, given the Commission’s proposed regulatory response for access prices for GSM termination, commercial negotiations may lead to agreements about access prices for GSM origination (outside the context of the access disputes.

# Appendix D Addressing consumer ignorance

Several submissions to the Commission's Discussion Paper noted that it may be preferable to address the issue of consumer ignorance by regulating at the source of the problem. The Commission noted in the Draft Report that it considers that market failures are generally best addressed at the source, and maintains this view.

It is worth briefly revisiting why the Commission considers that consumer ignorance is likely to hold in the first instance. That is, consumer ignorance will likely hold if:

- consumers are not aware of differences in access prices charged by mobile carriers; and/or
- consumers do not know which mobile network is being called (so that even if they had more knowledge about pricing, they could not necessarily use this knowledge).

It is quite plausible that the latter can be addressed by carriers, and the former can be significantly mitigated by providing more information. However, addressing just one of these issues is less likely to result in increased competition in the provision of GSM termination services.

Several different possibilities have been proposed which encompass providing end-users with information about mobile carriers being called and the retail price/ access price for GSM termination associated with a call. These include:

- providing end-users with information regarding call prefixes or playing a distinctive sound when making calls to particular mobile carriers[157];
- recorded voice announcements at the beginning of a call to indicate the mobile carrier being called[158];
- direct charging to fixed line customers by mobile carriers for termination (as a retail rather than wholesale service)[159];
- providing better billing information to the end-user calling a mobile carrier. For example, by adding the name of the mobile carrier called to the current billing information, details

[157] *Termination Charges for Mobile Phone Networks – Competitive Analysis and Regulatory Options*, Gans J.S and King S.P, 1999, p. 21-22.

[158] Cable & Wireless Optus submission to the Draft Report, p. 71-72.

[159] *Termination Charges for Mobile Phone Networks – Competitive Analysis and Regulatory Options*, Gans J.S and King S.P, 1999, p. 22-23.

indicating the fixed and mobile components of the fixed-to-mobile price, or the retail prices and any differences between rates to mobile carriers[160]; and

- introducing a second pre-selection basket that only contains fixed-to-mobile calls. This would ensure that pre-selected carriers focus on both educating end-users and competing for existing and potential end-users on the basis of their retail prices for fixed-to-mobile calls.[161]

The Commission made the point in the Draft Report that fixed line carriers providing fixed-to-mobile calls only provide a limited amount of information to consumers about the access prices for GSM termination they are charged and the differences between mobile carriers. Further, fixed-line carriers have tended to adopt a single price for fixed-to-mobile calls which average out any differences in access prices (presumably this is because they purchase termination at similar prices), and have not tended to provide detailed billing information to consumers to identify:

- which mobile network has been called[162]; and
- what component of the fixed-to-mobile price is for termination of the call.

The Commission believes that adopting these practices (which emphasise to consumers the extent of differences in the pricing of GSM termination by mobile carriers) could have a significant impact on consumers' knowledge of pricing.

It is noted that in its submission to the Draft Report, the Centre for Telecommunications Information Networking (CTIN) submitted that part of the appropriate response to the GSM termination problem involves requiring mobile carriers to place information relating to access prices in the public domain. It considered this would bring the attention of mobile phone subscribers to the cost others incur in calling them.[163]

Providing information to consumers directly about the mobile network being called is also something that requires further consideration to inform consumers and hence encourage competition. The difficulty with this approach is to ensure that the costs of any proposed mechanism are minimised[164] to ensure that they are less than the resultant benefits.

[160] In the context of fixed-to-mobile calls, the Commission understands that Telstra is the only carrier to distinguish between the mobile carrier being called. In the context of mobile-to-mobile calls, the mobile carriers generally distinguish between whether an end-user is calling 'on-net' or to another mobile carrier.

[161] Vodafone submission to the Discussion Paper, p. 31 and supplementary submission to the Discussion Paper, p. 2-4.

[162] The Commission notes that Telstra is the only carrier to have differential fixed-to-mobile retail prices for 'on-net' and 'off-net' calls and as such its website provides end-users with a list of the four digit mobile number prefixes which mean you are calling a Telstra mobile.

[163] Centre for Telecommunications Information Networking submission to the Draft Report, p. 4

[164] These costs include both the resource costs of implementing a solution and the possible irritation for consumers of a message or other sound identifying a carrier.

