and the price of internet access, then, in a similar way to SMS and Instant Messaging (described above in Section 1.9.5.4), they can set charges for internet access in such a way as to avoid any competitive pressure on its charges for voice termination.

Also, service providers also have the ability to impact on the Quality of Service for VoIP calls. In practice, this may allow certain types of internet services and not others. In addition, they may include restrictions in their customer contracts to prohibit VoIP services or may simply technically bar the use of certain types of services (such as VoIP) on their networks.

The Authority notes that many service providers offering VoIP services allow calls to be made via VoIP to any mobile or fixed line. However, under this calling scenario the VoIP service provider is still required to pay the standard termination charge. Hence, there is no competitive pressure applied to mobile termination charges. However, the Authority is aware of new more sophisticated devices available that are able to make and received end-to-end calls. In these instances, IP addresses are used to identify the parties to the call. Such calls would typically be carried on the licensees data channel and users would be charged at the licensees' data rates; no voice call termination charges could be payable. The ability to make calls by bypassing voice call termination charges in this way is dependent on the user having the ability to install appropriate software on their mobile phone or having access to a computer. It is also dependent on users being able to access, from their device, the internet providers that offer VoIP services.

The Authority considers that these type of VoIP services (and the devices that are needed in order for these services to work) are still in their infancy and that the penetration of these services will be too low over the period of the market review (2010-2013) to offer a effective constraint on the price of wholesale call termination services. This is compounded by the relatively high cost of the devices needed for these services to work – which is likely to be beyond the reach of the majority of South African subscribers.

1.9.5.6 Call Back arrangements (including 'Please Call Me' services)

Call back refers to a situation where the direction of a call is 'reversed' and the calling party is called back by the called party, either in an *ad hoc* manner or through a commercial scheme. Call-back has the potential to render an increase in termination charges unprofitable only if the profitability of outgoing calls is lower than that of incoming calls, and call-back is used by a sufficient number of subscribers.

The Authority notes that all three mobile licensees offer products that allow subscribers to send a 'please call me' SMS in order to encourage call back. "Please Call Me[30]" "Call Me[31]" or "Call Me Back[32]" SMS' are a significant product in the South African Market and allow one mobile user to ask another to call them, by sending a simple free network message. The South African market generates a total of 1.1 billion" Please Call Me " SMS' per month compared to 0.79 billion other SMS per month and approximately 2.6 billion mobile to mobile calls per month[33].

From a caller's and called party's perspective call-back is not as convenient as a normal call. This is notwithstanding the fact that a significant number of subscribers appear to use 'please call me' services. The inconvenience of call-back services, compared with direct calls, is likely to limit the extent to which they are able to constrain mobile termination charges. For instance, a 'please call me' service is unlikely to provide the benefits of immediacy of contact that a standard voice call delivers. The receiver of a 'please call me' text may not respond immediately by calling back to the other party, whereas a standard call is more likely to be answered by the called party.

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[30] Vodacom, http://www.vodacommobilemedia.co.za/media_solutions_audience_platforms_call_me.html
[31] MTN (http://www.mtn.co.za/MTNServices/MessagingServices/Pages/SMS.aspx) and Vodacom (http://www.vodacom.co.za/services/callme_how.jsp)
[32] Cell C, http://www.cellc.co.za/content/services/other.asp
[33] Source: Analysis of licensee traffic data for the 12 months to June 2009.

The Authority considers that one reason for the popularity of 'please call me' services may be the high cost of calling that is currently faced by subscribers who make use of 'please call me' SMS services. Hence, in a market where there is a significant number of low income subscribers, the provision of 'please call me' services is a commercial response by licensees to promote more calling minutes. The revenues from 'please call me' services come in the form of (lower) wholesale revenues (more call termination revenues) compared to the equivalent revenues that could be obtained from call origination. However, by encouraging subscribers to engage in call back behaviour, licensees are able to increase revenues (through higher call termination minutes), compared to the alternative where subscribers would face a price barrier to making outbound calls.

Because licensees provide both call origination and 'please call me' services (that encourage call back) to their own subscribers, there are no incentives on them to introduce a service of a price and quality such that it could act as an effective substitute for their own service (call termination). In this way, a 'please call me' service should be seen as a way to increase marginal revenues rather than as an effective substitute for call origination services. For example, imagine a scenario where the pricing and popularity of 'please call me' services led to a situation where the use of call back was at a level that it actually led to significant reductions in call origination services (and hence pressure on the level of call termination rates). In this scenario, licensees could choose to alter the pricing structure of the 'please call me' service in order to reduce its effectiveness as a demand side substitute and hence remove the threat that it had on the level of call termination rates. This simplified example shows that there is no reason to believe that licensees would have any commercial incentives to provide services that act as effective demand-side substitutes for wholesale call termination.

In the 2007 Findings Document, the Authority discussed in detail evidence on expected switching and required switching in response to marginal changes in the price of wholesale call termination (see Section 3.5.6.1 of the 2007 Findings document). The Authority notes the conclusions of that analysis are still relevant but consider that it is not necessary to repeat the arguments in this document.

Call back is not a sufficient retail demand side substitute to constrain an operator from pricing wholesale call termination above competitive levels. The existence of such services does not influence the definition of the market for fixed and mobile wholesale call termination.

1.9.5.7 Least Cost Routing

Least Cost Routing (LCR) is somewhat similar to SIM swapping however the network swapping occurs at the higher end of the market and is automated. Another feature is that it generally requires substantial set-up costs (such as PABX systems) as well as the need to generate large amounts of calls in order to generate low on-net call rates. There are a number of commercial LCR licensees in South Africa. Business use LCR as an alternative to making traditional F2M calls – the call is switched by the LCR provider so that it is presented to the mobile operator as an 'on-net' call; hence taking advantage of the price difference between retail off-net and on-net calls.

In the 2007 Findings Document, the Authority considered whether LCR was an effective retail demand-side substitute for wholesale call termination services. The Authority concluded that the existence of LCR does not warrant a broadening of the market beyond wholesale call termination on the network of the termination provider. This was based on, amongst other things, the following analysis:

- That even at existing pricing levels, there would need to be a high amount of switching for LCR to be an effective substitute – and hence constrain the level of call termination charges. This was caused mainly because licensees will still earn substantial revenues from customers switching from an off-net to an on-net call – and hence it would require a substantial amount of switching for it to constrain the commercial incentives to set above cost wholesale call termination rates;
- That it is unlikely that sufficient switching will occur (even at current pricing) for it to constrain the price of wholesale call termination. This is because there are unlikely to be enough

remaining customers who are not already using LCR services to generate the amount of switching needed;and
- That wholesale call termination rate levels appear to have remained unaffected by the impact of LCR services.

Consistent with the conclusions of the 2007 Findings Document, the Authority does not consider that LCR influences the definition of the market for wholesale call termination.

1.9.5.8 Community Service Telephones

Community Service Telephones (CSTs[34]) are fixed location payphones that run on mobile technology. They were launched in order to fulfil social obligations, and as such are offered at a discount to standard calls, both in terms of the retail and wholesale price. The wholesale mobile interconnection fee is R0.0688 (excluding VAT for off peak and peak). The retail price is set at a flat rate of R0.90 per minute.[35]

Some stakeholders have argued that CSTs constrain wholesale mobile call termination rates.[36] Consistent with the views expressed in the 2007 Findings Document, the Authority does not consider that CSTs provide an effective alternative to constrain wholesale mobile call termination rates. In addition, the Authority considers that a policy driven discount focused on a specific income group and geographical area is not relevant to the consideration of commercially determined wholesale mobile or fixed call termination rates.

The Authority provided detailed reasoning for its views in its 2007 Findings Document and these are not repeated in this document. The views of the Authority are that CSTs are not in the same market as off-net calls and hence do not constrain the prices of wholesale mobile call termination rates. This is because:

- CSTs are associated with significantly different quality and functionality when compared to standard mobile calls; and
- A 5-10 per cent increase in wholesale mobile call termination is unlikely to lead to a material impact on the demand for mobile calls (as customers shift purchases to CSTs) because the majority of income constrained customers are likely to have already shifted consumption to CSTs where possible.
- Licensee data at the end of June 2009 indicates that there are a total of approximately 255,000 CSTs currently in place in South Africa compared with an estimated 135,000 public payphones.
- Set against a total subscriber base of 48 million mobiles, the opportunity for a significant shift of traffic in response to a price increase is very limited.
- The large differentials in retail price also provide evidence that CSTs and standard off-net mobile calls are not in the same market.

The Authority finds that the large differentials in pricing, functionality and quality mean that CSTs are not in the same market as standard off-net mobile calls and, as a result, are unlikely to constrain wholesale mobile call termination to cost.

1.9.6 Retail Demand-Side Substitution for fixed services

Demand side substitution at the retail level for fixed services may affect the wholesale market definition of fixed call termination if:

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[34] See Telkom Interconnection Agreements with Cell C (clause 4.1.1.1.2) and Vodacom (clause 5.2.5.1.2) which refers to a 25 % discount on the rate for national calls.
[35] See, for example, http://www.vodacom.co.za/about/community_franchise.jsp, http://www.cellc.co.za/content/businessopportunities/cst.asp
[36] Both MTN and Vodacom argued that CST constrain wholesale call termination rates in their submissions during the 2007 Findings document consultation phase.

- any increase in the price of wholesale fixed call termination translates into higher retail prices for fixed calls; and
- the relative prices of alternatives (calling to a mobile or to a Voice over Broadband line) mean increased retail prices make calling fixed lines less attractive in comparison.

