Australian
Competition &
Consumer
Commission

PRICING METHODOLOGY
FOR THE
GSM TERMINATION SERVICE

DRAFT REPORT

December 2000

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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 s. 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 section 3 of this Draft 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 currently has five access disputes before it in relation to the GSM origination and termination services (see Attachment A for a list of the access disputes). In all five 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 the price terms and conditions of the services in each access dispute. Accordingly, the Commission is conducting 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 Associate Professor Joshua Gans to provide advice on the appropriate methodology (or

[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,* ACCC, July 1997.

methodologies) for pricing access to the services. The Commission released a Discussion Paper based on this advice in December 1999, sought response submissions in relation to the paper (see Attachment B for a list of submissions), and held a roundtable in March 2000 to discuss the issues raised in the paper and by response submissions. Since that time, the Commission has considered submissions made in response to the discussion paper and following the roundtable. It has also undertaken market inquiries, further analysis and considered additional material provided by industry and other interested parties. The preliminary conclusions of 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 preliminary 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 able to provide 1800 or 13/1300 call services to mobile subscribers. Therefore, the declared GSM origination service may raise similar issues to those raised by the GSM termination service.

A description of the GSM origination service is in Attachment C, along with an outline of the Commission's preliminary 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 preliminary pricing principles

The Commission's economic consultants proposed that mobile carriers may have market power because:

- 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 accepts that control over access to the end-user and consumer ignorance may enable mobile carriers to sustain high access prices for GSM termination. While the Commission believes that some factors somewhat mitigate control over access and consumer ignorance (such as closed user groups – i.e., 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 high access prices for GSM termination. However, it may be possible in the future for developments in the market to further diminish control over access particularly consumer ignorance.

GSM termination is only one element of the mobile services market the Commission has examined. The provision of a mobile call 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, 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 (two being new entrants and relatively small), decreased retail prices for mobile access services and outgoing call services, and increased product offerings indicate an increasingly competitive environment. However, indications are that the termination element of the mobile services market remains significantly above cost, which suggests that although competition in the overall market is working to reduce retail prices, some elements of the market may be affected by market failure. Therefore, while an interdependency exists between these revenue streams (subscription, outgoing call services and termination access), the Commission does not consider there is necessarily a one to one relationship between the revenue streams at this time.

In addition to displaying increasingly competitive characteristics, the mobile services market is still a relatively new market and its demand characteristics are continuing to develop. In this regard the increasing rates of mobile penetration in Australia suggest that more and more end-users have a preference towards consuming mobile services. Furthermore, it appears that there is an increasingly greater number of call minutes being made from and to mobile services.

It is noted that sustained high access prices for GSM termination appear 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 (i) a revenue steam and (ii) a cost. Therefore no competitive advantage exists in sustaining high GSM 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 would be 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.

The Commission considers that, on balance, the most appropriate pricing methodology is a benchmarking approach. Under its proposed approach changes in each mobile carriers' access prices would be benchmarked against the percentage change of its weighted average retail prices for the overall mobile package (access and outgoing calls). The initial 'starting point' for the 'glide path', created by this pricing rule, would be the lowest current access price for GSM termination. The advantage of pegging changes in access prices to changes in the weighted 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. In effect a relevant competitive discipline is being placed on GSM termination, to overcome the relatively weak competitive forces which currently exist.

Therefore, access prices for GSM termination will be reduced allowing for allocative inefficiencies to be addressed and benefits passed on to end-users making fixed-to-mobile calls. The Commission also considers the proposed approach to be an appropriate response, having regard to the characteristics of the market and the benefits from regulatory pricing.

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

The Draft Report is structured as follows:

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

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

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

section five provides the Commission's assessment of competition in the mobile services market;

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

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

1.2 Submissions on the Draft Report to the Commission

The Commission seeks comment from all industry participants as well as from the general public. It encourages industry participants, other stakeholders and the public more generally to consider the matters set out in this Draft Report and make submissions to assist the Commission in determining whether the proposed pricing methodology is appropriate. Any submissions should be made to the Commission by **no later than 5.00pm, 2 February 2001.**

The Commission prefers that all written submissions be publicly available to foster an informed, robust and consultative process. Accordingly, submissions will be treated as public documents unless otherwise specified. It is preferred that where industry participants wish to submit confidential information they should provide confidential and non-confidential versions of their submission. In such circumstances, the confidential version will need to highlight any such information.

Submissions should be addressed to:

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

Fax: 03 9663 3699

In addition to a hard copy, persons making submissions are encouraged to provide an electronic copy of the submission to ken.walliss@accc.gov.au.

Enquiries about this Draft Report, or about the making of submissions, can be directed to Claire Preston on (03) 9290 1885.

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 section 1 of this Draft Report, it was deemed to be declared under s. 39 of the *Telecommunications (Transitional and Consequential Amendments) Act 1997*. In the statement deeming the service to be declared, it was described as:

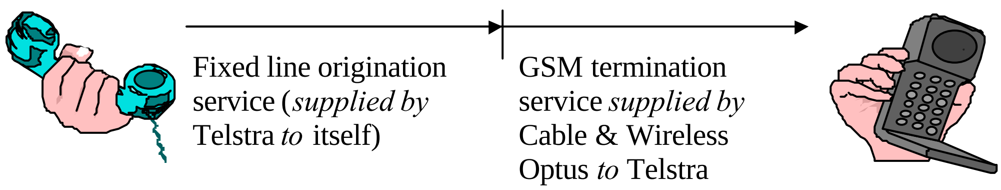
> Domestic GSM Terminating Access is an Access Service for the carriage of telephone calls (i.e.. voice, data over the voice band) from a POI to B-parties assigned numbers from the GSM number ranges of the Australian Numbering Plan and directly connected to the Access Providers network.[6]

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 (either 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 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

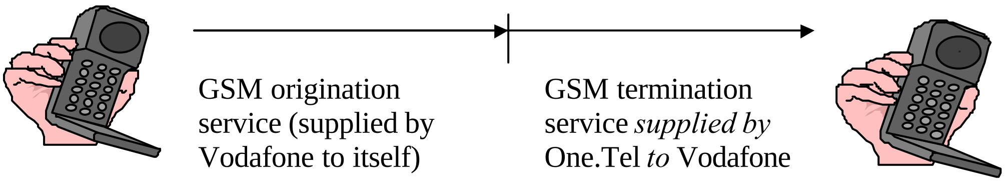
In the case of a mobile-to-mobile call, if a mobile subscriber connected to Vodafone's GSM network wants to call a mobile subscriber connected to One.Tel's GSM network, Vodafone

[6] *Deeming of Telecommunication Services*, ACCC, June 1997, p. 42.
[7] Ibid, p. 19.

would need to purchase the GSM termination service from One.Tel 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

Call from mobile phone end-user to another mobile phone end-user



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 and included fixed-to-mobile calls in a basket of other pre-selected services (national long distance and international calls). Following from this, an end-user can pre-select a carrier for national long distance, international and fixed-to-mobile calls. With pre-selection, the pre-selected carrier will provide the end-user with all of these call types. 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, but this Draft Report does not focus on that aspect of the transaction.

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]

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

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.

4. GSM termination

This section of the Draft Report focuses on the nature of the GSM termination service. In particular, this section examines the issues of control over access to GSM termination and consumer ignorance raised by the Commission's economic consultants and by some carriers in their submissions. 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

The Commission's economic consultants raised several issues that are 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 to 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.

A 1998 report by the United Kingdom Monopolies and Mergers Commission on the charges made by 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

[13] Associate Professor Gans also notes 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 Attachment D.

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 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 is the Commission's view that the benefits of providing additional information are not clear, particularly given current pricing structures for fixed-to-mobile calls and that the Commission's powers are not well suited to requiring that such information be provided on an industry wide basis. Industry discussions may, however, be a more appropriate forum for consideration of consumer ignorance. The Commission's draft view in relation to addressing the consumer ignorance problem at 'its source' are detailed in Attachment D.

4.2 Factors which may mitigate control over access and consumer ignorance

4.2.1 Transit arrangements

A supplementary submission to the Commission from Cable & Wireless Optus argued that mobile carriers do not have market power (control over access) because of transit arrangements.[17] 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.[18]

A 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 prices for GSM termination similar to that negotiated with Mobile Carrier B.[19] To the extent that significantly lower access prices for GSM termination are

[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.
[16] *Regulating Mobile Operators – The Road to Effective Competition*, Ovum, Volume 3: GSM termination Rates, 2000, p. 29, 37-38.
[17] Cable & Wireless Optus supplementary submission (letter dated 16 September 2000), p. 5.
[18] Vodafone submission, p. 10.
[19] 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.