The Commission also noted in the Draft Report that its bilateral arbitration powers are not well suited to mandating industry-wide mechanisms to address these problems. Nonetheless, the Commission believes it is important to address these problems and strongly encourages fixed and mobile carriers to consider these changes. It is likely that structural changes, such as those listed, will be a major consideration in the Commission's decision of whether to remove pricing regulation on the GSM termination service in two years time.

In relation to pre-selection, the Commission notes that as the extent of competition in the provision of long distance and international calls increases, and margins on these calls decline, there may be an increasing focus on the competitive provision of fixed-to-mobile calls. In addition, with increasing levels of mobile penetration it would also be expected that there may be an increasing focus on the provision of fixed-to-mobile calls. The benefits of a separate fixed-to-mobile basket hence appear uncertain in comparison to the existing basket.

That said, the Commission notes that the Australian Communications Authority is currently reviewing the pre-selection requirements on carriers. It is considering the issues of single basket and multi-basket pre-selection including what sort of segmentation of pre-selectable call types would be desirable for creation of multiple baskets. The Commission may consider this issue further in the context of that review.

# Appendix E Implementation of the retail benchmarking approach

Since the release of the Draft Report, the Commission has further considered the practical aspects of the implementation of the retail benchmarking approach. In particular, it has considered implementation in the context of access disputes and over the two year implementation period. It has been assisted by submissions to the Draft Report, and subsequent discussions with carriers.

The Commission will not make a final decision about implementation of the retail benchmarking approach in the context of particular access disputes until it has received submissions from relevant parties. This said, the following outlines the approach that the Commission proposes to take in access disputes, unless there are compelling reasons to do otherwise. Specifically, it discusses the likely application of the approach in relation to:

- the determination of the starting access price; and
- the calculation of retail (and hence access) price changes, and how these will be applied to the starting price.

Further, this Appendix also outlines how the Commission proposes to undertake its monitoring functions as discussed in Chapter 7 of the Final Report.

## E.1 Determination of the starting access price

The retail benchmarking approach provides that the lowest access price currently agreed between an access seeker and an access provider will be the starting price.

In the context of implementing the retail benchmarking approach in current access disputes the Commission needs to specify the date from which to take the lowest access price. It is proposed that the starting price will be taken from around the time of the Commission's final report (i.e. 1 July 2001). This ensures that retail price movements can be applied to access prices in a consistent way.

The Commission noted in Chapter 6 that it may be appropriate to notify access seekers and access providers of the starting price in order to facilitate commercial negotiation. In this respect the Commission understands that the lowest access price agreed to be about 24.5 cents per minute. While the Commission will need to seek further information on this matter, it is noted that this is the likely starting price that the Commission will use in arbitrating current access disputes.

## E.2 Calculation of retail price changes

### General

As noted above, the retail benchmarking approach provides that access prices for GSM termination will fall at the same rate as retail prices for mobile services provided by a mobile carrier. That is, access prices in the current time period are dependent on past retail price movements (the change in average retail prices between, say, time period 1 and time period 2).

There are two practical issues which need to be considered in regard to how the retail price movements will be determined:

- the length of time for assessing retail price movements (i.e. between time period 1 and time period 2); and
- how to determine the average price per minute and price change for each time period.

**Time period for assessing retail price movements**

There are several options for the length of time over which the retail price movements could be determined (i.e. the length of time between time periods 1 and 2). These range from a monthly basis to an annual basis. The Commission sees merit to using a six monthly time period to assessing retail price movements. Such a timeframe is not so short so as to be administratively burdensome (for either the carriers or the Commission) and at the same time is not so long as to provide limited scope for regular downward pressure on access prices over the next two years.

The Commission proposes to use calendar six-month periods – that is, 1 January to 30 June, and 1 July to 31 December. Therefore if, as suggested above, the retail benchmarking approach is applied from 1 July 2001, it is proposed that the initial retail price movements used to calculate access prices for the purpose of making final determinations in current arbitrations will be considered as the change in average retail prices between the two six-month periods of July – December 2000 and January – June 2001.

**Broad approach – a yield methodology**

The Commission noted in Chapter 6 that a yield method of calculating retail price movements would appear to be most appropriate for arbitration of access disputes. This involves determining retail prices by dividing a mobile carrier's total mobile revenue from retail activities by the total number of its mobile minutes from origination services in a given period. In this way a revenue per minute figure (a proxy for average prices) for a mobile carrier is derived that can be compared between periods in order to determine the retail price movements.