Other factors relevant to fixed line demand-side substitution include the convenience of calling a subscriber's mobile number (e.g., value of higher likelihood of immediate communication) and subscribers calling patterns regarding their use of different calling alternatives.

The range of potential retail demand-side substitutes for a standard fixed call is discussed below.

1.9.6.1 On-net fixed calls as a substitute for mobile to fixed calls[37]

For a customer that has both a fixed line and a mobile phone, calling the mobile phone provides an alternative to calling the fixed line.[38] This is not necessarily the case in reverse. However, whether alternatives to calling a consumer on a landline are effective depends on their relative prices. The price differential between a call from a mobile and a call from a fixed line depends on the calling network, as discussed below.

It is difficult to compare the prices of actual cost of mobile to fixed calls, given the wide variety of different packages offered by the mobile licensees. For instance, different packages offer different amounts of bundled minutes. A review of out-of-bundle call costs also show a wide variety of rates which depend on the type of package, whether the customer is prepaid or contract and whether the call is made in peak or off-peak times. Some examples of the 'out of bundle' cost of calling a fixed line from a mobile are presented in Table 1.2. These rates are much higher than the equivalent costs of making an on-net fixed to fixed call (which costs on average between R0.21 and R0.65 per minute for Telkom customers depending on distance and whether the call is made during peak or off-peak times).[39]

Table 1.2: Examples of the 'out-of-bundle' per-minute mobile to fixed retail call costs in South Africa

Service Provider and Package name	Price per minute
Cell C	
- easychat standard	R2.50
- easychat all day	R1.50
- easychat per second	R2.85
- Businesschat standard	R1.15
- Businesschat 1000	R0.99
MTN	
- Anytime 50	R2.85
- Anytime 1500	R1.50
- Off-peak 50	R1.25
- MTN One-Rate	R1.86
- Call per second (off-peak)	R1.19

[37] The Authority notes that off-net fixed calls are not relevant as a potential demand-side substitute as the revenues obtained by the terminating operator remain unchanged (that is; the terminating fixed operator charges the same termination fee for incoming call, whether it be from a mobile of fixed network). Hence the focus of this section is on the effectiveness (or otherwise) of on-net fixed calls as a demand side substitute to constrain wholesale fixed call termination

[38] Refer to Figure 3.1 or a graphical depiction of the range of calling scenarios available in South Africa.

[39] Prices obtained from the Telkom website for conventional calls. http://www.telkom.co.za/common/pricelist/prices/local/custtomer_to_automatic_exh.html (as of January 2010). Note that all calls have a ZAR0.65 minimum call cost. Prices are higher for calls made using a fixed PrepaidFone service.

Service Provider and Package name	Price per minute
Vodacom	
- Vodago (peak)	R2.50
- Vodago (off-peak)	R1.40
- Talk 1000 S (peak)	R0.99
- Talk 1000 S (off peak)	R0.90
- Talk 75 (peak)	R2.50

Source: MTN, Vodacom, and Cell C websites, as of February 10, 2010.

The Authority considers it is highly unlikely that on-net fixed-to-fixed calls are an effective substitute for mobile-to-fixed calls (and hence an effective demand side substitute in response to a SSNIP in wholesale fixed call termination). The Authority's reasoning is discussed in detail in the 2007 Findings document (in Section 3.5.7.2). The view of the Authority is summarised below:

- Many mobile subscribers in South Africa do not have a fixed line and, as a result, they are unable to substitute from mobile-to-fixed to fixed-to-fixed (the penetration of mobiles is already over 100 per cent while the penetration of fixed lines remains just above 10 per cent). This reduces the effectiveness of fixed-to-fixed calls as a substitute for mobile-to-fixed calls;
- Even where callers have a fixed line, they need to be a in certain location to use it (using a fixed line means a substantial reduction in call flexibility and functionality compared to using a mobile to call a fixed line);
- Licensees are likely to have already segmented the market and subscribers have selected their calling options already. It is unlikely that changes in marginal prices will impact on demand;
- Mobile-to-fixed calls are typically significantly more expensive than on-net fixed-to-fixed calls. Even if a 5-10 per cent increase in the price of wholesale fixed call termination by a given operator is fully passed through by other fixed network licensees to their calling party retail customers, these customers will only face a very small increase in retail prices. Hence demand elasticity would need to be very high in order to have enough customers switching from mobile-to-fixed to fixed-to-fixed for it to constrain wholesale fixed termination rates;
- Mobile customers may have bundled minutes that will mute any demand substitution incentives as a result of higher fixed termination; and
- It is unclear whether a switch from mobile-to-fixed to on-net fixed-to-fixed will have an adverse impact on profitability for the fixed terminating provider. While the operator will lose wholesale termination revenues, it will gain retail revenues from customers making on-net calls.

1.9.6.2 Mobile to Mobile as a substitute for mobile to fixed and off-net fixed to fixed calls

It is possible that, in response to a price increase in mobile-to-fixed calls, callers switch to calling the desired party using their mobile. However, the Authority considers that any switching that does occur will be ineffective as a demand-side substitute for mobile-to-fixed calls and will not constrain wholesale fixed call termination.

The Authority's reasoning is discussed in detail in the 2007 Findings document (in Section 3.5.7.3). The view of the Authority is summarised below:

- Not all calls to fixed lines are possible to substitute to a mobile number;
- A 5-10 per cent increase in wholesale fixed call termination will have a very small impact on retail prices for calling a fixed line. Hence elasticity would need to be very high for sufficient switching to occur (from M2F and off-net F2F) and for this to be an effective demand-side substitute to constrain wholesale fixed call termination;
- Compared to F2M and off-net F2F, M2M calls are expensive (both off-net and on-net). It is unlikely that subscribers will respond to an small increase in the price of calling a fixed line by switching to a higher priced alternative; and

- There is no evidence to suggest that the large increase in mobile penetration in recent years (and hence greater opportunities for mobile-to-mobile calls) has had any constraining influence on the price of wholesale fixed call termination.

1.9.6.3 Voice over Internet Protocol (VOIP)

VoIP is another potential constraint on the price of wholesale fixed call termination. In particular, both managed VoIP services (e.g. VoIS offered by Internet Solutions[40]) and unmanaged voice over the public Internet (e.g., Skype) can provide alternatives to reaching an end user on their fixed line.

Voice services using VoIP (and the public internet) often use a fixed number and calls to those lines cost the same as a call to a landline. In addition, these services may allow free calls between subscribers.

Despite these existing alternatives, which generally cost the same or less than calls to traditional fixed lines, the Authority believes that they are unlikely to constrain wholesale fixed termination rates for the following reasons:

- Low level of broadband[41,42] and 3G penetration in South Africa, which means that there are only a small number of consumers able to use VoIP services as an alternative to a fixed call;
- Both parties need to be online and subscribed to a VoIP services to benefit from the lower retail rates (compared to traditional voice services);
- VoIP tend to have lower quality of service compared to standard fixed voice services; and
- Calling an end-user's VoIP line from a fixed or mobile line would require having knowledge of the called parties second fixed number. It is currently less common for consumers to distribute to their contacts multiple landline numbers.

The Authority considers that VoIP is still too new a product to act as a demand side substitute and constrain wholesale fixed line call termination. However, the Authority recognises that VoIP has the potential to become an effective substitute for fixed line call termination over time. However, this will depend in large part on greater penetration of personal computers in South Africa. The Authority will monitor the developments of VoIP services in South Africa.

1.10 Supply-side substitution

Supply-side substitution occurs when, in response to a rise in the price of a product, alternative suppliers would quickly enter the market to provide a substitute product and thereby constrain prices increases. This is due to the price increase becoming unprofitable for the hypothetical monopolist. Supply-side substitution can be examined both at the retail and wholesale level.

1.11 Wholesale supply-side substitution

For wholesale supply-side substitution to be an effective constraint on wholesale call termination charges, there have to be other firms (either new or existing) that are able to switch production relatively quickly to provide wholesale call termination services to a specific subscriber of another operator in response to an increase in wholesale call termination charges.

[40] http://www.is.co.za/vois/VoIS.htm
[41] The broadband penetration level is estimated to be 2 per cent in South Africa, which is based on an ITU estimate of 2 million broadband customers. .The ITU define broadband as internet data speeds of at least 256 kbit/s, in one or both directions. See http://www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators_e_rev2.pdf
[42] See: http://www.search.gov.za/info/previewDocument.jsp?dk=%2Fdata%2Fstatic%2Finfo%2Fspeeches%2F2009%2F09112010051001.htm%40Gov&q=(+((s+nyanda)%3CIN%3ETitle)+)+%3CAND%3E(+Category%3Cmatches%3Es+)&t=S+Nyanda%3A+National+Broadband+Policy+Colloquium

Supply-side substitution in the wholesale market could come from other fixed licensees (for fixed call termination) and mobile licensees (for mobile call termination). These new suppliers would need to have the necessary network infrastructure and expertise to terminate fixed and mobile calls.

For example, licensees using alternative technologies (WiMAX, WLAN etc) could conceivably enter the market for fixed and/or mobile wholesale call termination in competition with existing licensees and, thus, put pressure on the level of mobile voice termination charges.

The Authority believes that, at present, there are significant technical obstacles that would have to be overcome before such a service could become viable for mobile users. For example, WLAN licensees cannot currently offer the same coverage as the mobile networks because of the limited range of reception enabled by their equipment, and technical difficulties, in terms of taking control of the called party's mobile phone.