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.

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, in terms of international calls, a major effect of transit is to place pressure on terminating providers to lower settlement rates.[20]

However, the Commission is of the view that the conditions, which 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 of 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 does not suggest that transit arrangements mitigate control over access to GSM termination.

4.2.2 Countervailing power of fixed line carriers seeking GSM termination

Some submissions raised the issue of countervailing power in the context of the GSM termination service. In this regard it was noted that, even though a mobile carrier may have control over access to GSM termination, its ability to raise 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.

In particular Cable & Wireless Optus suggested that a dominant fixed line operator will be in a superior negotiating position on a range of services which are either not subject to regulation or are subject to vague regulatory standards.[21] It also notes that even if the access price for fixed line origination and termination services are regulated (as they presently are) the dominant fixed line carrier will still be able to exercise countervailing power. In particular, where the non-price terms and conditions of access are as significant as the price terms and conditions, but these are subject to even vaguer regulatory standards.

[20] *International Telecommunications Market Regulation*, Productivity Commission, Report Number 7, 23 August 1999, p. 51. The report also 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.

[21] Cable & Wireless Optus submission, p. 56.

The Commission notes that many fixed line disputes arbitrated by the Commission have dealt with non-price terms and conditions and that this avenue is always open to an access seeker who cannot negotiate a reasonable outcome. As such, the Commission questions the extent to which countervailing power will mitigate control over access and consumer ignorance.

4.2.3 Closed user groups and call back

Some submissions received by the Commission questioned the extent of consumer ignorance that exists and, whether it allows mobile carriers to sustain high access prices for GSM termination. In particular, Telstra, Cable & Wireless Optus and Vodafone all submitted that not all end-users are ignorant about retail charges 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.[22]

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.[23] 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. For example RSL COM has introduced 'family and friends' tariffs that enable lower price calls to be made from a fixed line to nominated mobile numbers. Vodafone also offers a virtual private network service which enables corporate customers to route fixed-to-mobile calls over the Vodafone network at discounted rates. In addition, Telstra have 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 services. 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.

The Commission notes that the increasing presence of 'closed' user groups may place more of a competitive focus on access prices for GSM termination. However, at this point in time, and in the foreseeable future, it views any competitive force on GSM termination as being relatively weak.

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 charges 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

[22] Vodafone supplementary submission, p. 1-2, Telstra submission – Response to Professor Gans's Discussion Paper, p. 3 and Cable & Wireless Optus submission, p. 59-60.
[23] Cable & Wireless Optus submission – associated paper by Professor J. Hausman, p. 8-9.

price movements. In this regard the extent to which call back constrains mobile carriers from sustaining high access prices for GSM termination may not be as great as otherwise.

4.2.4 Conclusions

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 within the mobile services market, and in particular on GSM termination will remain relatively weak, now, and in the foreseeable future. Having said that, the Commission considers that the increasing presence of 'closed' user groups may serve to heighten these forces at some time in the future. Accordingly, the Commission intends to monitor and review the mobile services market for such an outcome.

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, 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.[24] It also notes 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 notes that in such circumstances as outlined above there would appear to be a limit to the extent that the access prices for GSM termination will continue to increase. In this regard there are incentives for the mobile carriers not to engage in continual increases in the access prices for GSM termination, particularly as 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 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. This may constrain further increases in access prices for GSM termination.

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 slowly trending down. This does not support the conclusion that access prices for GSM termination will trend upwards as the market becomes less concentrated. The downward trend in access prices for GSM termination, however, could be due to a number of factors.

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

That said, the Commission notes that control over access and consumer ignorance allow mobile carriers to sustain high 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 high access prices for GSM termination may also allow mobile carriers to cross-subsidise mobile access service fees and increase demand for mobile subscription.

The incentives that integrated mobile carriers face, when supplying the GSM termination service to each other in relation to fixed-to-mobile calls, are worth examining. In this case the incentive to negotiate a ‘low’ or ‘high’ access price will be dependent on the traffic patterns which exist between the mobile carriers. For example, assume there are two integrated mobile carriers and that Mobile Carrier A originates a lot more fixed-to-mobile calls than Mobile Carrier B. This implies that Mobile Carrier B will terminate a lot of fixed-to-mobile calls (relative to those it terminates on Mobile 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). Mobile Carrier A on the other hand will have an incentive to negotiate ‘low’ access prices as they represent an increased cost to the carrier, relative to the revenue received. However, it will not want to negotiate a reciprocal access price too ‘low’ as this would provide other fixed line carriers with alternative paths to termination. Therefore, it would appear that there is an incentive for integrated mobile carriers to sustain high reciprocal access prices.

The Commission is of the view that there is a role for regulation of access prices for GSM termination when the service is used to supply fixed-to-mobile calls. Sustained high access prices for GSM termination will impact on the competitive provision of downstream fixed-to-mobile calls and may restrict efficient entry of carriers into this market. Furthermore, to the extent that an integrated mobile carrier faces a lower internal access price than a fixed line carrier seeking access to the GSM termination service, it may set retail prices for fixed-to-mobile calls significantly below other carriers. Inefficient use of, and investment in, mobile networks is also likely to result from sustained high access prices for GSM termination.

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 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.[25]

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).[26]

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, when the service is used to supply 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.

Therefore, unlike access prices for GSM termination when the service is used to supply fixed-to-mobile calls, there does not appear to be a role for regulation of access prices when used to supply mobile-to-mobile calls. This is because commercial negotiations will result in efficient access prices or regulation of access prices, when the service is used to supply fixed-to-mobile calls, will also result in similar movements in access prices when the service is used to supply mobile-to-mobile calls.

4.5 Conclusions

It is the Commission's view that control over access to GSM termination and consumer ignorance results in mobile carriers sustaining high access prices for GSM termination. The Commission considers that the competitive forces on GSM termination will remain relatively weak, now, and in the foreseeable future. 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. However, at this point in time, the Commission considers that the competitive forces on GSM termination are relatively weak.

The implications of this are that end-users consuming fixed-to-mobile calls may pay higher retail prices for such calls. There may also be allocative inefficiencies caused by sustained higher prices, as greater termination revenues may encourage inefficient investment in mobile networks. Furthermore, to the extent that an integrated mobile carrier notionally faces a lower internal access price than fixed line carriers seeking access to the GSM termination service, there is the potential for anti-competitive pricing conduct.

[25] This analysis implicitly assumes that the mobile carriers have uniform traffic patterns and each will terminate the same level of call minutes. This assumption appears to be reasonable.

[26] PowerTel submission, p. 4.

Furthermore, the incentives that face mobile carriers suggest that access prices for GSM termination, when the service is used to supply fixed-to-mobile calls, should be the focus of any regulatory activity.

5. Competition in the mobile services market

In this section of the Draft Report the Commission considers the market in which the GSM termination service is supplied, and whether the forces of competition are working effectively in that market.

The Commission notes that the provision of mobile services involves the interaction of four 'joint products':

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

The revenue streams from these services are interdependent and the Commission notes that with effective competition, a change in one revenue stream will, in the long term, be associated with an offsetting change in another stream.

Section 4 of the Draft Report focuses specifically on the GSM termination service. It concludes that the competitive forces on access prices for GSM termination are, and will remain in the foreseeable future, relatively weak. However, as the GSM termination service is only one of the four 'joint products' the Commission considers it necessary to examine the state of competition relating to the provision of mobile services more generally. This will assist the Commission in its consideration of the appropriate pricing approach for the GSM termination service.

5.1 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 s. 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.

Several carriers raised the issue of the market in which the GSM termination service is supplied. Some carriers, such as AAPT, consider that a narrow view of the market should be taken.[27] That is, the market should include only the supply of the GSM origination or termination services to carriers and service providers. AAPT noted that debate on the extent to which mobile carriers possess market power has focused on the market structure, conduct and performance in retail markets rather than the wholesale market. It 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. AAPT concluded that, in the wholesale market, mobile termination is an essential input for any-to-any connectivity.

