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GENERAL NOTICE

NOTICE 314 OF 2010

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

"CALL TERMINATION REGULATIONS"
PURSUANT TO SECTION 67(4) OF THE ELECTRONIC COMMUNICATIONS ACT NO. 36 OF 2005

1. The Independent Communications Authority of South Africa (herein after referred to as "the Authority") hereby gives notice in terms of section 4(4) of the Electronic Communications Act No. 36 of 2005 (herein after referred to as "the Act") of its intention to prescribe regulations in terms of Section 67(4) of the Act and section 4 of the Independent Communications Authority of South Africa Act No. 13 of 2000 as amended ("the ICASA Act").

2. A copy of the proposed regulations is available on the Authority's website at http://www.icasa.org.za and in the ICASA Library at 164 Katherine Street, PinMill Farm, Sandton Block D, between 08h30 and 16h30, Monday to Friday.

3. Interested persons are invited to submit written representations on these draft Call Termination Regulations by the 2nd of June 2010 by post, hand delivery, facsimile transmission, or electronically for the attention of:

Pieter Grootes
Project Leader
ICASA
Private Bag X10002
Sandton
2146

or

Block A
Pinmill Farm
164 Katherine Street
Sandton

Fax: (011) 566 3642
Telephone: (011) 566 3641

E-mail: pgroootes@icasa.org.za
Cc : pcokie@icasa.org.za

4. All written representations submitted to ICASA pursuant to this notice will be made available for inspection by interested persons at the ICASA library and copies of such representations will be obtainable on payment of the prescribed fee.

5. At the request of any person who submits written representations pursuant to this notice, ICASA will determine whether such representations or any portion thereof is confidential in terms of section 4D of the ICASA Act. If the request for confidentiality is refused, the licensee making the request will be allowed to withdraw such representations or portion thereof.

6. Persons interested in participating in public hearings must indicate such interest in their written submission.

7. Public hearings will be convened from the 9th to the 11th of June 2010.

8. ICASA intends to finalize the call termination regulations by 30 June 2010.

PARIS MASHILE
CHAIRPERSON

SCHEDULE

"CALL TERMINATION REGULATIONS" PURSUANT TO SECTION 67(4) OF THE ELECTRONIC COMMUNICATIONS ACT NO. 36 OF 2005

1. DEFINITIONS

In these Regulations, unless the context indicates otherwise a word or expression to which a meaning has been assigned in the Act or the ICASA Act has the meaning so assigned.

"the Act" means the Electronic Communications Act, 2005 (No. 36 of 2005);

"Downstream markets" means the national retail market for mobile access and calls and for fixed line access and calls as applicable;

"Established SMP licensee" means a licensee with SMP that is subject to additional pro-competitive remedies;

"Fixed call termination" means a wholesale call termination service provided by an electronic communications network services or electronic communications services licensee to a fixed location, and includes licensees providing call termination using VoIP to a fixed location and fixed wireless services;

"ICASA Act" means the Independent Communication Authority of South Africa Act of 2000.

"Interconnection seeker" means any person licensed in terms of the Act and persons providing services pursuant to a licence exemption that is requesting interconnection, including an applicant for an individual licence;

"Mobile call termination" means a wholesale call termination service provided by an electronic communications network services or electronic communications services licensee to mobile subscriber equipment enabled by wireless technology;

"Reference Interconnection Offer ("RIO") means a document, approved by the Authority, setting out the standard terms and conditions on which an Established SMP licensee offers interconnection services;

"Retail service" means a service offered by an electronic communications service (ECS) licensee to end-users.

"SMP Licensee" means an individual or class licensee who is found to have significant market power as an outcome of a market review carried out in terms of section 67 of the ECA and declared in terms of section 67(4)(d) to be subject to pro-competitive measures.

"Wholesale service" means a service that an electronic communications service (ECS) or electronic communications network services (ECNS) licensee offers other ECS or ECNS licensees.

2. PURPOSE OF REGULATIONS

The purpose of these Regulations is to: -

(a) Define the relevant markets in which the Authority intends to impose pro-competitive measures;

(b) Set out the methodology that is used to determine the effectiveness of competition in such markets;

(c) Declare licensees that have significant market power;

(d) Set out the pro-competitive measures that the Authority may impose and the pro-competitive measures that it must impose to remedy market failure in the relevant markets;

(e) Set out the schedule for periodic review of these regulations;

(f) Provide for monitoring and investigation of anti-competitive behaviour in relation to the relevant markets; and

(g) Provide for the enforcement of these Regulations.