A further limitation of this scenario, is that the alternative providers would need to rely on called parties to be responsive to the price of inbound calls, such that they would be prepared to incur some cost to reduce the cost to the person calling their mobile (for example by acquiring a multiple SIM handset). However, as discussed earlier most subscribers do not take into consideration to any great extent the price of inbound calls when making their purchasing decisions.

Hence, having a fixed or mobile network is not, on its own, sufficient for an operator to be able to terminate calls to a subscriber of a rival network. For this to happen, the fixed or mobile phone should be capable of automatically moving from its home network on to that of the alternative network on which the call would then be terminated.

At present, this is technically not possible so there is no potential for a new alternative supplier to offer termination services to a customer who is a subscriber of a particular network. This is unlikely to change in the near future. The Authority considers this arrangement is unlikely to change over the period of this market review (2010-2013).

1.12 Retail supply-side substitution

For retail supply-side substitution to impose a constraint on the level of wholesale call termination charges, there would have to be licensees which do not currently provide calls to mobiles or to fixed lines that can switch into such provision and thus undermine a price set above the competitive level. This could include the building of new electronic communication networks or firms entering that market as virtual network licensees.[43]

In order to have this effect, the new operator(s) would have to be able to provide a service which did not rely on the provision of termination from the operator to which the called party subscribes. At present, it is not feasible to offer retail calls to mobile or fixed lines without being reliant on the operator to which the called party subscribes to terminate such calls.

The competitive dynamics outlined in the demand-side analysis reveal that the lack of demand-side substitutes is not because of a complete absence of alternative providers in the retail market, but rather because of the indirect nature of retail substitution which makes it less constraining on providers of wholesale call termination.

[43] For example, Mobile Virtual Network Licensees (MVNOs) are firms that provides mobile telephony services to their customers, but do so by using part of an existing mobile network. Where an operator has its own allocation of mobile numbers this allows the operator to control the termination charge for calls made to these numbers. Currently there are no MVNO's *per se* in South Africa, although with the introduction of the new licensing regime any Individual ECS licensee can operate as an MVNO. MVNOs with control over wholesale termination charges are likely to face similar incentives as mobile network licensees when setting termination charges, as calling parties and originating licensees have no choice but to use that MVNO's wholesale termination services to deliver a call to the MVNO's customers.

The Authority considers that the potential entry of additional retail services would not change the nature of these underlying dynamics of the wholesale call termination market.

1.13 Common pricing constraints

1.13.1 Aggregating for all calls to a telephone number relating to a specific network

On the basis of the conclusions reached above, there are no demand-side or supply-side substitutes that should be included in the relevant markets. Accordingly, the appropriate market definition might appear to be wholesale voice call termination to a specified telephone number (or subscriber). However, the Authority considers that it would be incorrect to narrow the market definition to such an extent. This is because licensees currently do not price discriminate between termination charges for calls made to all the different subscribers on their networks.

Due to the existence of this common price constraint across call termination to all subscribers of a network, the relevant market can be broadened to call termination to all subscribers on a particular network.

1.14 Geographic market for wholesale call termination

Numbering used may convey information about the distinct geographic areas of the called party (such as many fixed line numbers) or it may contain no information about the specific location of the called party (such as mobile numbers). These are dealt with separately in this section.

More detailed analysis of the geographic market for wholesale call termination is outlined in the 2007 Findings Document (in Section 3.8). The Authority refers interested parties to this more detailed analysis.

1.14.1 Fixed call termination

The geographic market for fixed call termination may be defined as that area in which the relevant product is offered on approximately similar and sufficiently homogeneous conditions of competition. The degree of substitutability both on the supply and the demand side may be taken into consideration in the assessment of the geographic market and, as a part of such a substitutability assessment on the demand side, preferences and geographic purchase patterns should be taken into account.

Nevertheless, geographic markets in the electronic communication sector have traditionally been determined by reference to the relevant operator's area of coverage as well as the effective boundaries (jurisdiction) of the legal regulation of the market. Telkom, the main provider of fixed call termination services, generally offers two prices for termination services (one for local termination and one for national termination). These rates are consistently applied across the entire national market, irrespective of the location of the customer who makes a call and who received the call. In this way a common price constraint applies for both local call termination and national call termination.

Hence, the Authority considers that the geographic scope of the market is therefore a national market for fixed call termination on each service provider's network.

1.14.2 Mobile call termination

The geographic extent of each market is determined by the geographic extent of the network of each operator within South Africa. The prices for mobile services are set at a national level; that is, mobile licensees charge the same price for termination to a mobile number (or subscriber) wherever the call

is made from and wherever the called party receives the call within South Africa. The geographic scope of the market is therefore a national market for mobile call termination on each service provider's network.

1.15 Non-Transitory entry barriers and other dynamics

Section 67(6)(a) of the ECA states:

> *When defining the relevant market or market segments the Authority must consider the non-transitory (structural, legal or regulatory) entry barriers to the applicable markets or market segments and the dynamic character and functioning of the subject market or market segments.*

To the extent that these issues are not covered in the earlier sections of this document, they are dealt with below.

1.15.1 Non-transitory entry barriers

Entry barriers are relevant to the definition of the relevant market insofar as they affect supply-side substitution in the future. The Authority has explicitly considered such barriers in the analysis above given that there exists technological constraints on alternative suppliers offering termination on another provider's network.

1.15.2 Dynamic functioning of the market

The 'waterbed effect' can be considered a dynamic feature of the wholesale call termination market. Stakeholders have argued that any profits made in the wholesale call termination market are competed away in the retail market. Hence, the definition of the wholesale call termination market should be expanded to include the retail side of the market. This argument is linked to the 'two-sided' nature of the wholesale call termination market, which was discussed in detail in Section 1.6.

As discussed earlier, while the Authority accepts that the market for wholesale call termination can be considered in some senses to be "two-sided', it does not necessarily follow that the market definition needs to be expanded.

The Authority stated the following in the 2007 Findings Document:

> *Just because overall competition will be based on dynamics in both markets does not mean that they form a single competitive market. Even if retail services were fully competitive, this would not in any way mean that wholesale call termination would also be competitive. In particular, each mobile operator would still be the only supplier of call termination on their network, and callers would not be able to switch to constraining substitutes ...*[44]

Hence, the Authority considers that whether a waterbed effect exists and its impact in the retail market when wholesale call termination rates change is not relevant in the consideration of the definition of the market. However, consistent with the view already outlined in Section 1.6 of this document, the Authority will consider the implications of the 'two-sided' nature of the market during the assessment of competition and remedies phase of this market review.

[44] ICASA (2007) ibid,

1.16 Overall conclusions in market definition

On the basis of the analysis and of the evidence discussed above, the Authority holds the view that:

- No adequate wholesale demand or supply side substitutes for termination of calls to the subscribers of a specific operator currently appear to exist. Current technology does not allow the termination of a call to a mobile or fixed number other than on the network of the operator to which the called party subscribes. In the Authority's view, there is no evidence to suggest that this will change during the period of the review (from 2010-2013);
- At the retail level, there are no effective alternatives for callers that could act as a constraint on wholesale call termination charges. In addition, callers are likely to have limited awareness of the cost of calling mobile or fixed lines.
- The Authority accepts that there are a large number of low income and price sensitive subscribers in South Africa. However, due to the Calling Party Pays (CPP) system, only a relatively small proportion of subscribers are likely to show a higher sensitivity to the price of incoming calls. For these subscribers, it is likely that licensees have, to a large degree, already segmented these subscribers from other by offering them special tariffs, thus preventing this group from putting any effective constraint of a SSNIP in wholesale call termination charges; and
- The market is not as narrow as calls to individual subscribers or numbers of a given operator, because of a common pricing constraint. That is, it appears that when a termination charge is paid there is no discrimination between the termination charges for calls to subscribers of a given network. Therefore, it is appropriate to widen the product market to include all wholesale voice call termination provided by each operator.

The Authority has identified separate wholesale call termination markets for each operator in South Africa that has control over the price of call termination on its network. The market is defined as:

Wholesale call termination on any electronic communications network operating in South Africa

In this context, the word 'network' does not refer to a physical communication facility or to a system that can only be provided by an ECNS provider. Rather it refers to the logical 'network layer', which may be built on top of the physical communication facilities offered by ECNS and ECS licensees. The ECNS or ECS provider uses this network layer to provide electronic communications to its customers. In particular, the provider issues numbers to each of its individual customers, which are dialled when calling those customers.

For the avoidance of doubt, the Authority notes that all licensees that provide wholesale call termination services are included in this market definition. This includes licensees that provide Voice over Internet Protocol (VoIP) services as well as Class ECNS/ECS licensees.

2. An assessment of the effectiveness of competition and the identification of licensees with Significant Market Power

2.1 Introduction

This chapter of the document provides:

- An assessment of the effectiveness of competition within the fixed and mobile Wholesale Call Termination Market; and
- The identification of licensees with Significant Market Power (SMP) within the market for Wholesale Call Termination services.

The Authority notes the legislative requirements for conducting an assessment of competition and identification of licensees with SMP as part of a formal market review. In particular, section 67(4) of the Electronic Communications Act sets out a number of factors that must be considered as part of assessing competition and identifying licensees with SMP..

The information used to evaluate the effectiveness of competition was collected through a request for information in the form of a questionnaire. This request was made on the 9th of October 2009 via the Government Gazette (GG 32628) as well as through direct communication with licensees.