Other carriers, however, considered that a broader view of the market should be taken. That is, the market should include the GSM originating and terminating services, and other mobile services such as mobile access services and outgoing calls. Both Cable & Wireless Optus and Vodafone appeared to be of this view. For example, Vodafone stated in its submission that the suggestion of a separate market for the GSM terminating service is infeasible.[28] It noted that consumers do not want to purchase incoming calls as a separate service from outgoing calls; rather that they prefer a bundled package that delivers inbound and outbound calls.

5.1.1 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.[29]

The Commission considers the relevant product in this instance is a GSM mobile call. The provision of a GSM mobile call is made up of the mobile access service, the GSM origination service and possibly the GSM termination service (depending on whether a mobile-to-mobile call, or a mobile-to-fixed call is made) and therefore implicitly incorporates outgoing call services. Without the interaction of all these elements a GSM mobile call cannot be provided. This indicates that the wholesale elements (GSM origination and termination services) and the retail elements (mobile access and call services) should be examined together when considering the extent of competition.

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[27] AAPT's supplementary submission p. 1-2.
[28] Vodafone submission, p. 11-12.
[29] *Merger guidelines*, ACCC, June 1999, p. 33.

The inter-dependency between the various elements required in providing a GSM mobile call is particularly evident when considering the level at which the prices for these services are set. Examining the revenue sources of a mobile carrier highlights this inter-dependency. The three revenue sources of a mobile carrier are:

- access charges for GSM termination services (from fixed network and mobile network carriers);
- charges for mobile access services including connection fees, handset charges and monthly access charges (from mobile subscribers); and
- charges for call services (from mobile subscribers).

With effective competition 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.[30] 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 end-users in the form of higher prices for call services (e.g. 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.

Where there is less than effective competition there will still be a link between the revenue streams but they will not be exactly offset.

Given the interdependencies between the wholesale and retail elements necessary to provide a GSM mobile call, the Commission considers they should be included in the same market. This does not mean that the wholesale and retail elements can not constitute separate functional dimensions, with differing market characteristics, such as barriers to entry and concentration levels. This is considered below in the 'functional' section of the paper.

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

Potential substitutes for GSM mobile services include other technologies that could be used to supply mobile calls, such as CDMA and potentially Third Generation mobile technologies (3G), fixed line services, other wireless services, and other methods of voice telephony communications. 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.[31]

[30] Cable & Wireless Optus' submission – associated paper by Dr G Woodbridge, p. 3.
[31] *Merger Guidelines*, ACCC, June 1999.

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.[32] 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

The Commission notes that 3G technology is still maybe two-to-three years away from being widely available (and potentially even more). Also, the Commission understands that the technology needed to operate 3G mobile services is not yet well developed. This leads to uncertainty in predicting the demand for 3G services, given limited information on the cost of its services and features relative to other mobile technology. Given this uncertainty, the Commission does not consider itself to be in a position to make a definitive judgement on whether 3G technologies would be considered substitutes for GSM mobile services at this stage. As such, the Commission has not included 3G services as a potential substitute, at this time.

It should be noted, however, that even if the Commission did include 3G services in the relevant market, this would not affect the conclusions reached.

Fixed line

The Commission concluded in its *Competition for long distance mobile telecommunication service* report that fixed line calls were not a sufficiently close substitute for mobile services.[33] 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 this is unlikely to constrain the prices charged for mobile services to such a degree that they should be considered in the same market.

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-

[32] *Competition for long distance mobile telecommunications services*, ACCC, January 2000 p. 18.
[33] Ibid, p.18

paid 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.

Other

Other possible substitutes for a mobile call include e-mail, facsimile, paging and short message services to mobile phones. Cable & Wireless Optus noted in its submission to the Commission that calling parties in practice have numerous different methods by which contact can be made, including those options listed above.[34] 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. Short message services to mobile phones do enable communication to and from mobile phones and therefore incorporate the element of mobility. However, short message services do not allow for simultaneous communication and are more a feature of a mobile phone than a stand alone service. 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

The Commission considers the relevant product market to be one in which a mobile call is supplied. This incorporates the provision of the wholesale and retail elements of a mobile call using technologies such as CDMA and GSM.

5.1.2 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.[35]

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 considers that provision of a mobile call is made up of both wholesale and retail functional elements. In support of this, the Commission understands that there are seven carriers, only offering mobile calls at the retail level (i.e. mobile access and call services). 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

[34] Cable & Wireless Optus submission, p. 54.
[35] *Merger guidelines*, ACCC, June 1999, p.38.

wholesale market. Furthermore, there are five mobile carriers offering services at the wholesale and retail level.

The Commission notes that AAPT has purchased spectrum, which allows it to enter the wholesale level of the market. Its entry at the retail levels as a reseller may be a stepping stone to entering at the wholesale level. Additionally, One.Tel and Hutchinson also entered at the retail level, but later moved to the wholesale level.

Another indication that there are separate retail and wholesale elements is that carriers such as One.Tel and Hutchinson, who have purchased spectrum in capital city areas, are able to offer a national service through roaming agreements with mobile carriers in other areas. This indicates that mobile carriers supply wholesale elements to each other and other carriers, as well as offering retail services.

Given this, the Commission considers that there are separate wholesale and retail functional elements associated with the provision of a mobile call.

5.1.3 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.[36] 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 are considered to ensure that the relevant arena of competition is described.

The Commission considers that the geographic dimension of the market in which mobile calls are supplied to be a national one.

The wholesale element of a mobile call is currently supplied nationally by three carriers, Telstra, Cable & Wireless Optus, and Vodafone to other carriers and service providers, and ultimately to end-users. One.Tel and Hutchinson also supply the wholesale element of a mobile call in Sydney and Melbourne. Although One.Tel's and Hutchinson's networks only operate 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.

5.1.5 Conclusion

For the purpose of this Draft Report, the Commission's view is that the relevant market is one 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.

[36] *Local Telecommunications Services,* ACCC, July 1999, p. 40.

5.2 Competition in the mobile services market

In considering the competitive state of the mobile services market, the Commission began by assessing the market concentration at both wholesale and retail levels. Following this, the Commission considered:

- whether the market was open to competition, by assessing the barriers to entry; and
- whether the characteristics of competition were present, by analysing 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.

5.2.1 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.

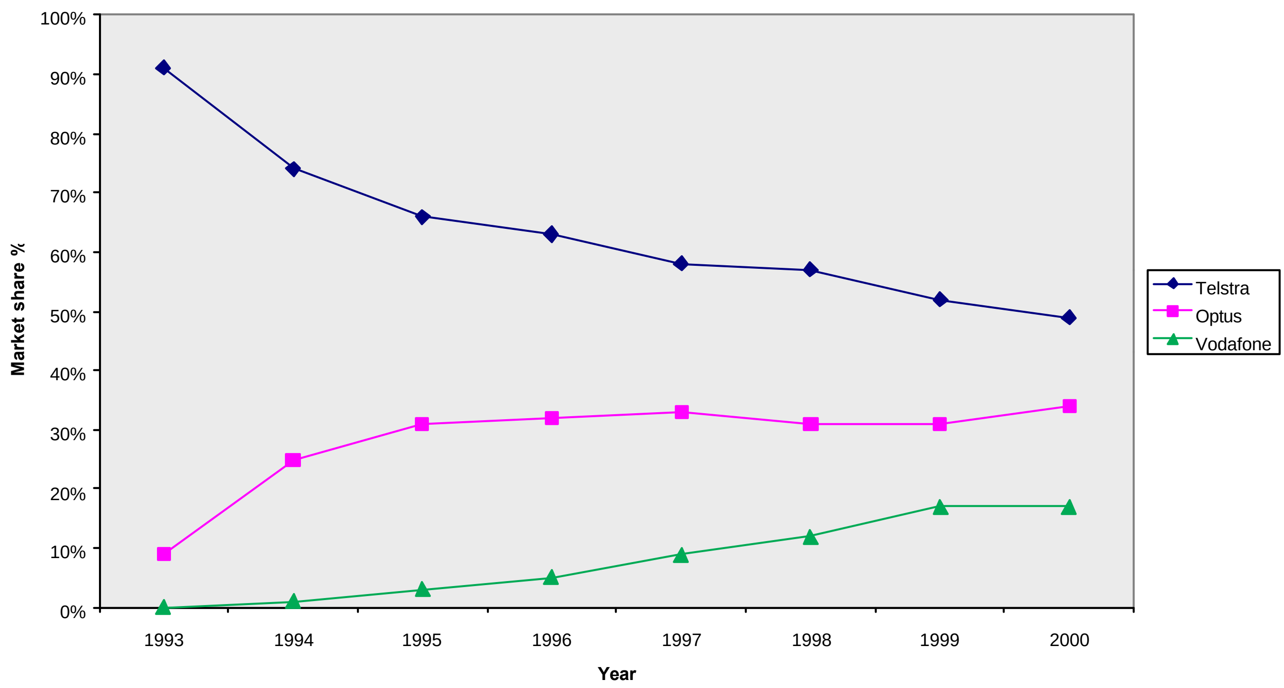
The mobile services market is highly concentrated. Latest figures indicated that the three major mobile carriers, Telstra, Cable & Wireless Optus and Vodafone account for 99 per cent of the mobile services market at the wholesale level, in terms of subscribers.[37]