3. MARKET DEFINITION

The Authority has identified separate wholesale call termination markets on each electronic communications network and electronic communications service licensee in South Africa;

4. METHODOLOGY

(1) In determining the effectiveness of competition in the Call termination markets, the Authority has applied the following methodology:

(a) the identification of relevant markets and their definition according to the principles of the Hypothetical Monopolist Test, taking into account the non-transitory (structural, legal, or regulatory) entry barriers to the relevant markets and the dynamic character and functioning of the relevant markets;

(b) the assessment of licensees' market shares in the Call termination markets; and

(c) the assessment on a forward looking basis of the level of competition and market power in the Call termination markets.

5. EFFECTIVENESS OF COMPETITION

Pursuant to regulation 4, the Authority has determined that competition in the call termination markets is ineffective in the provision of both fixed and mobile voice services.

6. SMP DETERMINATION

(1) The Authority declares that each electronic communications network service and electronic communication service licensee that offers voice call termination services is dominant and has SMP in its own market.

(2) The Authority declares the following licensees as Established SMP licensees:

(a) Vodacom (Pty) Ltd;

(b) Mobile Telephony Networks (Pty) Ltd;

(c) Cell C (Pty) Ltd; and

(d) Telkom (Pty) Ltd

PRO-COMPETITIVE MEASURES

7. ACCESS, NON DISCRIMINATION, TRANSPARENCY

All SMP licensees must comply with Section 67(7)(a),(c); and (d) of the Act by complying with the provisions of the Interconnection Regulations.

8. PUBLICATION OF A REFERENCE INTERCONNECTION OFFER (RIO)

(1) Established SMP Licensees must comply with section 67(7)(e) of the Act by submitting a RIO to the Authority for approval within forty five (45) days of promulgation of these Regulations.

(2) The RIO must comply with the minimum contents as prescribed in Appendix A.

(3) The Authority will assess the RIO or any amendments to the RIO within thirty (30) days of submission by the Established SMP Licensee and issue a notice of approval if the RIO is consistent with the Act and these regulations.

(4) Where the Authority determines that the RIO is not consistent with the Act and these regulations, the Authority must direct the Established SMP Licensee to amend the identified terms and conditions within a period determined by the Authority which period must not exceed thirty (30) days.

(5) If Established SMP Licensees receive no written communication from the Authority regarding the assessment of a RIO, within the stipulated thirty (30) day period in regulation 8(3), the RIO is deemed to be approved.

(6) The RIO will become effective upon approval, unless the Authority provides a written notice instructing the licensee to review the RIO.

(7) Provided that all requirements in the RIO are met by both licensees, a request for interconnection based on the RIO must be concluded within fifteen (15) days of such a request for interconnection unless otherwise agreed between the licensees.

(8) An approved copy of each RIO must be published on the Established SMP Licensee's website.

9. PRICE CONTROL

(1) Established SMP Licensees must offer cost-oriented prices for call termination

(a) For the period under review, Established SMP Licensees must comply with the cost oriented prices determined by the Authority and set out in regulation 9(1)(b).

(b) Established SMP licensees must charge the call termination rates in accordance with Table 1:

Table 1: Glide Path (July 2010 – July 2013)

	Mobile Call termination rates	Fixed call termination rates
From July 2010	R 0.65	R 0.15
From July 2011	R 0.50	R 0.12
From July 2012	R 0.40	R 0.10

(2) Other SMP Licensees must comply with the price control obligation of offering commercially negotiated fair and reasonable prices for call termination.

(3) Where Other SMP Licensees fail to agree on price, the dispute resolution procedure outlined in the Interconnection Regulations (Government Gazette No. 33101) applies.

(4) The Authority reserves the right to make an industry determination based on information submitted.

10. ACCOUNTING SEPARATION AND COST ACCOUNTING

Established SMP licensees must comply with Section 67(7)(f)(g) of the Act by submitting regulatory financial reports in line with the format prescribed in the Accounting Separation and Cost Accounting regulations to be prescribed by the Authority.

11. KEEPING OF ACCOUNTS, RECORDS AND OTHER DOCUMENTS (REPORTING)

(1) SMP Licensees must submit to the Authority:

(a) Bi-Annual Market Reports in the format provided for in Appendix B to these Regulations.