The Authority collected market data from the various providers of electronic communications networks services ("ECNS") and electronic communications services ("ECS") in order to carry out its market definition and market analysis, based on established economic and legal principles. This request was made on the 9th of October 2009 via the Government Gazette (GG 32628) as well as through direct communication with licensees. The Authority received 49 (forty-nine) responses from ECNS and ECS licensees to its questionnaire issued in October 2009.

2.2 Identification of licensees with Significant Market Power

2.2.1 Legislative requirements

A licensee with Significant Market Power (SMP) is defined in section 67(5) of the ECA as follows:

> *A licensee has significant market power with regard to the relevant market or market segment where the Authority finds that the particular individual licensee or class licensee -*
>
> *a. is dominant;*
>
> *b. has control of essential facilities; or*
>
> *c. has a vertical relationship that the Authority determines could harm competition in the market or market segments applicable to the particular category of licence.*

This sets up three possible conditions whereby a licensee can be declared as having SMP. The Authority notes that the ECA does not require a licensee to fulfil all of these conditions. Rather, if any one of these conditions is fulfilled the Authority is mandated to declare that the relevant licensee has SMP.

The definitions of the ECA states that "dominant" has the same meaning as in section 7 of the Competition Act which defines a firm as dominant in a market if:

- it has at least 45% of that market;
- it has at least 35% but less than 45% of that market, unless it can show that it does not have market power; or
- it has less than 35% of that market, but has market power.

Therefore, where a licensee has greater than 45% of the market, it follows directly from the ECA that the licensee has SMP. In this case, there is no need to consider potential control over essential facilities, vertical relationships or any other factors.

Given the market definitions proposed by the Authority, SMP cannot be held by more than one licensee in each market. Therefore this SMP assessment focuses on single firm dominance.

The criterion of dominance implies that each operator has SMP in the market for wholesale call termination on their respective networks because each operator has a market share above 45%. This is due to fact that the market as defined means that each operator has 100% market share over wholesale call termination on its own network. The legislation does not allow for any evidence to contradict this assessment given the high market share (above 45%).[45]

2.3 Assessment of competition

2.3.1 Legislative requirements

Under section 67(4) the ECA mandates the imposition of certain pro-competitive measures on SMP licensees in markets where ICASA finds competition is ineffective.[46]

The central issue in assessing effective competition is whether SMP licensees have the ability to raise prices or exclude competition, or whether they are constrained by an effectively competitive market. In making this assessment, Section 67(6)(b) of the ECA states that the Authority must take into account a range of factors when assessing competition in a defined market or market segment.

These factors are identified and discussed in the "Guideline for conducting market reviews."

The discussion below provides the Authority's view on the competitiveness of the wholesale call termination market according to the factors listed in the ECA – along with any additional factors listed that are considered relevant for the market assessment.

2.3.2 Relevant markets

The Authority has defined separate markets for wholesale call termination on each network. However, the Authority notes the two-sided nature of the wholesale call termination market. The fact that wholesale call termination cannot be offered without a (retail) call origination service means that it is relevant to consider the impact on both sides of the markets when assessing whether competition is effective in the wholesale call termination markets as well as the effectiveness or otherwise of introducing pro-competitive remedies.

[45] It is only when market shares are below 45% that evidence can be considered by the Authority in assessing whether a particular operator has dominance in a defined market.

[46] Section 67(4) states that "... pro-competitive conditions may be imposed upon licensees having significant market power where the Authority determines such markets are found to have ineffective competition".

The relevant downstream markets to be reviewed are:

- the national retail market for mobile access and calls (Mobile Retail Market); and
- the national retail market for fixed line access and calls (Fixed Retail Market).

Where relevant throughout this document, the Authority has discussed the impact that relevant downstream retail markets may have on competition in the wholesale call termination market (according to the factors listed in Section 67(6) of the ECA).

2.3.3 Market shares of existing firms

2.3.3.1 Wholesale mobile call termination

In the mobile market, the three licensees have had (since the launch of their voice services) a 100 per cent market share of terminating voice calls on their own respective networks.

Cell-C currently has a national roaming agreement with Vodacom to terminate calls to its subscribers where its own 2G network does not offer coverage for a particular subscriber.[47] Calling parties and originating licensees have no choice but to use Cell C to terminate those calls (even if Cell C uses the Vodacom network or potentially another operator's network when its customers are outside the Cell C national coverage area). Therefore, Cell C has 100% of the market for voice termination to its subscribers. Whether or not Cell C ultimately rolls out its own 2G network to offer its subscribers sufficient service coverage and therefore no longer requires the use of another mobile licensee's 2G network does not affect the conclusions of this analysis on market shares.

There has been no change in these market shares since mobile licensees began offering voice services. In addition, the Authority considers that there are no reasons to believe that these market shares will change in any material way between now and 2013.[48] There is no technical possibility of competitive entry in the relevant wholesale markets. Even if a new mobile licensee were to start supplying mobile services, this would not undermine the market shares of existing licensees due to the lack of competition between licensees in supplying wholesale mobile termination on their respective networks.

2.3.3.2 Wholesale fixed call termination

Similar to the wholesale mobile call termination market, the fixed market has a number of licensees who have 100 per cent market share over the termination of fixed calls to their respective networks. The Authority's view on the market share of each fixed licensee applies irrespective of the relative size of the undertaking. In particular, even licensees with a small customer base still has a 100 per cent market share over the termination of fixed voice calls to their own individual networks.

2.3.3.3 Relevant downstream markets

As discussed above, the relevant downstream markets to be reviewed are:

- the national retail market for mobile access and calls (Mobile Retail Market); and
- the national retail market for fixed line access and calls (Fixed Retail Market).

Tables 2.1 and 2.2 provide information on the current market shares in the mobile retail market and fixed retail market.

[47] Vodacom states on its website that "Vodacom SA has a 15 year national roaming agreement in place with Cell C, which is terminable on or after 14 November 2016." See http://www.vodacom.com/voice.php.
[48] This market review is forward looking and considers the effectiveness of competition over the period to 2013.

Table 2.1: Retail Mobile market share by total customer connections, as at June 2009

	Retail Market Share
Licensee 1	54 per cent
Licensee 2	32 per cent
Licensee 3	14 per cent

Source: Analysis of licensee data

Table 2.2: Retail Fixed market share by total customer connections, as at June 2009

	Retail Market Share
Licensee 1	99.5 per cent
Licensee 2	0.4 per cent
Other fixed licensees	0.1 per cent

Source: Analysis of licensee data

As can be seen from the data, both mobile and fixed retail markets are highly concentrated. The Herfindahl-Hirschman Index (or HHI) for the fixed retail market is 9120. The HHI for the retail mobile market is 4151. Typically, a HHI of 1800 and above indicates a market that is highly concentrated.[49]

The Authority notes that the competitiveness of the retail market has little, if any, impact on the competitiveness of the wholesale call termination market. This issue was discussed above when defining the market for wholesale call termination and stems from the fact that the Calling Party Pays (CPP) system means that while both the calling and called party may benefit from communicating with each other, it is only the calling party that pays for the underlying costs of the call.

Each operator's control over access means that no matter how competitive the related downstream retail market is, this does not change the underlying market dynamics of the wholesale call termination market – where licensees have high market shares and little, if any, competitive pressure to constrain wholesale call termination to competitive levels.

2.3.4 Actual and potential competitors

2.3.4.1 Wholesale call termination

The current market definition provides few, if any, opportunities for existing or new competitors to enter the market and provide an alternative product to that offered by existing licensees.

In particular, there are no actual or potential competitors in the defined wholesale call termination markets given the technical and practical constraints to an alternative provider offering call termination services on a licensee's network.

The Authority has also considered the potential entry of competitors in providing substitute products. In the analysis of supply side substitution, no potential competitors were identified. As part of the market definition analysis, the potential for competitors to emerge using new technologies was also considered. For example, Voice over Internet Protocol (VoIP) services offer the potential to provide a competitive alternative to using call termination services. However, the provider of call termination services also tends to supply internet access to the end-user. As this is needed in order to use VoIP

[49] www.justice.gov/atr/public/testimony/hhi.htm.

services, the provider of call termination services is able to control the prices of internet access in such a way as to reduce the scope of competition and the ability for VoIP services to constrain the prices of wholesale call termination services. These, and other issues, were discussed in detail in the market definition section of this document.. The Authority does not consider that such competitors will provide an effective constraint on call termination prices over the period under review (2010-2013).

The Authority notes that at a broad level, customers can change their provider of mobile or fixed services. However, the CPP system severely reduces any incentives to choose (and change) providers on the basis of the price of wholesale call termination. In particular, in a CPP environment, it is more likely that customers will be motivated by the price of making calls and associated access costs. As such, the focus of competition between licensees is more likely to be focused on the price of outbound calls, handsets, access fees and value added services rather than the price of wholesale call termination.

2.3.4.2 Relevant downstream markets

There are a number of competitors in the fixed and mobile retail markets. These include all the existing providers of wholesale call termination but also include additional service providers who resell call services from existing licensees.

The retail market is structured differently to that of the wholesale call termination market, primarily because there is a greater number of competitors providing services in the market as well as the possibility for greater customer segmentation.

In addition, there are a number of potential competitors who can enter the market. These include numerous existing licence holders who are yet to commercially launch their services in South Africa. The Authority notes that the service neutral licensing regime provides flexibility to new entrants to provide electronic communication services using new technologies (such as WiMAX).

The Authority notes that potential competition in the retail markets will largely occur at the service provider layer. This is due to the underlying economics of electronic communications industries (high sunk costs and economies of scale).

Apart from the potential of countervailing buying power to constrain wholesale call termination, the overall competitiveness of downstream relevant retail markets play little, if any part, in constraining the prices of wholesale call termination prices. The reasons for this were explained in detail in the discussion of market definition.