However, some new entry into the wholesale element of the mobile services market has occurred during 2000, with One.Tel and Hutchinson, under the brand name of ‘Orange One’, both rolling out new mobile networks. One.Tel launched its GSM network in May 2000, and at October 2000 had a market share of 0.60 per cent in terms of subscriber numbers. Hutchinson launched its CDMA network on 1 June 2000, and by October had a market share of 0.42 per cent in terms of subscribers.[38] As noted above, although the network rollouts of the two carriers are restricted to Sydney and Melbourne at this stage, both carriers have a roaming agreement with Telstra. These agreements enable mobile subscribers connected to One.Tel or Hutchinson’s networks to roam onto Telstra’s network outside these areas to make or receive a mobile call. The Commission also understands that AAPT plans to launch its CDMA network in 2001.[39]

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.

[37] As at October 2000.
[38] *Communications Day*, 23 August 2000, p. 1.
[39] *AAPT contracts Lucent Technologies to build CDMA network* – AAPT press release, 15 February 2000.

Diagram 1: Market share of major carriers



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

The latest subscriber figures available to the Commission include One.Tel and Hutchinson's entry into the market and are provided in Table 1. They are provided for both GSM and CDMA digital mobile networks.

Table 1: Mobile subscribers as at October 2000

Mobile carrier	GSM		CDMA		Total	
	Number of subscribers	Market share	Number of subscribers	Market share	Number of subscribers	Market share
Telstra	4,030,000	45.2%	400,000	91.1%	4,430,000	47.4%
C&W Optus	3,100,000	34.8%	-	-	3,100,000	33.1%
Vodafone	1,730,000	19.4%	-	-	1,730,000	18.5%
Hutchison (Orange)	-	-	39,000	8.9%	39,000	0.4%
One.Tel	56,000	0.6%	-	-	56,000	0.60%
Total subscribers	8,916,000		439,000		9,355,000	

Source: *Australia – Mobile Communications – Subscriber Statistics*, Paul Budde Communication, 2000, p. 1.

The Commission understands that these figures only reflect the level of competition 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 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.[40] 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.

Although Table 1 indicates that the new mobile carriers have established some market share, it remains a highly concentrated market. 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.[41] This is clearly the case in the mobile services market, regardless of whether the wholesale or retail dimensions are considered.

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 and concentration levels are high, this may indicate that the threat of entry is unlikely to be effective in terms of competitive outcomes.

5.2.2 Barriers to entry

In a market where significant barriers to entry exist it is unlikely that effective competition will occur. It is important, therefore, to identify whether there are barriers to entry that may deter new entrants, and the significance of any such barriers.

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

- the importance of national geographic coverage;
- the need to obtain spectrum;
- sunk costs; and
- the cost of switching networks.

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.[42] 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.

[40] *Competition for long distance mobile telecommunication services*, ACCC, January 2000, p.24.
[41] *Merger Guidelines*, ACCC, June 1999, p. 44.
[42] *Competition for long distance mobile telecommunications services*, ACCC, January 2000, p. 26.

Table 2: Coverage of incumbent networks

Carrier	Population coverage (%)
Telstra	94
Cable & Wireless Optus	93
Vodafone	91

Source: *Competition for long distance mobile telecommunication services*, ACCC, January 2000, p. 26

Also, as noted above, One.Tel and Hutchinson are in the process of establishing their own networks. One.Tel's GSM network currently provides coverage in Sydney and Melbourne but will increasingly operate in the capital cities over the next twelve months. The Commission understands that Hutchinson's CDMA network currently provides coverage in Sydney and Melbourne. Both mobile carriers provide national coverage by roaming onto Telstra's network.

If both One.Tel and Hutchinson 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 offer limited competition to the major mobile carriers). 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.

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. As such, the cost of nationally rolling out a new mobile network, or establishing roaming arrangements, may act as a barrier to entry. The extent of that barrier to entry being determined by the relative size of those costs to the revenues a new mobile carrier could expect to generate (with initially a limited mobile subscriber base). The Commission is unable to make such a comparison and can, therefore, only note the possibility that such barriers to entry may exist.

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 five 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 and 1999:

- 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);

- One.Tel and Hutchinson 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 it).

The Commission notes that in the recent past, there has not been a lack of access to spectrum, and accordingly the need to obtain spectrum has not proven to be an absolute barrier to entry. 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, prospective new mobile carriers cannot enter the mobile services market. Therefore, actual acquisition of spectrum is likely to be required to ensure effective competition.

Sunk costs

It is the Commission's understanding that establishing a mobile network involves two key activities that may have associated sunk costs[43] (which may be regarded as barriers to entry). These are:

- rolling out mobile infrastructure, such as transmission towers and base stations; and
- creating brand recognition through advertising and marketing activities.

Rolling out mobile infrastructure

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.[44]

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.

In a *Communications Day* report it was reported that AAPT had claimed "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".[45] Based on this report, the Commission would anticipate lower barriers to entry (because of lower sunk costs) to be 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. 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

[43] Sunk costs are those costs not recoverable by, say, a new mobile carrier in the event that entry to the mobile services market was unsuccessful.
[44] *Competition for long distance mobile telecommunications services*, ACCC, January 2000 p. 26-28.
[45] *Communications Day*, 24 August 2000, p. 2.

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 not so prohibitive as to deter entry. In this regard, the mobile services market has recently seen the entry of two new players, One.Tel and Hutchinson, who are in the process of developing their networks. Having said that, the Commission notes that the network roll-out of One.Tel and Hutchinson has been limited.

Brand

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.[46]

The funds required for advertising and creating brand awareness for new entrants constitute a sunk cost and hence, to some extent, a barrier to entry. That said, it appears that new entrants have access to funds to devote to marketing and increasing their market shares.

The cost of switching networks

Arrangements for the supply for mobile service to end users typically involve the end user entering into a fixed term contract with the service provider (ie. the mobile carrier or reseller). This contract effectively 'ties' the end-user to the service provider for a specific period, generally 12 to 24 months.[47] If customers wish to end their contract earlier than the specified time, a cancellation fee must be paid. This fee is designed to recover up front costs to the provider, such as handset subsidies.

[46] Telecommunications Strategies in Australia - *1999/2000 Mobile Communications Market,* Paul Budde Communication, 1999, p.174-175.
[47] Ibid p.37-38.

Table 3: 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

These figures show an increase in churn rates since 1996, and in fact depict reasonably high rates of churn, indicating potentially low costs of switching networks. However, the Commission understands that the figures provided are likely to 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 increases the cost of switching, and hence may deter a customer from switching, to another network is the need to also change the mobile phone number. At this time, when transferring from one network provider to another at the end of a contract, the mobile phone number must be changed. This may limit opportunities for new entrants to compete for customers.

That said, the Commission notes that mobile number portability will occur from 25 September 2001. This will allow customers to retain their mobile number when switching from one network provider to another. Therefore, even if the churn rates depicted above are driven mostly by the analogue phase out and movements to higher plans within the one network, indicating there may be significant barriers to switching networks, the introduction of mobile number portability is likely to facilitate greater customer churn in future.

Conclusion

The Commission considers there are still some barriers to entry in the mobile services market, particularly the need to actually obtain spectrum and the implicit reliance in such a need for there to be an auction process to allocate spectrum licences.