(b) Any other information pertaining to the analysis of the Call termination markets that may be requested by the Authority from time to time, in terms of Section 4(3)(g) of the ICASA Act

(2) SMP Licensees must retain accounts, records and documents required for compliance with regulation 11(1) for a minimum period of five (5) years.

12. SCHEDULE FOR REVIEW OR REVISION OF MARKETS

The Authority will review the Call termination markets after a period of three (3) years.

13. EFFECTIVE DATE

These regulations will be effective from the date of publication of the final regulations.

14. CONTRAVENTIONS AND PENALTIES

(1) A licensee which fails to comply with regulation 8(1) is liable to a fine of Five Hundred Thousand Rand (R 500 000.00)

(2) A licensee which fails to comply with regulation 9(1) is liable to a fine of up to Two Hundred Thousand Rand (R 200 000.000)

(3) A licensee which fails to comply with regulation 11 is liable to a fine of up to One Hundred Thousand Rand (R 100 000.00)

Appendix A: Minimum content of a Reference Interconnect Offer ("RIO")

Established SMP licensees must develop their own RIO for the Authority's approval. The RIO must among other things include the following:

1.1. General Legal Principles

- Definitions of terms and abbreviations
- Requirements concerning the exchange and use of information for the purpose of interconnection; and
- Data exchange formats.

1.2. Initiating Negotiations and Proposing Amendments

- Procedure for initiating negotiations as well as that for amending interconnection agreements, including:
  - how a request for interconnection is to be made;
  - to whom a request for interconnection is to be sent; and
  - the information that needs to be included in the application.

1.3. Description of Interconnection Services to be provided

- List of interconnection services offered;
- Full description of each interconnection service; and
- Conditions governing access to services.

1.4. Schedule of Charges for Interconnection Services

- Commercial and financial matters, including billing and collection procedures, and payment terms and conditions;
- The full charge for each interconnection service. Where relevant charges should:
  - be broken down into or built up from the charges for the network components;
  - reflect the different charges for the same service depending on time of day or day of week (e.g. peak/off peak);
  - include an indication of any surcharges;
  - include an indication of charging unit/s (e.g. per second);
- Mechanisms for the review of charges; and
- Billing services for third parties, where relevant (e.g. if operator is billing on behalf of resellers, other ECS or other ECNS).

1.5. Technical Characteristics

- Comprehensive technical description of the interconnect interface(s), including the signalling protocol(s) used;
- Full details of the availability and location of points of interconnection;
- Description of the physical arrangements for interconnection;
- Description of traffic routing arrangements;
- Details regarding access to numbers by the parties
- Requirements to ensure network security or integrity;
- The quality availability, security, efficiency, and synchronization of the services provided.

1.6. Arrangements for the Establishment of Interconnection

- Conditions governing service provision;
- Traffic forecasting requirements and arrangements;
- Arrangements for testing the operation of interfaces and the interoperability of services;
- Fault management procedures (recording and clearing); and
- Conditions governing bank guarantees.

1.7. Other Legal and Procedural Issues

- Provisions on procedures for review, termination, and amendment of interconnection agreements;
- Limitation of liability and indemnity between licensees;
- Penalty clauses; and
- Dispute resolution arrangements and procedures, including the right of either party to request the Authority to intervene to resolve a dispute.

Appendix B: Format for Submission of Bi-Annual Market Reports

1. Purpose

1.1. The Bi-Annual market reports are submitted to fulfil the requirements of regulation 11.

1.2. All SMP licensees must submit market information on a bi-annual basis.

2. Information required

2.1. Information to be submitted regarding retail market services:

- 2.1.1. description of each retail service offering;
- 2.1.2. volume of subscribers;
- 2.1.3. traffic volumes; and
- 2.1.4. revenues generated

2.2. Information to be submitted regarding wholesale market services:

- 2.2.1. Description of each wholesale service offering
- 2.2.2. Volume of customers
- 2.2.3. Traffic volumes
- 2.2.4. revenues generated

3. Format for the compilation of information

3.1. All SMP licensees must compile the required information in the format as available from www.icasa.org.za.

4. The process for submitting the required information to the Authority

4.1. All SMP licensees must submit the required information in electronic form (Microsoft Excel).

4.2. All licensees are required to submit this information by email to the following email address: marketdata@icasa.org.za

5. The time-frame for the submission of information

5.1. All SMP licensees must submit this information in a bi-annual calendar year pattern.

5.2. All licensees must submit information to the Authority on the last Friday of the month after conclusion of a six month period.[1]

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[1] For example, for the period 1 January to 30 June, information must be submitted to the Authority by the last Friday of August.