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the prices of wholesale call termination prices. The reasons for this were explained in detail in the discussion of market definition.

2.3.5 Level, Trends in Concentration and History of Collusion

2.3.5.1 Wholesale call termination

Given the Authority's definition of the market, each operator that provides wholesale call termination has 100 per cent market share over the termination of calls to its subscribers. Hence, by definition, there is only one operator in each of the markets that has been defined. Hence, a discussion on market concentration is largely irrelevant for the purposes of this market review. Market shares in the wholesale call termination market have remained unchanged since each operator started providing call services commercially.

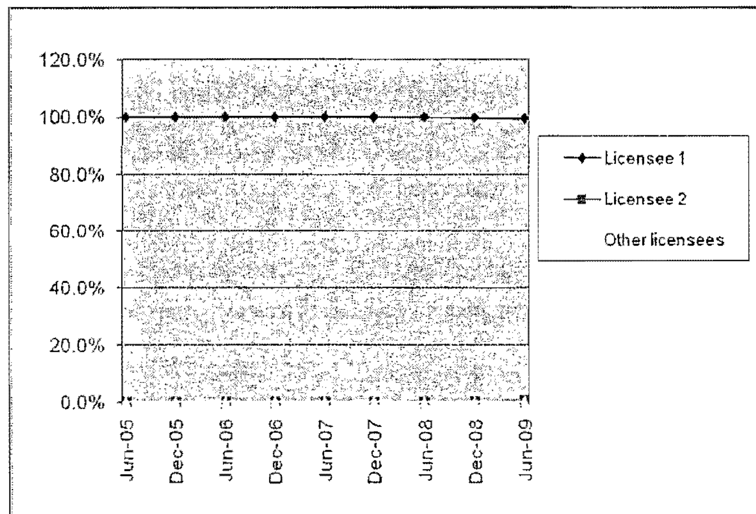
Given that there is, by definition, only one operator in each of the defined markets, the possibility of collusion in the wholesale market is irrelevant for the assessment of competition in the wholesale call termination market.

2.3.5.2 Relevant downstream markets

The Authority notes that market shares in the mobile and fixed retail markets have remained relatively stable in recent years.

In the fixed retail market, one licensee controls close to 100 per cent of all fixed location services, with a second licensees only offering services in 2008. The trend in market shares since entry of the second licensee is outlined in Figure 2.1 below

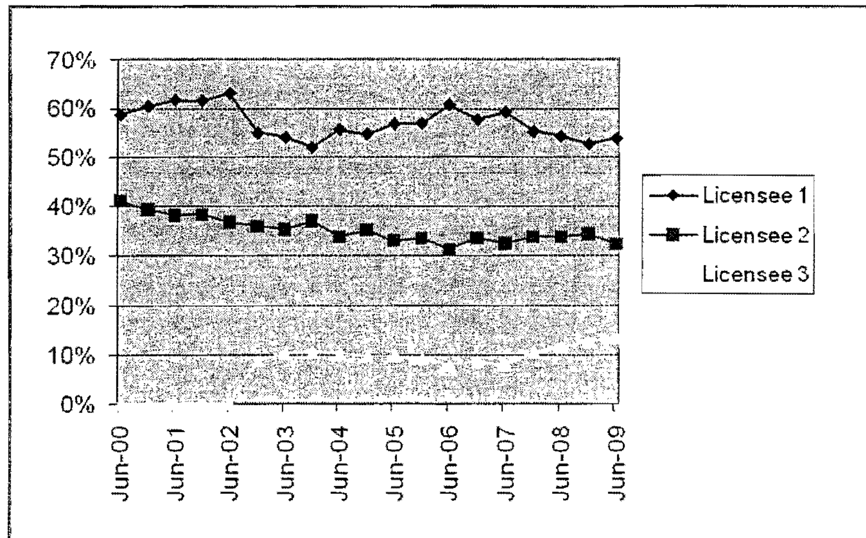
Figure 2.1: Fixed retail market – trend in market share, by total fixed customers



Source: Analysis of licensee data

The retail mobile market is dominated by two licensees, who combined have 87 per cent market share of total customers. The third licensee, has a market share of 13 per cent. Figure 2.2 outlines changes in customer markets shares in the retail mobile market since 2000.

Figure 2.2: Mobile retail market – trend in market share, by total mobile customers



Source: Analysis of licensee data

Market shares in the mobile market have remained relatively stable over the last 10 years. The third licensee's market share has remained around 10 per cent since 2002, while the market shares of the other two players have remained largely unchanged.

Apart from the influence of countervailing buying power (which has the potential to constrain wholesale call termination prices), the overall concentration levels and market shares play little, if any part, in constraining the prices of wholesale call termination prices.

2.3.6 Overall size of each of the market participants

2.3.6.1 Wholesale Call Termination

As discussed earlier, whether the operator is large or small, each has a 100 per cent market share of the call termination market on its own network. However, the overall size of the operator (in either the wholesale and related downstream retail market) may influence the extent to which it can use countervailing buying power to constrain wholesale call termination rates offered by other licensees. This is discussed in detail later.

Table 2.3 presents the share of call minutes that are terminated on each of the mobile networks in South Africa. Table 2.4 presents the equivalent information for the fixed market.

Table 2.3: Share of total minutes terminated on mobile networks, January - June 2009

	Percentage share
Licensee 1	43%
Licensee 2	42%
Licensee 3	14%

Source: Analysis of licensee data

Table 2.4: Minutes terminated on fixed networks, January – June 2009

	Percentage share
Licensee 1	98%
All other fixed licensees	2%

Source: Analysis of licensee data

2.3.6.2 Relevant downstream markets

Table 2.5 provides an overview of the relative size of each of the market participants in the mobile and fixed retail markets in South Africa.

Table 2.5: Retail Mobile Market Shares, by total customer connections, originated voice minutes, and revenues, as at June 2009

	Market Share by customers	Market Share by originated voice traffic	Market Share by market revenues
Licensee 1	54 %	55 %	55 %
Licensee 2	32 %	36 %	36 %
Licensee 3	14 %	9 %	9 %

Note: Market revenues include all retail revenues for voice calls and SMS
Source: Analysis of licensee data

For the fixed market, licensee data is not available for the most recent year for revenues and traffic. However, the market shares of revenue and traffic are likely to follow closely the customer market shares outlined in Table 2.4 above, i.e. 98 per cent share for one licensee and 2 per cent between the other fixed line licensees.

2.3.7 Control over essential facilities

2.3.7.1 Wholesale call termination

The ECA defines an essential facility as "an electronic communications facility or combination of electronic communications or other facilities that is exclusively or predominantly provided by a single or limited number of licensees and cannot feasibly (whether economically, environmentally or technically) be substituted or duplicated in order to provide a service in terms of this Act."

This definition is similar to the one used in the Competition Act, which defines an essential facility as "infrastructure or resource that cannot reasonably be duplicated, and without access to which competitors cannot reasonably provide goods or services to their customers."

In many countries, 'essential facilities' have traditionally been subject to mandatory unbundling to permit sharing with competitors. Without access to an essential facility, firms could not enter the downstream market, thereby harming competition. Furthermore, the owner of an essential facility, having a monopoly, has market power because entry is not feasible. Therefore, if monopoly profits are to be prevented *via* the mandated sharing of an essential facility with other firms, the price of the essential facility must be regulated.

Duplicability is the key issue at the heart of identifying whether a facility is essential or not. If the functions of a particular facility can be duplicated by a reasonably efficient competitor, then regulation to mandate sharing of the facility is not justified.

In South Africa, there is more than one mobile and fixed network. Each network has its own independent owned infrastructure. It is doubtful that these networks use any assets susceptible to characterisation as essential facilities. Call termination network elements of a fixed or mobile network have been duplicated by other network licensees, or can be duplicated,[50] with the result that the network elements that supply wholesale call termination do not constitute essential facilities.

Given the above, wholesale call termination is an example of a bottleneck service. The bottleneck occurs once the customer receiving the call selects an operator. The operator completing the call enjoys a bottleneck on call termination to its customer – there is no way to reach that customer except through the operator's network belonging to that customer. Even if the retail market is competitive, and even though the customer has an initial choice of licensees (such that there is no essential facility), once the customer has made a selection, the chosen operator controls a bottleneck in the form of call termination to that customer and, consequently, possesses market power. This allows the service provider to set the price for call termination above competitive levels.

2.3.8 Impact of technological advantages or superiority of a given market participant

2.3.8.1 Wholesale Call Termination

In some markets, firms have technological advantages or some other form of superiority over competitors. These are usually advantages that confer a competitive advantage to firms by allowing them, for example, to offer unique products and services to customers or to produce existing products and services at lower costs (and hence the ability to offer them to customers at lower prices for the same profits when compared to competitors). These advantages are usually transitory in nature as, over time, competitors invest in technology in order to match their rivals.

Such advantages may represent a barrier to entry as well as an advantage over existing competitors due to lower production costs or product differentiation.

However, this factor is not considered relevant for the assessment of competition in the wholesale call termination market because the presence of absolute barriers to entry means that each service provider offering wholesale call termination faces no existing or potential competitors. Hence, the existence of different technological advantages between rivals is not relevant.