5.2.3 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.[48]

In that report Cable & Wireless Optus were noted to predict that penetration figures would surge as a result of the popularity of pre-paid services.[49] 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 surge in penetration rates. Currently almost one in two Australian's are reported to own a mobile phone (48.9 per cent penetration).[50] Therefore, the market still appears to be growing.

5.2.4 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 homogenous. Different mobile carriers essentially use mobile origination and termination services to provide the ability to make 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, 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 there are prepaid contracts available.
- Type of handset offered with each call plan - in most instances handsets are offered free, with the call plan chosen dictating handset choices. Different carriers usually offer different handsets with different call plans.
- Extra 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.

[48] *Competition for long distance mobile telecommunications services*, ACCC, January 2000, p. 31.
[49] Ibid, p. 32.
[50] Communications Day, 25 October 2000, p.1.

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. One.Tel offers 'cool services' which provide weather and other informational services over its network. 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. This would seem to suggest that there may be an increasing level of competition in the mobile services market.

5.2.5 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 Commission has limited information regarding the costs associated with providing a mobile call (i.e. the costs associated with the mobile access service, the mobile origination service and possibly the mobile termination service) and therefore cannot comment with any certainty on the relativities of retail prices and costs. However, it notes that downward movements in retail prices for a mobile call should be reflective of decreased costs and/ or increased competition. The Commission, therefore, considers it useful to examine retail prices movements for a mobile call to assist its considerations of the extent of competition in the mobile services market.

The extent of retail price movements for GSM mobile calls over the past four years are outlined in Table 3. 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.[51] 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 fee, mobile access service fees are high and outgoing call charges are low).

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

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: Communications Research Unit

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.

5.3 Conclusion

On the basis of the above discussion it appears that there may 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 some barriers to entry, there are signs that the level of competition is intensifying, with new entry, continued growth in the market, increased product offerings and reductions in retail prices for mobile calls.

6. Comparison of pricing methodologies

A range of regulatory approaches have been proposed for determining access prices for GSM termination by the Commission's consultants and carriers. The proposed approaches are:

- 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 section of the Draft Report outlines these proposed approaches. The next section compares the proposed approaches against the legislative criteria outlined in section 3 of the Draft Report.

6.1 Forbearance

It has been submitted to the Commission 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.

> …Telstra raises the question of whether regulatory intervention in determining pricing principles for GSM access is required at all.[52]

> 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.[53]

> …it is incumbent on regulators to forebear 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:
> *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.[54]

In effect this would require the Commission to have a pricing principle that recommended access prices for GSM termination be set by the market using commercial negotiations.

[52] Telstra submission – Response to the ACCC's Discussion Paper, p. 2.
[53] Cable & Wireless Optus submission, p. 4.
[54] Vodafone submission, p. 3.

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 incremental 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.[55]

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 the GSM originating and terminating services at 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 capital. In addition, it was submitted that pricing at 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 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 (assuming less than full market penetration currently exists).

Setting price equal to short-run marginal cost may promote efficient usage of a service, 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. Furthermore, 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:

[55] *Principles for determining access prices for Domestic GSM Terminating Access and Domestic GSM Originating Access services,* ACCC, December 1999, p. 12-13.

- ‘Total service’ – it measures the cost of production of an entire service (or a production element) rather than the cost of a particular unit.[56] 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.

- ‘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.

- ‘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.

- 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 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

[56] 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 (ie, the opportunity cost of debt and equity used to finance the firm) and depreciation (ie, the decline in economic value of assets) of capital that is specific to the production of the service.

- inhibit the access provider discriminating in favour of one access seeker over another (unless the discrimination is based on differences in costs).[57]

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 principle applies to a particular service will be determined on a case-by-case basis.[58] 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.[59]

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 has 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 such an 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.[60]

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

- 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 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.[61]

[57] *Access Pricing Principles: Telecommunications – a guide,* ACCC, July 1997, p. 28-30.
[58] Ibid, p. 27-30.
[59] Ibid, p. 27-28.
[60] AAPT submission – associated paper 'Pricing termination services' by Nina W. Cornell, p. 6 and PowerTel submission, p. 6.
[61] Vodafone submission – associated paper 'Regulation of GSM Termination Charges: Issues and Options' Chongwoo Choe and Sisira Jayasuriya, p.12, Cable & Wireless Optus submission, p. 68, and Telstra submission – Response to the ACCC's Discussion Paper, p. 5.

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 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.[62] However, it is very difficult to conceive of two-part pricing being used for access pricing and this approach may create barriers to entry (due to the large charge which is unrelated to use).

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.[63]

Another option for allocating common costs, which has specifically been raised in submissions, is the use of Ramsey pricing.[64] 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, the common costs are allocated in greater proportion towards the service which is relatively price elastic, and in lesser proportion towards the service which is relatively price inelastic. 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.

[62] 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.

[63] 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.

Only 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 percentage of capital costs for each equipment type.

[64] Cable & Wireless Optus submission, p. 28-30 and Vodafone submission, p. 27-28.

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 its submission to the Commission, Cable & Wireless Optus were initially supportive of a retail-minus approach stating it would minimise market distortions.[65] 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, Cable & Wireless Optus moved away from supporting retail-minus pricing, preferring market-based pricing.

In its report *Regulating Mobile Operators,* Ovum noted that a retail-minus approach may be used for reducing access prices for mobile termination.[66] 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.

As mentioned above, 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 relatively simply deducting 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

[65] Cable & Wireless Optus submission, p. 70.
[66] *Regulating Mobile Operators – The Road to Effective Competition*, Ovum, Volume 3: GSM termination Rates, 2000, p. 4, 45.

figure.[67] This would provide an estimate of the costs associated with mobile origination and termination for provision of a mobile-to-mobile call.

6.4 Benchmarking the change in access prices

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

- best practice productivity changes for the GSM termination service; or
- the percentage change of each mobile carriers' weighted average retail prices for the overall mobile package (subscription and outgoing call charges).

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.

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 the GSM termination service.[68] It noted that, in such a case, 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.

Benchmarking against total factor productivity changes

Benchmarking the change in access prices for GSM termination against 'best practice' total factor productivity changes 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 the most efficient provision of 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. In relation to historical productivity movements it is noted that while the productivity gains may have represented 'best practice' at the time they were achieved, that 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 used.

[67] 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 40:60 ratio to the retail price less retail/transmission cost figure, rather than halving.

[68] Telstra supplementary submission, p. 2.

Benchmarking against the percentage change of weighted average retail prices for the overall mobile package

Benchmarking the change in access prices for GSM termination against the percentage change of each mobile carriers' weighted average retail prices for the overall mobile package would ensure that the provision of the GSM termination services mirrors the increasingly competitive retail element of the mobile services market. In effect it would ensure that a relevant competitive discipline is placed on GSM termination.

Initial 'starting point'

A 'glide path' pricing rule is intended to effect future access price changes. However, with such a rule it would be necessary to determine an initial 'starting point' from which to then benchmark the change in access prices. Current access prices for GSM termination (as negotiated between mobile carriers and fixed line carriers) would not be an appropriate 'starting point'. This is because such a 'starting point' would benefit the mobile carrier who had negotiated the highest access price (i.e. who was able to sustain the highest access price for GSM termination given the relatively weak competitive forces). The initial 'starting point' could be an estimate of the cost of supplying GSM termination services, or as otherwise determined to be appropriate.

7. An assessment of pricing methodologies against the legislative criteria

The following section of the Draft Report provides the Commission's preliminary views in relation to the pricing methodology that is most appropriate for pricing of the GSM termination service, having regard to the legislative criteria in section 152CR of the Act. It discusses the use of a cost based pricing approach (TSLRIC) and compares it to the use of retail-minus and benchmarking approaches. The Commission also considers the forbearance option. Particular issues raised by submissions are discussed under the relevant legislative criteria.

The Commission refers to its analysis in relation to the effect of control over customer access and consumer ignorance on mobile-to-mobile and fixed-to-mobile calls. Consistent with its discussion in section 4, the following assessment of the appropriate pricing approach, if any, only concerns fixed-to-mobile call termination pricing.

7.1 Long-term interests of end-users

7.1.1 General principles

The Commission has published a guideline explaining what it understands is meant by the phrase 'long-term interests of end-users' (LTIE) in the context of its declaration responsibilities.[69] A similar interpretation would appear to be appropriate in the context of assessing an undertaking or arbitrating an access dispute.