The necessary calculations are shown below.

$$(1)\qquad \frac{\text{Revenue from retail mobile services}}{\text{Mobile minutes from originating services}} = \text{revenue per minute} = \text{average price}$$

$$(2)\qquad \frac{\text{Revenue per minute}_2 - \text{Revenue per minute}_1}{\text{Revenue per minute}_1} = \%\text{ change in average price}_{1=>2}$$

While it is believed that this approach is considerably simpler to apply than alternative methodologies (particularly those of the 'retail basket' type[165]), there are still issues surrounding which services should be included as 'retail' services, how to allow for quality changes and whether mobile carriers should obtain 'credits' if access prices changes are greater than retail price changes.

### Services for inclusion

*Revenue from retail mobile services*

The Commission understands that mobile carriers receive revenue from a variety of retail and wholesale sources. The following list identifies important components of retail and wholesale mobile revenue:

**Retail**

- outgoing calls
- subscription (access) fees
- sales of handsets
- initial connection charges
- data services (e.g. SMS, WAP)
- 'valued-added' services, such as voicemail

**Wholesale**

- incoming calls
- outgoing and incoming calls made under roaming agreements

It is the Commission's preliminary view that incoming calls (the call termination service) and roaming revenue are clearly wholesale revenues, and should therefore be excluded from revenue calculations.

[165] There are several conceptual approaches possible to determining an 'average price' and retail price changes. The approach used by the Communications Research Unit of the Department of Communications, Information Technology and the Arts is one example, although it is considered too difficult to update every six months. This approach, used in the Commission's Division 12 report on retail price changes, relies on constructing representative baskets to determine an average price for a given usage profile. Price changes are measured on changes in the price of these baskets over time.

The Commission understands that the primary source of retail revenue for carriers is outgoing calls and access fees (which incorporate handset subsidies) and proposes to include these in the revenue calculations. Only GSM-related revenue should be included given the pricing principles relate to a GSM-specific service.

Data services and valued-added services are an increasingly important source of revenue for mobile carriers, and, in general, the Commission considers that revenues from these services should be included in revenue calculations. This ensures that retail price reductions can not be transferred between core call services and value added services so as to avoid reductions in access prices for GSM termination. However, revenues from these services are potentially more difficult for the Commission to incorporate into the retail benchmarking approach. Balancing these considerations, the Commission believes there is particular merit at this stage to including revenues from two of the value-added and data services which are more widely used:

- SMS messaging; and
- voicemail.

SMS messaging is an important revenue stream for mobile carriers (for example, Telstra notes revenues of $48 million for the first half of 2000/01).[166] The Commission has considered a number of different methods to incorporate SMS services. A simple and logical approach is to again apply a yield method (in terms of average price for a message) to derive a price change, which can then be revenue-weighted and combined with the other retail services to derive an overall retail price change.

Voicemail service revenues are also important and appear to be more straightforward to include in revenue calculations. Voicemail revenue could be reported with subscription and call revenues, while calls to voicemail should be the same as an ordinary call for minutes of use measurement purposes.

Further, Telstra noted in its submission to the Draft Report that it earns revenues from mobile phones that are provided to customers as a substitute for landlines in accordance with meeting the Customer Service Guarantee and the Universal Service Obligation.[167] The Commission's initial view is that such revenue should not be included in the calculation of the average price.

*Mobile retail minutes of use*

Similar to revenue calculations, minutes of use should relate primarily to calls originated on the GSM network. Again, the pricing approach looks at retail services and hence termination minutes should not be included.

The Commission notes that there may be practical difficulties associated with obtaining the revenue and minutes of use breakdowns as outlined above – for example, due to the bundling of mobile services with other products or due to reporting limitations. The Commission will

[166] Telstra presentation of half year results (2000/01), available at www.telstra.com.

[167] Telstra submission to the Draft Report, p. 4.

seek guidance from the mobile carriers on this issue in the context of access disputes and more generally following the release of the Final Report.

**Adjusting for quality change**

Submissions to the Draft Report raised the issue of how changes in quality would be allowed for in measuring the price movement for the overall mobile package. In particular, Cable & Wireless Optus noted its concern that, if the Commission did not correctly implement retail benchmarking, changes in the quality of mobile services may be mistaken for changes in real prices of outputs.[168] Cable & Wireless Optus submitted that over the last three years there has been a decrease in mobile subscription prices in absolute terms (caused by the rapid take-up of pre-paid services) but that this decrease mainly reflects the lower quality and costs of handsets in the pre-paid market. Cable & Wireless Optus suggested the development of a mobile subscription quality index to enable the separation of price and quality changes to mobile subscribers.