2.3.8.2 Relevant downstream markets

The impact of technological advantages and/or other forms of superiority may have a great impact in the retail market. For example, given the finite nature of spectrum, late entrants to the mobile market may face different spectrum allocations to those licensees who first entered the market. This may impact on the overall cost structure of providing mobile call services. For instance, in providing coverage in rural areas, it is cheaper to use spectrum in relatively lower bands (such as 900 MHz) as less cell sites are required to be built. Licensees with higher spectrum frequency allocations (say, 1800 MHz) are likely to face higher costs in providing equivalent coverage compared to rivals with 900 MHz spectrum.

Table 2.6 provides information on the spectrum allocation to each of the mobile licensees in South Africa.

Table 2.6: Spectrum allocations to mobile licensees

	900 MHz band – 2G	1800 MHz band – 2G	1900/2100 MHz band – 3G
Vodacom	2x11 MHz	2x12 MHz	2x15 MHz plus

	900 MHz band – 2G	1800 MHz band – 2G	1900/2100 MHz band – 3G
			1x5 MHz
MTN	2x11 MHz	2x12 MHz	2x15 MHz plus 1x5 MHz
Cell C	2x11 MHz	2x12 MHz	2x10 MHz

Note: A further 2x5 MHz plus 1x5 MHz in the 1900/2100 MHz range is currently held in reserve pending application from Cell C.
Source: ICASA

While this does not impact on the assessment of competition in the wholesale call termination market, it may be relevant when considering the appropriate pro-competitive remedies to apply to licensees who are identified as having Significant Market Power (SMP).

2.3.9 Firms' access to capital markets and financial resources

2.3.9.1 Wholesale Call Termination

Easy or privileged access to capital markets may represent a barrier to entry as well as an advantage over existing competitors.

This factor is not considered relevant in this market, because the presence of absolute barriers to entry indicate that each operator offering wholesale call termination faces no existing or potential competitors. Therefore, the cost of capital a service provider faces cannot give it any special advantage in this market.

2.3.9.2 Relevant downstream markets

Capital constraints and financial resources of different providers in the broader retail markets are considered important to the extent that they impact on the countervailing buying power between different providers of wholesale call termination services. In practice, certain licensees providing mobile services are likely to have a lower cost of capital compared to their smaller competitor. Smaller licensees are more likely to be constrained by their lack of financial resources under circumstances where termination payments are withheld as a bargaining strategy by larger licensees. This is discussed in more detail in the section on countervailing buying power (see Section 2.3.14).

2.3.10 Dynamic market characteristics of the market, including growth, innovation, and products and services differentiation

2.3.10.1 Wholesale call termination

As far as the Authority is aware, there has been no significant recent product innovations or diversification that have impacted on the effectiveness of competition in wholesale call termination markets in South Africa.

New technologies such as VoIP may provide additional constraints at either a wholesale, or more likely a retail level. However, at present, VoIP is in its infancy in South Africa and the development of VoIP is too uncertain to conclude that it could constrain call termination of fixed and mobile licensees over the period of this review (2010-2013). Further technological or market developments permitting termination on other operator's networks are not apparent in the next few years.

2.3.11 Economies of scale and scope

2.3.11.1 Wholesale call termination

Economies of scale arise when increasing production causes average costs (per unit of output) to fall. The presence of economies of scale can act as a barrier to entry as well as an advantage over existing competitors.

Economies of scope exist where average costs for one product are lower as a result of it being produced jointly with other products by the same firm. Taking advantage of economies of scope may require entrants to enter into more than one market simultaneously. This may require additional expertise, more capital etc, which may lead to higher market entry costs, which may increase the barriers to entry.

This factor is not considered relevant in this market because the presence of absolute barriers to entry indicates that each service provider offering wholesale call termination faces no existing or potential competitors and, therefore, cost-advantages are not relevant in the relevant markets, as defined by the Authority.

2.3.12 Nature and extent of vertical integration

2.3.12.1 Wholesale call termination

Vertical integration is a typical characteristic of network industries and is not necessarily a competition concern as it can be an efficient way of structuring firms. However, vertical integration can strengthen dominance by making new market entry harder due to a firms' control of upstream or downstream markets.

A vertically integrated service provider may have an advantage over its competitors, as access to sales and supply markets might be more easily attainable for the integrated firm. Vertical integration also makes it possible to leverage market power into adjacent markets (both upstream and/or downstream).

2.3.12.2 Relevant downstream markets

Most service providers in the fixed and mobile markets in South Africa are vertically integrated in the sense that they own both the upstream infrastructure that enables the provision of wholesale call termination and other wholesale access and origination services whilst at the same time they are also downstream suppliers of retail services.

However, the relevant question is whether the position of any operator in the retail market affords it a significant advantage over competitors in wholesale call termination, e.g. through potential leveraging of market power.

The Authority considers that this is not the case because licensees are not in competition with each other with respect to wholesale call termination (given how the market has been defined).

2.3.13 Market and regulatory barriers to entry

2.3.13.1 Wholesale call termination

There are a range of technological and commercial obstacles to alternative licensees providing wholesale call termination services to customers that belong to other networks. These barriers have been discussed in detail in the market definition section of this document and relate to the physical obstacle to being able to provide a competitive termination service to a customer that is directly connected to a specific operator's network.

Hence, there are absolute barriers to entry into the market – which means that the current dominance of firms providing wholesale call termination is unlikely to be challenged effectively by new competitors over the time of the current review (2010-2013).

2.3.13.2 Relevant downstream markets

There are a range of extensive barriers to entry in the downstream relevant fixed and mobile retail market at the infrastructure level; including:

- large sunk costs and economies of scale and scope;
- the regulatory requirement to acquire licences (including associated fees); and
- the need to acquire spectrum (for some service providers).

The Authority expects these retail markets to become more competitive over time, given the liberalisation of the licensing regime and the development of alternative technologies. However, as discussed earlier (as well as in the market definition consultation document) the entry of new players in the retail market will not impact on the competitive dynamics in the wholesale call termination market and hence, not constrain call termination prices to a competitive level.

2.3.14 Countervailing market (or buying) power

2.3.14.1 Introduction

Countervailing Buying Power (CBP) exists when a particular purchaser (or purchaser group) of a product is sufficiently important to its supplier to influence the price charged for that product.

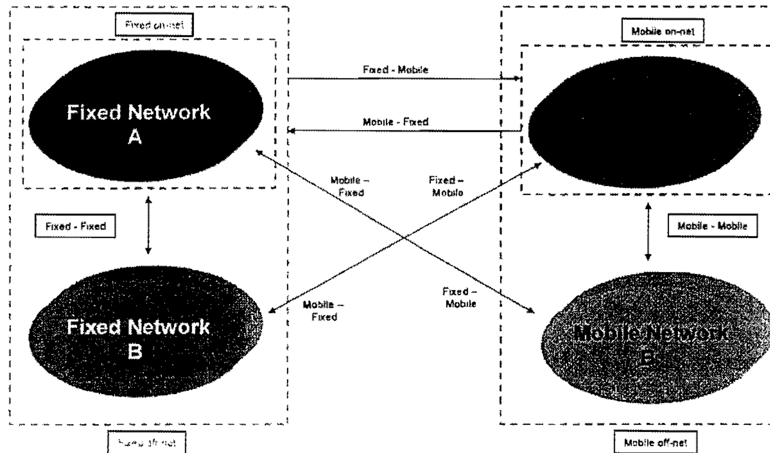
Buying power is a relative concept, referring to the relative strength of the buyer in its negotiations with the prospective seller for a specific product.

If CBP is sufficiently strong, then it has potential to counteract SMP and constrain prices to competitive levels. Note that for this to occur, it is not sufficient just for the buyer to have some CBP but, rather, it is necessary that the buyer can exert sufficient CBP such that the prices charged by the seller are constrained to a level consistent with a competitive outcome, i.e. that the seller is unable to act independently of the market.

The question of whether each operator providing voice call termination has SMP depends on the extent to which its dominant position may be off-set by the buying power of purchasers (comprising other fixed and mobile licensees). If one of these buyers or groups of buyers were able to exercise countervailing buying power this would reduce the market power of the operator, so long as the service provider is not able to discriminate between buyers when selling termination.

Each service provider selling termination on its respective market encounters a number of different buyers. As is demonstrated in Figure 2.3, each service provider needs to have in place commercial arrangements with a range of other fixed and mobile networks in order to provide its customers with the full menu of calling options.

Figure 2.3: The range of different buyers of call termination services[51]



In order to measure the potential for exercising Countervailing Buying Power (CBP) it is necessary to explore the degree of concentration on the buying side of the market. The tables below (Table 2.7 and Figure 2.8) outline the share of call termination minutes purchased by each of the major fixed and mobile service providers in South Africa.

Table 2.7: Proportion of mobile terminating minutes purchased by each licensee, January – June 2009

	Percentage of Mobile Call Termination Minutes
Licensee 1	34.7 %
Licensee 2	30.5 %
Licensee 3	10.8 %
Licensee 4	23.9 %
Licensee 5	Less than 0.1 %
Other licensees	Less than 0.1 %

Source: Analysis of licensee data

Table 2.8: Proportion of fixed terminating minutes purchased by each licensee, January – June 2009

	Percentage of Fixed Call Termination Minutes
Licensee 1	49.7 %
Licensee 2	33.2 %
Licensee 3	16.8 %
Licensee 4	0.1 %
Licensee 5	0.1 %
Other licensees	0.1 %

Source: Analysis of licensee data

[51] Figure 3.3 is modelled on the figure used by the New Zealand Commerce Commission in its 2009 report : *Draft Report on whether the mobile termination access services (incorporating mobile-to-mobile voice termination, fixed-to-mobile voice termination and short-message-service termination) should become designated or specified services: Draft Report under clause 2 of Part 1 of Schedule 3 of the Telecommunications Act 2001.*

The tables above demonstrate that the shares of minutes purchased are not overly concentrated in one particular operator. Mobile termination minutes are largely shared between the three mobile licensees and Telkom with no one licensee buying more than 35 per cent. Fixed termination minutes are bought largely by the mobile licensees in approximate proportion to their market share of retail mobile customers.