In the Commission's view, particular terms and conditions promote the LTIE if they are likely to contribute towards the provision of goods and services at lower prices, higher quality, or towards the provision of greater diversity of goods and services.[70]

To consider the likely impact on the LTIE of particular terms and conditions in an undertaking or of a determination, the Commission must have regard to the extent to which the terms and conditions or determination (as the case may be), are likely to result in the achievement of the following objectives:

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

[69] *Telecommunications services — Declaration provisions: a guide to the declaration provisions of Part XIC of the Trade Practices Act*, ACCC, July 1999.
[70] Ibid, p. 33.

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.

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.

The Commission interprets the legitimate commercial interests of the supplier as being a reference to the supplier of the declared services — a matter which the Commission considers in the context of the legitimate business interests criterion (below).

7.1.2 Promoting competition and efficient use/investment

The Commission considers it useful to compare the regulatory options, set out in section 6 of the Draft Paper, to determine the most appropriate pricing approach, if any, to promote competition and efficient use/investment.

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.[71]

The Commission considers that the competitive forces which operate in relation to the GSM termination service, are, and will remain in the foreseeable future, relatively weak. This results in higher retail prices for fixed-to-mobile calls. Section 4 of the Draft Report sets out the Commission's analysis and conclusions in this regard.

Submissions to the Commission from Cable & Wireless Optus argued that any regulation of the GSM termination service would diminish consumer surplus. The Commission understands this analysis to be an attempt to compare the consumer surplus gained by a reduction in access prices for GSM termination against the consumer surplus lost by a corresponding increase in mobile access service fees. The Commission does not, however, accept these arguments as it believes that a critical assumption underlying this assessment – effective competition currently constraining access prices for GSM termination (and mobile access service fees) to efficient costs – has not been adequately supported by Cable & Wireless Optus or any other submissions.

Rather, evidence was provided to the Commission that appears to suggest the efficient costs of providing the GSM termination service are considerably lower than current access prices for GSM termination. This is consistent with the Commission's view that control over access to GSM termination and consumer ignorance will allow mobile carriers to sustain high access prices for GSM termination. That is, the competitive forces which operate in relation to the GSM termination service are relatively weak.

Accordingly, the Commission does not consider forbearance would promote competition and efficient use/investment.

Using TSLRIC pricing

In general, the promotion of competition and efficient investment will be achieved by TSLRIC pricing, as outlined in the Commission's telecommunications *Access Pricing Principles*, and discussed in section 6 of this paper. 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. This issue is discussed further under the interests of the access seeker criteria below.

However, there may be circumstances where TSLRIC pricing is not appropriate for the pricing of a declared service. In its *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:

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

- 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.[72]

The Commission considers it useful to consider each of these criteria to determine whether TSLRIC pricing is the appropriate pricing approach for the GSM termination service.

Mobile services market is not well developed

In regard to the development of the mobile services market, submissions to the Commission have argued that:

> Mobile telephony in Australia is a very dynamic, rapidly growing industry. Adoption rates have been high, mobile call rates have come down sharply and the range and nature of services have been continually widening.[73]

The Commission accepts that the mobile services market is relatively new, that the demand characteristics of the market are developing. As detailed in section 5 of this Draft Report, mobile penetration in Australia is increasing and an increasingly greater number of call minutes are being made from and to mobile services. Furthermore, new technologies may alter the nature of mobile services provided in the future, particularly with the introduction of new technologies such as 2.5 and 3G services over the next few years.

Forces of competition constraining prices to efficient levels?

The Commission notes that, as concluded in section 5 of this Draft Report, the mobile services market appears to be increasingly competitive, particularly the retail element of the market. This competition is likely to intensify in the foreseeable future.

However, as noted above, the Commission considers that the competitive forces which operate in relation to the GSM termination service are, and will remain in the foreseeable future, relatively weak. As a result, mobile carriers are able to sustain high access price with the likely following effects:

- there may be allocative inefficiencies, including potential over investment in mobile networks, caused by high prices of fixed-to-mobile calls and low prices of mobile calls (cross-subsidised from the additional revenues from GSM termination); and
- integrated mobile carriers also providing fixed line services (eg Telstra and Cable & Wireless Optus) may notionally pay lower internal transfer prices than those paid by access seekers (eg AAPT and Primus) for GSM terminating services creating a potential for anti-competitive pricing conduct in relation to fixed-to-mobile calls.

[72] *Access Pricing Principles: Telecommunications – a guide,* ACCC, July 1997, p. 27-28.
[73] Vodafone's submission – associated paper 'Regulation of GSM Termination Charges: Issues and Options', Chongwoo Choe and Sisira Jayasuriya, p. 1.

These issues can be distinguished from the more general market power issues facing pricing of upstream bottleneck services (e.g. pricing access where a monopoly carrier controls the wholesale element of a market and is also a significant player in the retail element of the market). The Commission also notes that the benefits of TSLRIC regulation in these circumstances are less clear-cut than in cases where there is sustained market power by one carrier.

The GSM termination service is necessary for competition in dependent markets

The GSM termination service is a necessary input to provide fixed-to-mobile calls. As fixed-to-mobile calls are part of a pre-selection basket, with national long-distance and international calls, pricing for fixed-to-mobile calls may also impact on competition for these call types.

However, the effect on competition in the downstream market in which fixed-to-mobile calls are supplied, of sustained high access prices for GSM termination, may be relatively small. It is noted that, to the extent that high access prices for GSM termination are passed through to end-users, and retail prices are sustained at high levels, demand may be reduced and therefore the size of the market, and opportunities for entry, may be reduced. However, the Commission would note that the market in which fixed-to-mobile calls are supplied appears to be subject to competitive forces at the retail level, as is evidenced by significant price reductions for long distance and international calls over the last few years. Therefore, while an increasingly competitive focus may be placed on the provision of fixed-to-mobile calls in the immediate future, the Commission would question the extent of new entry (and the competitive benefits of such new entry) which might occur if access prices for GSM termination were lowered.

Other issues relating to the use of TSLRIC pricing

The Commission also notes that TSLRIC pricing would present a number of difficulties.

Firstly, a mobile network could be costed:

- on the basis of actual technology in use and existing network configurations;
- on the basis of best-in-use technology of a network configuration; or
- on the basis of forward looking technology, as if the most efficient technology available were used.

In relation to the third option, it could be assumed that a 'scorched node' network configuration is used (rebuilding with the existing higher-level network configuration) or a 'scorched earth' network configuration (rebuilding with an optimised network). The Commission has previously taken 'scorched node' and 'best-in-use' approaches when costing the PSTN network. Consistent with these approaches, if it was to determine the TSLRIC access price for GSM termination the Commission would need to consider which mobile network to model and what is 'best-in-use' technology. The decision-making process surrounding which network to model may be particularly problematic, with three existing GSM networks and an emerging GSM network.

Secondly, TSLRIC 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. For example, submissions to the Commission argued that common costs should be allocated in greater proportion towards access prices for GSM termination to allow network externalities (benefits that flow to fixed line and mobile subscribers from being able to call and be called by another mobile subscriber) to be internalised.[74] While the Commission believes this should not preclude the application of TSLRIC pricing, it suggests that the Commission should only use intrusive regulation of this manner when the benefits of doing so are clear.

Using a retail-minus approach

The retail-minus approach links access prices for GSM termination to retail prices for mobile calls. Given the increasingly competitive nature of the mobile services market, and decreasing retail prices likely to occur, this pricing approach would impose the competitive discipline of the retail element of the mobile services market on access prices for GSM termination. These benefits would then be passed on to end-users making fixed-to-mobile calls.

A particular issue in using the retail-minus approach is determining the initial retail price for a mobile-to-mobile call. It is noted that each mobile carrier currently has a large number of mobile plans with different mobile access service fees and call charges (for both mobile-to-mobile and mobile-to-fixed calls). These are likely to reflect different allocations of common costs for low and high volume end-users and it would therefore be unclear whether a resulting estimate would accurately reflect the costs (including common costs) associated with GSM termination. In addition, it would be difficult to determine whether the resulting estimate would reflect the optimal allocation of common costs such that network externalities are internalised by the market.[75]

Use of a benchmarking approach

Benchmarking the changes in access prices would allow for the benefits of increased productivity of supplying mobile calls, or increased competition in the retail element of the mobile services market, to be passed on to fixed-to-mobile callers (depending on the approach used). As this approach creates a 'glide path' for changes in access prices it will ensure that increasingly efficient investment and usage decisions are made, as the access prices are reduced from their high levels.