ICASA Wholesale Call Termination Market Review for the period 2010-2013

Explanatory Note for the draft Call Termination Regulations

April 2010

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List of Abbreviations

(W)CDMA	(Wide) Code division multiple access technology
3G	International Mobile Telecommunications-2000 (IMT-2000) standard
Authority	The Independent Communications Authority of South Africa
CBP	Countervailing Buying Power
CPP	Calling Party Pays
CST	Community Service Telephone
EC	European Commission
ECA	Electronic Communications Act No. 36 of 2005
ECNS	Electronic Communications Network Service
ECS	Electronic Communications Service
Established SMP licensee	A licensee that held a PSTN and MCTS licence and has a market share of greater than ten (10) per cent in the downstream markets as of June 2009
EU	European Union
F2F	a voice call from a fixed network to another fixed network
F2M	a voice call from a fixed network to a mobile network
LCR	Least Cost Routing
M2F	a voice call from a mobile network to a fixed network
M2M	a voice call from a mobile network to another mobile network
MNP	Mobile Number Portability
NCC	Nigerian Communications Division
Network	logical 'network layer', which may be built on top of the physical communication facilities offered by ECNS and ECS licensees
NRA	National Regulatory Authority
RPP	Receiving Party Pays
SMP	Significant Market Power
SSNIP	Small but Significant Non-Transitory Increase in Price
UCC	Uganda Communications Commission
UK	United Kingdom
VANS	Value Added Network Service
VOIP	Voice Over Internet Protocol
WiMAX	Worldwide Interoperability for Microwave Access technology
WLAN	Wireless Local Access Network

Executive Summary

Outline of Conclusions on Market Definition

The Authority's conclusions on Market Definition remain largely unchanged from those outlined in The "Publication of Findings pursuant to Section 4C of the ICASA Act of an Inquiry Conducted in terms of Section 4B" (GG 30449) ("the 2007 Findings Document"). After reviewing market developments since the release of the 2007 Findings Document, the Authority has found no significant substantial new evidence that would cause a change in its view on market definition.

This report has reviewed the following developments that have occurred since the release of the 2007 Findings Document:

- the changes in the Licensing regime that have been implemented in South Africa since the 2007 Findings Document;
- technological developments since 2007 (such as VoIP, WiMAX and other technologies) which have the potential to influence how the wholesale call termination market is defined;
- developments in the economic literature on two-sided markets; and
- the approach to market definition used by regulators in other jurisdictions since the release of the 2007 Finding Document.

Following a review of the potential demand-side and supply-side substitutes at the wholesale and retail level, ICASA has identified separate wholesale call termination markets for each fixed and mobile 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 an electronic communication network operating in South Africa

In this context, the word 'network' does not refer only to a physical communication facility or to a system that can only be provided by an Electronic Communication Network Services (ECNS) licensee. Rather it refers also to the logical 'network layer', which may be built on top of the physical communication facilities offered by ECNS and Electronic Communications Services (ECS) licensees. The ECNS or ECS licensee uses this network layer to provide electronic communications to its customers. In particular, the licensee issues numbers to access or terminate a call to each individual customer and these numbers 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.

When defining a market, wholesale alternatives should constitute the most direct form of potential substitution. However, ICASA considers that no effective functional demand-side alternatives currently exist to call termination on each provider's network. Furthermore, as there is no technological or commercial mechanism for alternative providers to offer call termination on another licensee's network, the consideration of wholesale supply-side substitution does not expand the market.

ICASA also considers that there are no effective retail substitutes to constrain the price of call termination prices to a competitive level. In general, the indirect nature of potential demand-side substitutes, the prevailing Calling Party Pays (CPP) environment as well as the absence of plausible technical or commercial supply-side alternatives to terminating a call on a particular network, significantly reduce the impact of any constraints generated at the retail level. Finally, common pricing constraints broaden the market from termination on specific numbers to all numbers on a particular licensee's network, as well as from any geographic area within South Africa to another.