The Commission notes that the yield method alone does not allow for changes in the quality of the overall retail package of a mobile carrier and that it may be appropriate to construct a quality index as suggested by Cable & Wireless Optus. That said, it may be the case that decreases in the quality of the overall retail package are offset by the increases in quality of the overall retail package (e.g improved handsets being provided at existing subscription prices). In such circumstances there would be little or no change in average quality and as a result there may be little benefit from price adjustments. In any event, the Commission believes attempting to calculate quality changes would be problematic. It is therefore unlikely to consider changes to quality unless there is compelling evidence of an impact on the retail price changes that have occurred during a six-month period.

**Possibility of 'credits'**

A further issue the Commission has considered is whether the retail price movement, or percentage change in average prices, should be implemented on a 'cumulative' or 'period-on-period' basis. While generally not likely to lead to substantial differences in access prices, this issue may become important if disputes over access prices re-emerge during the two-year implementation period.

A period-on-period approach would involve a reduction in access prices by the percentage change in the average retail price for each six month period. A cumulative approach on the other hand would involve ensuring access prices reflect the total percentage change in average retail prices since the setting of the initial access price.

If parties negotiated access prices on the basis of forecasted retail price changes, which were different from the actual retail price changes that eventuate, under a cumulative approach the Commission would need to take that difference into account in an access dispute (i.e. allow for 'credits'). The risk that the forecast retail price changes are incorrect could have rested

[168] Cable & Wireless Optus submission to the Draft Report, p. 35-36.

with one party – a cumulative approach may mean that any risk is subsequently mitigated by the Commission by allowing for credits.

The Commission's initial view is that a period-on-period approach, which determines the minimum reduction in access prices for GSM termination over a six month period, may be preferred.[169] Such an approach does not allow for mobile carriers to build up 'credits' for reductions in access prices which are greater than retail price movements (as occurs, for example, under Telstra's retail price controls). However, it may promote commercial negotiations as mobile carriers may be more willing to negotiate longer-term arrangements that forecast retail price changes.

## E.3 Monitoring and publication of information

As noted in Chapter 7, the Commission's expectation is that access prices should at least move in line with retail price movements for the next two years. Further, it noted that the retail benchmarking approach will be reviewed in two years time. Therefore, ongoing monitoring of the mobile market and publication of information will be important for two purposes:

- to ensure that sufficient information is available to inform parties of the retail price movements; and
- to assess the ongoing case for regulation of access prices for GSM termination at the end of the two year period.

***Monitoring to enhance implementation***

The Commission will collect information on retail revenues and minutes of use for mobile services as outlined above. While in principle the collection of this information could be left to situations where there are particular access disputes, the Commission's view is that collating this information on a consistent basis for all mobile carriers is preferable. This will allow the Commission to release carrier-specific retail price changes (in an index form) if it believes it will encourage commercial negotiation. The collection of information on retail revenues, minutes of use and the access prices for GSM termination is an issue which is likely to be further discussed with mobile carriers after the release of the Final Report. The Commission notes, however, that a specific Record Keeping Rule could be used for the purpose of collecting this information.

***Monitoring to assess on-going need for regulation***

The Commission will also undertake monitoring activities to determine whether there is a need to extend the benchmarking approach past the two year implementation period, and, if

[169] The Commission notes in relation to any potential access disputes notified in the future that under a period-on-period approach the starting price would be the most recent access price agreed between the access seeker and the access provider and that the retail price movements over the previous two six month periods would be applied to that access price.

not, whether the GSM originating and terminating service declaration should be revoked or to consider other forms of regulation.

The Commission noted in Chapter 7 that one of the issues industry should give further consideration to is the benefits of structural changes to improve consumer awareness of (a) access prices for GSM termination; and (b) which network the consumer has called. Industry should consider discussing such changes in a formal context, such as through ACIF. As noted, this will be one of the actions that the Commission will consider favourably in its review of GSM termination in two years, as it is likely to increase competitive pressure on access prices for GSM termination.

The Commission noted in Chapter 5 that the overall mobile market appeared increasingly competitive. The Commission intends to undertake further monitoring of carrier conduct and performance in this market, and its implications for the fixed-to-mobile market. This will likely take the form of the Commission requesting information on fixed-to-mobile prices (to compare against access prices) from fixed and integrated carriers, and cost and revenue data from mobile carriers. A specific Record Keeping Rule may also be appropriate for this purpose, although as noted above this is likely to be further discussed with mobile carriers after the release of the Final Report.