The Commission considers benchmarking access prices for GSM termination against the percentage change of each mobile carriers' weighted average retail price for the overall mobile package is more appropriate than benchmarking against best practice productivity changes. This is because it ensures that the provision of GSM termination moves in line with, and mirrors, the increasingly competitive mobile services market. In this way a relevant competitive discipline is placed on GSM termination. Furthermore, in a practical sense it would be relatively easier to observe the percentage change in retail prices rather than

[74] Cable & Wireless Optus's submission, p. 20-28 and Vodafone's submission, p. 28.
[75] In particular, it may be efficient to allocate common costs more heavily towards termination services, because of relative elasticities of demand, to promote network externalities and to capture economies of scale.

estimates of prospective productivity changes for mobile services. This increases the probability that commercial negotiations would be reached.

It was noted in section 6 of this Draft Report that benchmarking changes in access prices would require the determination of an initial ‘starting point’. Current access prices for GSM termination (as negotiated between mobile carriers and fixed line carriers) were not considered to be an appropriate ‘starting point’. This is because they would benefit the mobile carrier who had negotiated the highest access price (i.e. who was able to sustain the highest access price for GSM termination given the relatively weak competitive forces). The Commission considers that an appropriate ‘starting point’ is the lowest current access price for GSM termination (as negotiated between a mobile carrier and a fixed line carrier). This access price will then provide a consistent ‘starting point’ for all mobile carriers, from which to determine the ‘glide path’ that is unique to each mobile carrier.

The Commission has considered whether benchmarking the change in access prices would create a disincentive for mobile carriers to slow retail prices reductions for the overall mobile package, as to do so ensures that access prices for GSM termination do not fall. The Commission notes that such a disincentive may exist; however, it considers that the increasingly competitive mobile services market, and in particular the retail element of the market, should ensure downward retail price movements continue.

Further, under such a benchmarking approach the Commission would envisage monitoring the market to determine whether retail prices are continue to fall, with corresponding benefits being passed on to fixed-to-mobile callers through GSM termination prices.

Conclusions about the most appropriate pricing approach

The Commission believes that a cautious approach to regulating the GSM termination services is appropriate, having regard to the benefits of any regulation, the characteristics and overall competitiveness of the market and the issues surrounding the use of TSLRIC pricing. 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.

On balance the Commission considers that a benchmarking approach is the most appropriate pricing approach to promote competition and efficient use/investment. Under such an approach each mobile carriers’ access price for GSM termination would be pegged to the percentage change in their weighted average retail prices for the overall mobile package (subscription and outgoing call charges).

The Commission notes that a significant difference between benchmarking changes in access prices and TSLRIC pricing is that the former only establishes a ‘glide path’ for price changes, rather than actually setting the access price. TSLRIC pricing would, therefore, appear to *prima facie* better meet the legislative criteria by ensuring access prices are moved to costs. In the case of the mobile services market, however, the Commission does not accept this view. It considers that, consistent with the increasing competitive forces in the mobile services market and the nature of the market failure, it is more appropriate for the Commission to take a less intrusive approach to regulation for mobile services.

7.1.3 Any-to-any connectivity

The Commission does not consider that this criterion assists with deciding between the pricing approaches to be used in relation to GSM termination.

7.2 Legitimate business interests of the access provider

The Commission is of the view that the concept of legitimate business interests should be interpreted in a manner consistent with the phrase 'legitimate commercial interests' used elsewhere in the Act. Accordingly, it would cover the carrier's, or carriage service provider's, interest in earning a normal commercial return on its investment. However, it is unlikely that legitimate business interests extend to achieving a higher than normal return through the use of market power.

As noted above, the Commission is of the view that the competitive forces on access prices for GSM termination are relatively weak and, as such, allow mobile carriers to sustain high access prices. This, combined with the evidence received by the Commission that suggests current access prices are above efficient costs, would indicate that current access prices for GSM termination will incorporate a higher than normal return. This would suggest that TSLRIC pricing may be appropriate to ensure normal returns are made. However, the competitive state of the mobile services market should ensure that any above normal profits due to the provision of all relevant mobile 'joint product' services are not sustainable in the longer term.

7.3 Interests of the access seeker

Access seekers who have rights to use a declared service will, in general, use that service as an input to supply carriage services, or a service provided by means of carriage services, to end-users. The ability of an access seeker to compete in the supply of a service in a dependent market should be based on the cost and quality of its service relative to its competitors. For example, an access price should not artificially protect a vertically integrated access provider from being displaced by a more efficient access seeker in a downstream market.

In relation to this criterion the appropriate dependent market to consider is that in which fixed-to-mobile calls are supplied. As noted above, to the extent that high access prices for GSM termination are passed through to end-users, and retail prices are sustained at high levels, demand may be reduced and therefore the size of the market, and opportunities for entry, may be reduced. However, the Commission would note that the market in which fixed-to-mobile calls are supplied appears to be subject to competitive forces at the retail level and the extent of new entry (and the competitive benefits of such new entry) is questionable.

As also noted above, the evidence available to the Commission suggests that access prices for GSM termination incorporate higher than normal returns. This may create differences in the internal transfer price for an integrated fixed line/mobile carrier and fixed-line only carrier, creating the potential for anti-competitive conduct. However, the Commission notes that overall opportunities for anti-competitive conduct may be limited by the overall competitiveness of the mobile market.

Further, the anti-competitive conduct provisions contained in the Act provide the Commission with scope to respond to anti-competitive cross-subsidisation of fixed line services from mobile services. In addition, under a benchmarking approach one of the purposes of a monitoring program would be to ensure that there is no anti-competitive pricing action by integrated mobile carriers, in relation to fixed-to-mobile calls.

7.4 The direct costs of providing access to the declared service

It is noted that that the issues relevant to this criterion are considered in the sections on the LTIE (efficient use of, and investment in, infrastructure) and the legitimate business interests of access providers.

7.5 The value to a party of extensions, or enhancements of capability, where the cost is borne by someone else

The Commission does not consider that this criterion assists with deciding between the pricing approaches to be used in relation to GSM termination.

7.6 The operational and technical requirements necessary for the safe and reliable operation of a carriage service

The Commission does not consider that this criterion assists with deciding between the pricing approaches to be used in relation to GSM termination.

7.7 The economically efficient operation of a carriage service

It is noted that the issues relevant to this criterion are considered in the section on the LTIE (the efficient use of, and investment in, infrastructure).

7.8 Conclusions in relation to the appropriate pricing methodologies

It is the Commission’s view that on balance the most appropriate pricing methodology is benchmarking the change in access prices. This approach provides each mobile carrier’s access price for GSM termination will:

- initially be set at the lowest current access price for GSM termination in the market; and
- then be pegged to the percentage change in its weighted average retail prices for mobile services (subscription and retail calls).

The Commission notes that it also proposes to establish a monitoring program to ascertain:

- that an increasingly competitive mobile services market is driving retail prices (and therefore access prices for GSM termination) down;
- whether there is an increasing competitive focus on GSM termination (e.g. increased evidence of closed user groups); 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.

A monitoring program would also include a review of the proposed pricing approach in 2 years time.

The Commission notes that a significant difference between TSLRIC pricing and benchmarking changes in access prices is that the later only establishes a ‘glide path’ for price changes, rather than actually setting the access price. TSLRIC pricing would, therefore, appear to better meet the legislative criteria by ensuring access prices are moved to costs. In the case of the mobile services market, however, the Commission does not accept this view. It considers that, consistent with the increasingly competitive forces in the mobile services market, it is more appropriate for the Commission to take a less intrusive approach to regulation.

The Commission also notes that the GSM termination service is currently the only declared (active) mobile service 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 high access prices), however, may equally apply to other mobile termination services. It may be appropriate, therefore, to extend the GSM service declaration so that it also applies to other mobile technologies. The Commission intends to consider this issue in 2001. It notes that any decision to extend (or reduce) the scope of the current service declaration can only occur after a public inquiry process.

Attachment 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 in relation to the GSM origination and termination services.

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

* Disputes in relation to the Domestic GSM Originating Access Service have been withdrawn.

Attachment 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* and the subsequent roundtable held in March 2000 to discuss the appropriate pricing principles.