Assessment of Competition

The assessment of the effectiveness of competition in the defined markets allows for the identification of licensees which possess Significant Market Power (SMP)

The Authority finds that both the fixed and mobile call termination markets identified are ineffectively competitive. This is based on a number of factors including that each licensee identified in each market has 100 per cent market share of call termination on its own network. There is a lack of demand side and supply substitutes, which are unlikely to change over the period of this market review. In addition, there are absolute barriers to entry and ineffective Countervailing Buying Power (CBP) in each of the markets identified. Less established networks with fewer customers are likely to be more constrained by CBP in the setting of wholesale call termination rates when compared to large more established service providers. The Authority's position is that the CBP faced by more established networks is not powerful enough to constrain the level of wholesale call termination to competitive levels.

The Authority finds that each individual service provider is the exclusive provider of wholesale call termination services on their own network. Using the methodology outlined in Section 67(6) of the ECA, as well as the criterion of SMP as set out in Section 67(5) of the ECA, the Authority finds that each licensee has SMP over the provision of wholesale call termination services on its own network.

Pro-competitive terms and conditions

The Independent Communications Authority of South Africa ("the Authority") has undertaken a process which included defining the relevant market (wholesale call termination markets – fixed and mobile), conducting a market assessment and identifying licensees with SMP in such markets. Further to this, the Authority has considered the range of pro-competitive remedies that form part of its regulatory toolkit to address the potential competition problems that it has identified arising from its market assessment.

The Authority has considered the various policy, regulatory and practical implications of imposing each potential remedy. The Authority has found that all fixed and mobile network licensees possess Significant Market Power ("SMP") over wholesale call termination on their own network. However, in order to address the potential problems of SMP, it is not necessary (nor proportionate) to apply the same set of remedies to all SMP licensees in the market. This approach is aligned with the principles of proportionality and is justified, flexible and forward looking.

Further to its analysis, the Authority proposes that the following pro-competitive terms and conditions be applied to all fixed and mobile SMP licensees ("General Obligations"):

- Obligation to provide access in terms of Section 67(7)(a)
- Non-discrimination obligation in terms of Section 67(7)(c)
- Transparency obligation in terms of Section 67(7)(d) and (e)
- Wholesale price control obligation in terms of Section 67(7)(h).

It is proposed that the remedies relating to access, non- discrimination and transparency apply equally to all fixed and mobile licensees with SMP in the wholesale call termination market. The Authority is of the view that an access obligation, as is already provided for in Section 37(1) of the ECA, when a reasonable request is made, ensures interoperability and prevents refusal to deal or denial of access. This obligation alone, however, will not address all the competition problems that have been identified that arise from the Authority's market assessment. Coupled with transparency and non-discrimination obligations, the access obligation can have a positive impact on promoting competition.

The Authority recognises that driving prices down to an efficient level can best be achieved through a fully competitive market. Where this does not occur because of structural issues related to that specific market, then a robust wholesale price control obligation supported by a regulatory accounting/ accounting separation obligation can provide a suitable proxy for full competition. With respect to the price control obligation, while all licensees will be expected to charge "fair and reasonable" prices, specific cost-oriented rates are set for established SMP licensees, namely Vodacom, MTN, Cell C and Telkom, in order to address the competition problem of inefficient pricing.

Supporting obligations for the cost-orientation requirement (which forms part of the price control obligation) will apply only to the above mentioned established licensees as follows:

- Accounting Separation obligation in terms of Section 67(7)(f)
- Requirement relating to the accounting methods to be used in maintaining the separation of accounts in terms of Section 67(7)(g).

For the period of this review, the Authority will use existing cost accounting data complemented by relevant international benchmarks of the cost of fixed and mobile call termination to determine the efficient charge level. The detailed approach to the imposition of wholesale price controls is discussed in Appendix A.

The Authority has conducted a robust analysis to arrive at the proposed framework for the imposition of pro-competitive remedies. In arriving at the recommended way forward, the Authority has:

- Set out the background to the proposed pro-competitive measures, including the principles the Authority will follow in imposing remedies
- Discussed the nature of competition problems that may arise from the Authority's market assessment
- Outlined the pro-competitive measures to be imposed on licensees with SMP;
- Presented its conclusion on pro-competitive remedies; and
- Dealt specifically with the proposals by the Authority to impose a transparency remedy including a Reference Interconnection Offer and a price control remedy (Appendix A).

Monitoring and enforcement of the proposed remedies between review periods is important; as such, the Authority will in terms of regulations made pursuant to section 67(7)(j) of the ECA as well as other regulations made to complement the market review process and outcomes, require licensees to submit the information relevant to each remedy. Additionally, the Authority will

require ongoing information from the various licensees in order to monitor the development of the market and have sufficient information at its disposal at the time of the next review.