There are various mechanisms through which an operator might possess CBP. In the context of wholesale call termination, the Authority has identified the following key mechanisms:

- The termination purchaser can threaten not to interconnect or threaten to discriminate against the seller (when the seller purchases interconnection) such that they are at a disadvantage compared to their competitors;
- The termination purchaser can threaten to raise the retail off-net call prices of the seller's network;
- The termination purchaser can delay and/or withhold payments for interconnection services;
- The termination purchaser can threaten to degrade service quality or raise prices on some other input that they sell to the termination provider other than termination; and
- The termination purchaser can threaten to in turn sell termination on their network at a high price, that is, they can threaten to retaliate with their own high interconnection fee.

These are discussed in detail below, starting with an analysis of CBP of larger licensees and then a review of CBP of smaller licensees.

2.3.14.2 CBP Mechanisms: threat not to interconnect and threat to discriminate – Larger Licensees

The Authority notes that there are two potential methods for licensees to apply this threat. The first opportunity comes when parties are negotiating an initial interconnection agreement. The second opportunity comes when parties are re-negotiating an existing interconnection agreement.

ECA provisions and regulatory principles require all licensees to interconnect upon request and prohibit discrimination between licensees on technical grounds (Section 37(6)). As a result, no buyer can threaten to refuse to interconnect or discriminate. This removes any credible threat from large and small licensees.

Even in the absence of these legal obligations, any threat by a smaller operator to refuse interconnection with a large operator will not be credible as the lack of interconnection will harm the smaller operator more than the large operator.

2.3.14.3 CBP Mechanisms: threat to raise retail off-net call prices – Larger licensees

Larger licensees may have limited incentive to carry through this threat given the adverse impact that it may have on profits. Once a service provider has established itself as large within a market, there is limited incentive to actually carry through with the threat to raise retail prices beyond the profit maximising level.

Threats by smaller licensees will not be credible as they are likely to harm the smaller operator more than the larger operator. This is because the larger operator will only experience a small reduction in incoming calls (based on the already small subscriber base of the smaller operator), whilst the higher off-net rates to large licensees (that will be the target of a large proportion of calls) will seriously impair the competitiveness of the smaller operator's offering to potential subscribers.

At a broad level, the credibility of this threat by any operator relies on there being a demand side impact of higher off-net prices to a particular network. However, lack of knowledge by customers of the network called (a feature discussed in the market definition section of this document) means that the demand side impact of higher off-net prices to specific networks is likely to be muted.

2.3.14.4 CBP Mechanisms: threat to withhold interconnection payments – Larger licensees

The impact of withholding interconnection payments will have a greater impact on smaller licensees than on larger licensees. This is because interconnection revenues make up a relatively larger proportion of total revenues for smaller licensees. Larger licensees are also able to retaliate by withholding interconnection payments themselves. When dealing with other large licensees, the impact is largely negated out, but there will be a greater impact of such a tactic on smaller licensees.

A threat by a smaller operator to withhold payments to a larger operator is not likely to be credible because:

- Larger licensees can retaliate by withholding interconnection payments which will have a relatively larger impact on smaller licensees;
- Even if disputes are eventually resolved in favour of the smaller operator, the delays in payments may have a large impact on cash flows for the smaller operator, which may impact on their ability to compete in the market.

2.3.14.5 CBP Mechanisms: degrade or increase the price of non-termination services – Larger licensees

Licensees do not necessarily seek only call termination services from each other. Licensees are more likely to seek a bundle of services, such as call termination and the leasing of facilities. Therefore the pricing of call termination services does not represent the full relationship between licensees. Any pricing matter of call termination services should be reviewed in the context of an licensees ability to affect the price/conditions of non-termination services when faced with an increase in the price of call termination.

2.3.14.5.1 Small licensees threaten large licensees

Smaller licensees are unlikely to be in a position to offer a credible threat as they do not provide larger licensees with a significant amount of non-termination services (such as transmission or sharing of facilities). Further, given that smaller licensees are usually reliant on larger licensees for a range of non-termination type services, larger licensees are able to easily retaliate to any threat by a smaller operator.

2.3.14.5.2 Large mobile licensees threaten each other

Other than interconnection, large licensees tend not to rely significantly on non-termination services from their competitors. As a result, it is unlikely to be credible for a large mobile operator to threaten another large mobile operator to degrade or increase the price of a non-termination service.

2.3.14.5.3 Large mobile licensees threaten Telkom

Large mobile licensees do not provide Telkom with significant non-termination services. As a result, using this CBP mechanism is not a credible threat.

2.3.14.5.4 Telkom threaten large mobile licensees

Large mobile licensees are relatively more dependent on Telkom for a range of non-termination services such as call and broadband conveyance across long distance links. However, there are a number of reasons why a threat by Telkom is unlikely to be credible:

- The ability for mobile licensees to self-provide lessens the impact of a threat by Telkom -- as the bargaining power of mobile licensees is increased;
- If the threat by Telkom is to increase input costs generally, then both large mobile licensees (MTN and Vodacom) would be impacted equally, which does not change the competitive dynamic between them.
- Forcing prices above the profit maximising point in order to threaten mobile licensees will harm profits at Telkom (given the large revenues involved);

- Mobile licensees have the ability to retaliate, which may reduce the incentive for Telkom to use its CBP.

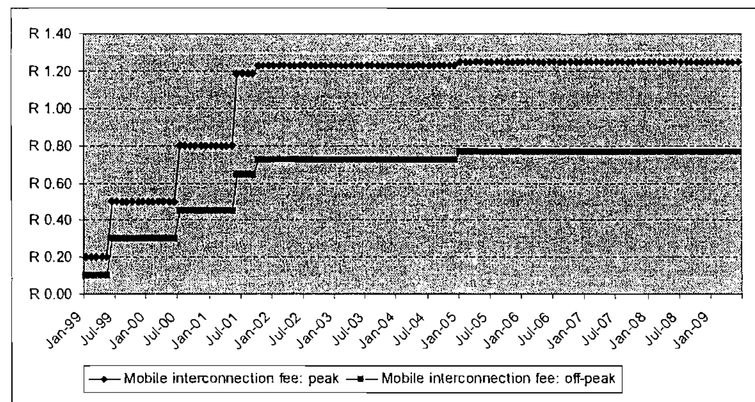
2.3.14.6 CBP Mechanisms: retaliate by raising own termination rate – Larger licensees

Licensees might constrain one another by threatening to retaliate with high termination fees of their own.

2.3.14.6.1 Large mobile licensees threaten each other

The Authority considers that large mobile licensees do not have a commercial incentive to constrain wholesale termination rates of other large mobile licensees by threatening to set high termination fees themselves. This is because it is unlikely that licensees will be able to agree asymmetrical termination rates. Given that reciprocal rates are the most likely commercial outcome, it is in the mutual interest of both parties to set high reciprocal rates rather than low reciprocal rates. The evidence from actual termination rates in the market support this (see Figure 2.4 below).

Figure 2.4: Historic trend in mobile termination rates, 1999-2009



Source: Analysis of licensee data

Due to non-discrimination obligations, the wholesale mobile termination rate the mobile operator set for each other will also be the rate set for the market as a whole. In order to secure high termination revenues from fixed-to-mobile calls, large mobile licensees have a mutual incentive to set a high wholesale termination rate. Even if the waterbed effect were fully effective (100 per cent pass through to the retail market), a high wholesale termination rate allows mobile licensees to subsidise retail rates and hence drive greater levels of mobile penetration at the expense of fixed line licensees. However, given the highly concentrated nature of fixed and mobile markets in South Africa, it is likely that the waterbed effect will not be fully effective. Without 100 per cent pass-through, a strategy of setting wholesale termination rates above cost leads to increased profits for mobile licensees.

In the presence of one or more smaller competitors (either new or recent entrants), a high wholesale call termination rate disadvantages the smaller licensees. This is for two reasons:

- By raising wholesale call termination rates above costs, large mobile licensees can set off-net retail prices above equivalent on-net prices. A new entrant's ability to attract new customers (as well as existing customers from other mobile networks) is partly dependent on the off-net prices that they can charge. Customers of smaller networks make and receive a higher proportion of off-net calls compared to customers of large networks. Hence, the price of off-net calls is an important determinant of the competitiveness of the service offering of smaller licensees. With above cost wholesale termination rates, it costs all customers (of large and small networks) more to call off-net. This puts smaller licensees at a competitive

disadvantage compared to larger networks that are able to offer customers greater on-net calling opportunities (with lower on-net prices).

- Above cost wholesale termination rates provides licensees with revenues that can be either taken as profit or used to compete in the retail market (the 'waterbed effect'). Either way, the larger the network the greater amount of off-net calls – and hence the greater amount of revenues available. This can lead to higher profits and greater ability to compete in the retail market. The balance between the two effects will depend on the amount of pass-through of higher wholesale termination rates to the retail market. Hence, an above cost wholesale termination rate effectively entrenches the competitive advantages that larger licensees have in the market.