Initial submissions received from:

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

Supplementary submissions received from:

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

Attachment C – GSM origination

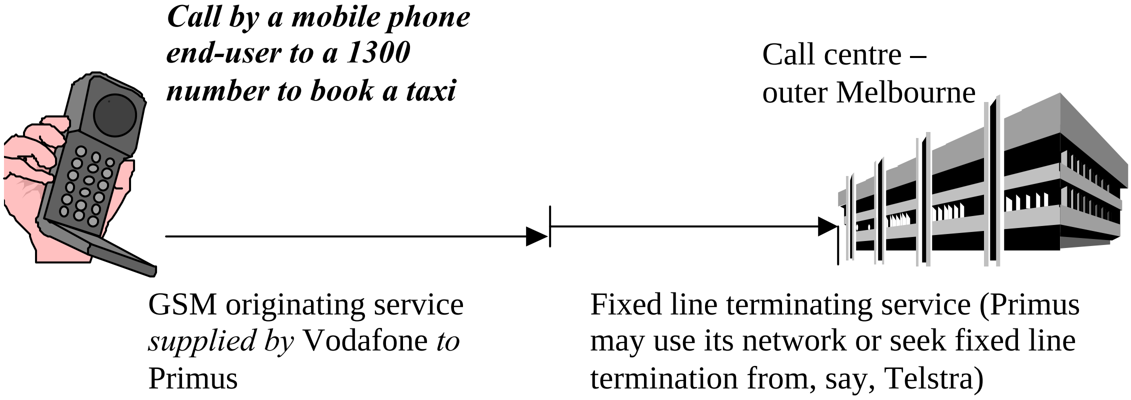
The GSM originating service is a wholesale service used by carriers and service providers to supply particular call products to end-users. As noted in section 1 of this Draft Report, it was deemed to be declared under s. 39 of the *Telecommunications (Transitional and Consequential Amendments) Act 1997*. 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.[76]

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*.[77] 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.

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



[76] *Deeming of Telecommunication Services*, ACCC, June 1997, p. 42.
[77] *Deeming of Telecommunication Services*, ACCC, June 1997, p. 19.

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 terminating 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).

Attachment D – Addressing consumer ignorance

Several submissions to the Commission noted that it may be preferable to address the issue of consumer ignorance by regulating at the source of the problem. That is, by attempting to increase consumer knowledge of pricing. 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[78];
- recorded voice announcements at the beginning of a call to indicate the mobile carrier being called[79];
- 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 indicating differentials in access prices for GSM termination and retail prices, or the retail prices and any differences between rates to mobile carriers[80]; 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.[81]

The Commission considers that market failures are generally best addressed at the source.

At present it appears that fixed line carriers have only one (average) price for a fixed-to-mobile call, regardless of which mobile carrier is being called. Under such a pricing structure the benefits of providing additional information to end-users making fixed-to-mobile calls are likely to be relatively small. This is because the additional information, which goes to differentiating which mobile carrier is being called and that mobile carrier's access price for GSM termination, is unlikely to constrain access prices. To do so it would require fixed-to-mobile callers to realise how the access price for GSM termination affects the one (average) retail price they face and change their calling behaviour as a result.

The Commission notes that fixed line carriers providing fixed-to-mobile calls already have the opportunity to provide additional information, in some of the ways proposed in submissions. The fact that they currently do not provide such information may indicate that, given the existing pricing structure for fixed-to-mobile calls, the benefits of providing additional information are limited.

[78] *Termination Charges for Mobile Phone Networks – Competitive Analysis and Regulatory Options*, Gans J.S and King S.P, 1999, p. 21-22.
[79] Cable & Wireless Optus submission, p. 71-72.
[80] In relation to this last point, 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.
[81] Vodafone submission, p. 31 and supplementary submission, p. 2-4.

In addition, the Commission's powers in relation to requiring fixed line carriers to provide end users making fixed-to-mobile calls with information, as proposed in submissions, may be limited to the context of the bilateral access disputes it is currently arbitrating. Given this, and the prevailing pricing structure for fixed-to-mobile calls, the Commission questions the benefits, in this instance, of regulating at the source.

However, it is possible over a longer period that fixed line carriers may change the pricing structure for fixed-to-mobile calls or that the provision of additional information, of the nature outlined above, may provide an impetus for disaggregated pricing structures. In this regard the Commission notes industry may wish to consider the benefits, if any, from the provision of information by fixed line carriers. The Commission would consider any such developments as part of its review of the proposed pricing approach.

Finally, 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 will 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.

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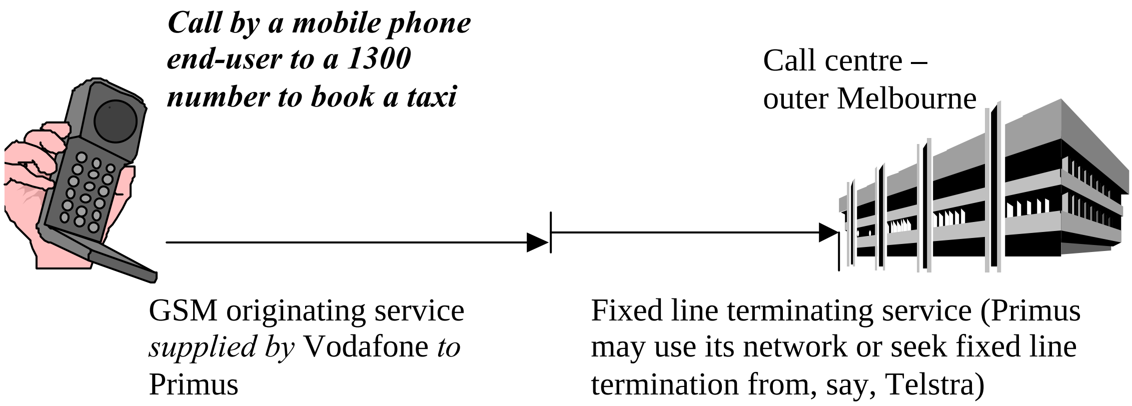
The GSM originating service: use of the GSM originating service to supply a 13/1300 or 1800 call



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[83] Ibid, p. 19.

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 terminating 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).

Attachment D – Addressing consumer ignorance

Several submissions to the Commission noted that it may be preferable to address the issue of consumer ignorance by regulating at the source of the problem. That is, by attempting to increase consumer knowledge of pricing. 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;[84]
- recorded voice announcements at the beginning of a call to indicate the mobile carrier being called;[85]
- 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 indicating differentials in access prices for GSM termination and retail prices, or the retail prices and any differences between rates to mobile carriers;[86] 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.[87]

The Commission considers that market failures are generally best addressed at the source.

At present it appears that fixed line carriers have only one (average) price for a fixed-to-mobile call, regardless of which mobile carrier is being called. Under such a pricing structure the benefits of providing additional information to end-users making fixed-to-mobile calls are likely to be relatively small. This is because the additional information, which goes to differentiating which mobile carrier is being called and that mobile carrier's access price for GSM termination, is unlikely to constrain access prices. To do so it would require fixed-to-mobile callers to realise how the access price for GSM termination affects the one (average) retail price they face and change their calling behaviour as a result.

The Commission notes that fixed line carriers providing fixed-to-mobile calls already have the opportunity to provide additional information, in some of the ways proposed in submissions. The fact that they currently do not provide such information may indicate that, given the existing pricing structure for fixed-to-mobile calls, the benefits of providing additional information are limited.

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

[85] Cable & Wireless Optus submission, p. 71-72.

[86] In relation to this last point, 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.

[87] Vodafone submission, p. 31 and supplementary submission, p. 2-4.

In addition, the Commission's powers in relation to requiring fixed line carriers to provide end users making fixed-to-mobile calls with information, as proposed in submissions, may be limited to the context of the bilateral access disputes it is currently arbitrating. Given this, and the prevailing pricing structure for fixed-to-mobile calls, the Commission questions the benefits, in this instance, of regulating at the source.

However, it is possible over a longer period that fixed line carriers may change the pricing structure for fixed-to-mobile calls or that the provision of additional information, of the nature outlined above, may provide an impetus for disaggregated pricing structures. In this regard the Commission notes industry may wish to consider the benefits, if any, from the provision of information by fixed line carriers. The Commission would consider any such developments as part of its review of the proposed pricing approach.

Finally, 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 will 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.