The imposition of the proposed pro-competitive remedies is consistent with South African legislation and supported by international best practice. In particular, the approach taken is proportionate, transparent, non-discriminatory and objectively justifiable.

G10-041924—C

1. Defining the market for wholesale call termination

1.1 Purpose

This section of the report sets out the Authority's position on the appropriate market definition for fixed and mobile wholesale call termination services in South Africa.

1.2 Where have we come from?

The definition of the wholesale call termination market follows on from the consultative process undertaken by the Independent Communications Authority of South Africa (the "Authority") in terms of section 4B of the ICASA Act. This prior consultation process is reflected in the:

- Discussion Document on Wholesale Call Termination Market Definition (Government Gazette No. 29568 of 2007);
- Findings Document on the Wholesale Call Termination Market Definition Process (Govt. Gazette 1627 of 2007);

Furthermore, there have been a number of new developments in the South African regulatory regime since the publication of these documents, specifically:

- The introduction of a new licensing regime consistent with the ECA; and
- Reforms to the licence fee regime.

These are discussed below along with the Authority's view on whether the market definition is materially impacted as a result of these changes.

1.2.1 Developments in the South African regulatory regime since 2007

1.2.1.1 A new licensing regime

The new licensing regime introduced in 2009 fulfilled the legislative requirements of the ECA. All former Value Added Network Service ("VANS") licences were converted to Individual or Class Electronic Communication Service (ECS) licences depending on whether they had access to numbering resources or not and, if appropriate, to Individual or Class Electronic Communication Network Licences (ECNS).

The practical impact of this is that all similarly licensed providers are treated on a similar basis in terms of licensing provisions of the ECA. In particular, restrictions were removed on former VANS licensees from building their own electronic communication networks and they may now do so if they are in possession of an ECNS licence.

Over time, the change in the licence regime may create greater infrastructure competition in the fixed and mobile markets in South Africa. It may also lead to greater innovation and investment in the industry.

However, the Authority does not consider that to date the licensing measures fundamentally change the definition of the market as outlined in the 2007 Findings document.

1.2.1.2 A new licence fees regime

A new licensing fee regime was introduced in 2009 . The key elements of the revised regime were to remove the upfront fixed licence fee for licence applicants (which previously varied significantly for the various technology specific licence categories) and to also change the basis on which annual fees are payable by licensees to the Authority (from up to 5 percent of Net Operational Income for some licensees to 1.5 per cent of gross profit across the board for all ECS and ECNS).

The practical impact of the reduction in upfront licence fees is to reduce regulatory costs for new market entrants. The change in the annual licence fee structure reduces such fees for most licensees, but particularly for new and/or smaller licensees. Reducing regulatory costs increases the incentives for potential competitors to enter the market and provide electronic communication services. The changes in the basis for ongoing annual fees may allow smaller and less profitable licensees to compete more effectively with established licensees.

However, the Authority does not consider that these measures fundamentally change the definition of the market as outlined in the 2007 Findings document.

1.3 Legislative requirements of the ECA for defining the relevant market

The Act sets out the process that should be undertaken to conduct a market review. Under relevant parts of Section 67(4) of the Act, the Authority must:

> *Define and identify the retail or wholesale markets or market segments in which it intends to impose pro-competitive measures in cases where such markets are found to have ineffective competition.*

Section 67(6)(a) of the Electronic Communications Act (ECA) states the following:

> *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 markets or market segments.*

These factors are explored in more detail below.

1.4 Market definition for Wholesale Call Termination

1.4.1 Introduction

The ensuing discussion follows the structure outlined in section 67 (4) of the Electronic Communications Act. Section 67(4) as well as the "Guideline for conducting market reviews" released on the 8th of March 2010.