2.3.14.6.2 Telkom threatens the large mobile licensees

The evidence suggests that Telkom has not been able to constrain the mobile licensees by threatening to raise fixed termination rates. From 1994, Telkom has been charged a significantly higher rate than they received and has not been able to reduce this rate in recent renegotiations. In addition, a threat by Telkom to increase fixed termination rates is not likely to be credible as an increase in fixed termination does not change the competitive dynamics of the mobile retail market (as each licensees' competitive position remains unchanged).[52]

2.3.14.6.3 Mobile licensees threaten Telkom

The evidence suggests that mobile licensees have been able to constrain fixed termination rates. This is indicated by the large price differential between mobile to fixed and fixed to mobile termination rates.

2.3.14.7 CBP Mechanisms: threat not to interconnect and threat to discriminate – Smaller Licensees

As noted earlier, there are legal restrictions on larger licensees with regard to threatening non-interconnection or discriminating in their treatment of smaller service providers. Therefore these alternatives do not provide credible countervailing buying power in the long term. However, the Authority notes the ability of larger service providers to delay the provision of interconnection to smaller service providers (particularly when interconnection is first negotiated). This may represent an effective short-term bargaining tool with new entrants as the effect will be to delay market entry. There is anecdotal evidence from a number of industry players that new entrants have faced delays and the imposition of onerous terms on new entrants during interconnection negotiations over recent years.

In the absence of regulations requiring any-to-any connectivity, it is likely that a refusal to supply services by a larger operator can represent an effective use of countervailing buying power on new entrants and smaller service providers. This is because a delay to the provision of interconnection services has the potential to seriously damage the small entrant's ability to offer a competitive retail service. A reciprocal threat from a small service provider will have a limited impact on a larger service provider (in terms of the amount of traffic impacted by the refusal by the smaller operator to provide interconnection services to a larger operator). It does not matter whether the larger service provider offers fixed or mobile services. For example, if Neotel customers are unable to call a Telkom or MTN customer, or can only call at very high rates, this will reduce the ability of Neotel to attract customers to its network. The effects will be much reduced for customers of larger networks if they are unable to call customers on smaller networks.

2.3.14.7.1 CBP Mechanisms: threat to raise retail off-net call prices – Smaller licensees

The Authority considers that larger licensees can credibly threaten smaller licensees by raising off-net call prices. This is a threat which smaller licensees are unable to counter.

[52] This is based on the assumption that the fixed and mobile calls are in separate markets.

The effect of any increase in off-net retail rates (and associated decreased demand for calls to that network) will harm smaller licensees relatively more than large licensees. This is because smaller service providers rely far more on incoming off-net wholesale revenues relative to the larger licensees (as larger licensees have a greater proportion of on-net calls). Off-net call prices to larger licensees are a key price for any potential subscriber to a small operator (as off-net calls are likely to account for a higher proportion of total calls for customers of smaller networks).

2.3.14.7.2 CBP Mechanisms: threat to withhold interconnection payments – Smaller licensees

For the same reason as described above, if a small service provider threatened to refuse to pay for interconnection from a large service provider, this would have a small effect on the cash flows of larger service providers and their ability to access financial resources. However, if the larger service provider threatened to refuse to pay for (or purchase) interconnection this would potentially have a relatively larger effect on the cash flow of a smaller service provider. Hence, the threat is more credible when coming from a larger licensee. A reciprocal threat from a smaller service provider would remain less damaging and therefore less effective as a bargaining strategy.

2.3.14.7.3 CBP Mechanisms: degrade or increase the price of non-termination services – Smaller licensees

The Authority considers that larger licensees can exert CBP on smaller licensees through threats to degrade or increase the price of non-termination services.

Smaller service providers usually rely on larger service providers for other network or service components critical to their networks. Many of these services do not have specific cost-based price regulation imposed on them (such as transmission services in South Africa). For example, a small operator may be reliant substantially on a large operator for roaming services for a number of years, the price of which is determined by the large operator. The large operator is therefore in a position to pressure the small operator to reduce their termination rates by threatening to increase the cost of roaming to the small operator (or to degrade the quality of the roaming service offered).

In addition, a large operator could exert pressure on smaller licensees by threatening to increase the price they pay for conveyance services, without simultaneously increasing the price to larger service providers. This can be done through restructuring the discount scheme such that small volume service providers are not able to get the lower prices charged to larger service providers unless they purchase certain volumes. However, due to their small size this may not be possible. Such a scheme would effectively bypass any non-discrimination concerns on those services. Whether 'bulk discounts' represent behaviour that is ineffectively competitive or simply the efficient operation of the market can only be resolved through a careful review of the specific case. The Authority accepts that 'bulk discounts' of this nature are not necessarily introduced in order to directly harm smaller licensees.

2.3.14.7.4 CBP Mechanisms: retaliate by raising own termination rate – Smaller licensees

A large service provider's threat to retaliate with increased termination prices can significantly disadvantage a smaller service provider as the effect is to drive up off-net prices. Higher off-net prices make smaller networks less appealing for customers in general. This can be a highly credible strategy. Though a smaller service provider may very well be able to set their wholesale termination rate at the same level that the larger service provider charges to them, they would have no power to increase beyond this level. Furthermore, such a bargaining strategy by a smaller service provider is not an effective counter-threat as the smaller service provider is likely to lose more than the larger service provider if termination rates are increased on a reciprocal basis. However, the only constraint on this behaviour for the larger service provider may be the non-discrimination regulatory obligation meaning that they would need to raise rates for all market participants.

2.3.15 Conclusions on CBP in the mobile and fixed markets

The Authority considers that CBP that can be exerted on a provider reduces as the size of the service provider increases. Larger service providers are unlikely to face CBP when they sell termination services

to other buyers. However, larger licensees may possess CBP over smaller fixed and mobile licensees. This is the case even if cost based regulation of call termination rates is implemented.

However, it is unlikely that CBP from larger licensees is powerful enough to force smaller licensees to price call termination at a competitive level. All the mechanisms that larger service providers have to exercise CBP over smaller service providers are all indirect. More direct examples of CBP are when buyers can threaten to purchase elsewhere, or not at all. In this case, however, there are powerful economic dynamics which would support the pricing power of small service providers. Smaller licensees still have control over access to their network and buyers are obligated through regulation to purchase interconnection from all licensees (they are unable to credibly threaten to not purchase from smaller licensees).

In addition, the evidence reviewed by the Authority indicates that no small licensees have CBP that may act as an effective constraint on wholesale call termination rates offered by large licensees in South Africa.

2.4 Conclusions on SMP and the effectiveness of competition

2.4.1 Assessment of competition

The Authority finds that all the defined markets are ineffectively competitive. However, there are mechanisms through which larger service providers may exert some countervailing buying power on smaller service providers. This use of CBP has the potential to limit the extent to which smaller service providers are able to price wholesale call termination at excessive levels (significantly above cost). However, even though this CBP may apply, there is little evidence to suggest that it has been strong enough to constrain wholesale call termination prices charged by smaller service providers.

2.4.2 Identification of licensees with SMP

Given the Authority's definition of as well as its view on the effectiveness of competition in each of the defined markets, it finds that

- All mobile ECS and ECNS licensees that offer wholesale call termination services and have control over the price charged for these services have SMP in the market for wholesale call termination on their network in South Africa; and
- All fixed ECS and ECNS licensees that offer wholesale call termination services and have control over the price charged for these services have SMP in the market for wholesale call termination on their network in South Africa.

For the avoidance of doubt, fixed ECS and ECNS licensees include service providers providing wholesale call termination using VoIP to a fixed location.

3. Evaluation and identification of pro-competitive remedies

3.1 Introduction

This chapter completes the market review of the wholesale call termination market by reviewing and identifying specific pro-competitive terms and conditions to remedy the finding of ineffective competition in the following explicitly identified markets:

- Wholesale call termination on a fixed network in South Africa; and
- Wholesale call termination on a mobile network in South Africa.

3.2 Legislative requirements

3.2.1 Process

The Authority's market review process comprises three main components as set out in Section 67 of the ECA:

- Definition of the relevant markets;
- Assessment of competition in the relevant markets, in order to identify competitive constraints and to identify whether any licensees have SMP; and
- Where SMP is identified, the imposition of pro-competitive remedies, or SMP Obligations, in relation to the identified markets.

After having identified the relevant markets as the market for fixed and mobile wholesale call termination services, and after having found ineffective competition in such markets wherein each operator holds a monopoly on call termination on its own network; this section of the document deals with the last step in the market review process, which is the imposition of pro-competitive remedies.[53]

The remedies proposed herein are, in the Authority's view, appropriate for the period under review (2010 – 2013) and are aligned with the requirements set out in the ECA and the objectives of the Authority

3.2.2 Licensees with Significant Market Power

Through its analysis the Authority has found that there is ineffective competition in the fixed and mobile call termination markets and that all fixed and mobile licensees have a monopoly, and thus significant market power, on call termination on their own networks. There are presently no economic or technical supply or demand side substitutes to call termination, nor is it likely that viable alternatives will be introduced in the near future.

3.2.3 Legislative requirements of the ECA

There are a range of remedies or pro-competitive measures available to address the potential harm that can occur in markets where the Authority finds that there is insufficient or ineffective competition and where licensees have been found to have SMP. Section 67(7) of the ECA provides a non-exhaustive list of pro-competitive terms and conditions that may be imposed after following the process set out in Section 67(4). These can be summarised as follows:

- obligations to act fairly and reasonably in relation to interconnection, facilities leasing and access
- transparency through obligations to publish terms and conditions

[53] Section 67(4) states that "... pro-competitive conditions may be imposed upon licensees having significant market power where the Authority determines such markets are found to have ineffective competition".