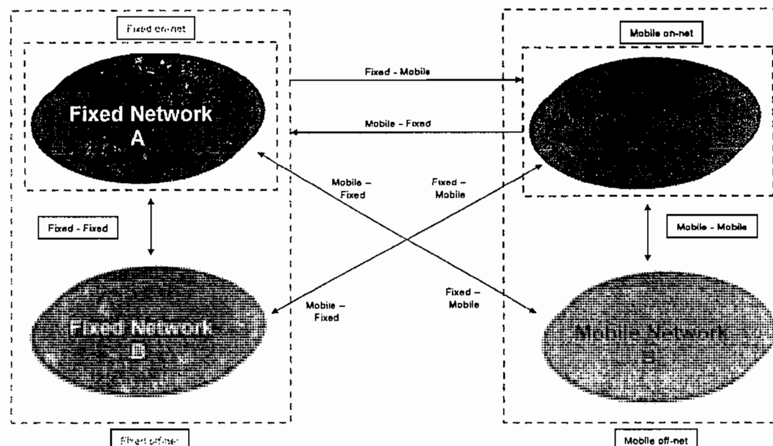
The process of defining a market definition is not an end in itself. Markets are defined in order to assess whether competition is effective and whether any party has Significant Market Power ("SMP") in a particular market. Following from an assessment of the effectiveness of the competition, it is then relevant to determine whether pro-competitive remedies are required to guard against the risk of market failure which leads to ineffective competition.

The first step is to outline the services to be considered relevant for a market definition process.

Mobile and fixed call termination services are wholesale inputs used in the supply of various downstream end-to-end services such as fixed-to-fixed (F2F), mobile-to-fixed (M2F), fixed-to-mobile (F2M) and mobile-to-mobile (M2M) calling services.

Figure 1.1 provides a graphical representation of the range of traffic flows and call scenarios that can occur for voice traffic within South Africa.

Figure 1.1: Traffic flows between Electronic Communication networks in South Africa[1]

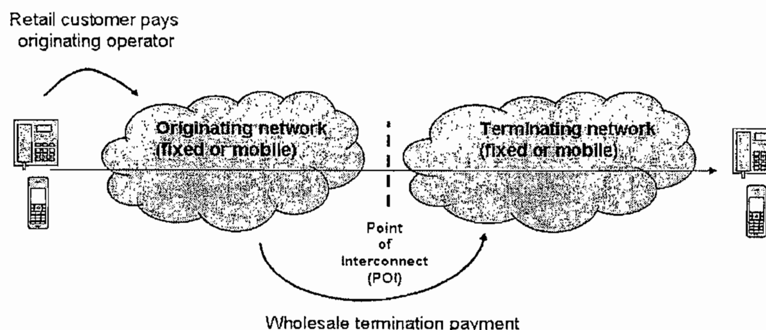


For F2F, M2F, F2M and M2M voice calls, the call originates on the fixed or mobile network to which the calling party (the A-party) is connected. The call will at some stage be handed over to the electronic communications network on which the called party (B-party) is located, and will be 'terminated' or completed on that network.

Based on the current network structures existing in South Africa, the same arrangements will apply for VoIP traffic (including those delivered over WiMAX) as well as those using other technologies (such as fixed wireless services used e.g. (W)CDMA technologies). In particular, irrespective of what technology is used to originate the call, originating licensees will face wholesale call termination charges when calls terminate on other electronic communication networks. The Authority considers that the existence of new technologies (eg. 3G, CDMA Fixed Wireless, WiMAX etc.) does not change the definition of the service in terms of this market review.

The use of the fixed and/or mobile call termination service to supply retail F2F, F2M, M2M and M2F services is outlined in Figure 1.2 below.

Figure 1.2: Use of mobile or fixed call termination to supply retail mobile and fixed calling



[1] Figure 1.1 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.*

Under the CPP billing system that currently exists in South Africa, the end-user making the call pays for the cost of making the call at the retail level. At the wholesale level, the originating fixed or mobile network operator makes a termination payment to the terminating network operator, in order to cover that operator's costs of terminating the call.

1.4.2 Analysis and conclusions of the 2007 Findings Document

The Authority notes that the following sections draw heavily from the published findings that were released in 2007 on the market definition of wholesale call termination for fixed and mobile networks.

Where appropriate the Authority has highlighted specific analysis and conclusions from the 2007 Findings Document. Where issues and analysis are discussed and where views on particular issues are sought, the Authority would urge interested parties to review not just the analysis included in this document but also the analysis and conclusions outlined in the 2007 Findings Document.

1.4.3 Developments in other jurisdictions since the release of the 2007 Findings Document on Wholesale Call Termination

The Authority has reviewed a number of developments in other jurisdictions. In particular, it has taken note of the statements made by other regulators regarding the definition of the market for call termination on mobile and fixed networks.

Presented below is a summary of these developments as well as the Authority's view on whether there is any factor that materially changes the market definition, as outlined in the 2007 Findings document.

1.4.3.1 Emerging markets

Since the release of the 2007 Findings Document there have been a number of measures taken by regulatory authorities in African and other emerging markets that have led to a reduction of termination rates and imposition of other pro-competitive measures on the wholesale call termination market. These measures have been imposed in some instances as an outcome of a market review, and in others as a requirement of the relevant legislation (where no requirement for a market review and thus the market definition process is in place).

In Uganda seven wholesale markets were defined and of these, Market 4 and Market 5 were Fixed Termination and Mobile Termination respectively. Fixed termination was defined by the Uganda Communications Commission (UCC) as *"an interconnection sevice for the carriage of a call from the point of interconnection to the equipment of another party (B) at a known location, including transmission and switching"*

Mobile termination is defined as *"an interconnection sevice for the carriage of a call from the point of interconnection to the equipment of another party (B) at the location of Party B at the time of the call, including transmission and switching"*

The UCC found that fixed and mobile termination markets *"are not competitive and not prospectively competitive'.*[2] It noted the monopolistic nature of the markets and stated that each is generally regarded as a separate market. The UCC in its consultation document noted that

[2] Uganda Communications Commission (2009) *Consultation Document on Competition analysis, Model Interconnection Offer (MIO), Reporting obligations, and Retail price regulation*, , A report prepared by Price Waterhouse Coopers, p. 18. Document can be found here: http://www.ucc.co.ug/interconnect.php

"termination on a fixed number is no substitute for termination on a mobile number, and call origination is no substitute for call termination".[3]

In Nigeria the Nigerian Communications Commission (NCC) in its "*Consultation Paper on Dominance in Selected Communications Markets*" published on 27 October 2009, used a broad market definition. The NCC defined the Mobile Telephone market that included wholesale and retail markets. All licensees were found to have SMP in both markets and a new set of remedies relating to cost orientation will be applied from January 2010.

In Namibia the recent reduction in 2009 of termination rates was prompted by a dispute about interconnection charges and not a market study. As such, the Namibian analysis focussed on benchmarking and cost reduction strategies, and not on the entire market review and analysis process that is required in South Africa in terms of the ECA.

1.4.3.2 Other jurisdictions

Since the release of the 2007 Findings Document there have been a number of market reviews of the fixed and mobile electronic communication markets conducted by various national regulatory authorities. These include reviews of the market for fixed voice call termination in, for example, the UK[4], Latvia[5], and Germany[6] and reviews of the mobile call termination market in countries such as the UK[7], New Zealand[8], Australia.[9].

In 2009, the European Commission (EC) released its Recommendation on fixed and mobile call termination. This followed the release of the draft Recommendation in late 2008 and a subsequent public consultation. The EC Recommendation covers a range of policy issues regarding call termination and provides guidance to National Regulatory Authorities across Europe regarding a consistent approach to the regulation of fixed and mobile networks. The EC's view on market definition remains unchanged and is consistent with the Authority's view (as outlined in the 2007 Findings document and the Guideline for conducting Market Reviews). The EC states the following with respect to the wholesale call termination of fixed and mobile markets in Europe:

> *Wholesale voice call termination is the service required in order to terminate calls to called locations (in fixed networks) or subscribers (in mobile networks). The charging system in the EU is based on Calling Party Network Pays, which means that the termination charge is set by the called network and paid by the calling network. The called party is not billed for this service and generally has no incentive to respond to the termination price set by its network provider. In this context, excessive pricing is the main competition concern of regulatory authorities. High termination prices are ultimately recovered through higher call charges for end users. Taking into account the two-way access nature of termination markets, further potential competition problems include cross-subsidisation between licensees. These potential competition problems are common to both fixed and mobile termination markets.*[10]

The Authority has also reviewed the approach to market definition used in developing markets outside of Africa. In countries such as India[11], and Malaysia[12], NRAs have conducted assessments of

[3] Uganda Communications Commission (2008) *Consultation Document on Interconnection, Cost model, Dominance, and Retail Price Regulation*, A report prepared by Price Waterhouse Coopers, p. 12. Document can be found here: http://www.ucc.co.ug/ConsultationDoc_20081215.doc
[4] See www.ofcom.org.uk/consult/condocs/review_wholesale/
[5] See ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/annualreports/14threport/lv.pdf
[6] See ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/annualreports/14threport/de.pdf
[7] See http://www.ofcom.org.uk/consult/condocs/mobilecallterm/
[8] See http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobiletoMobileTermination/mobiletomobiletermination.aspx
[9] See http://www.accc.gov.au/content/index.phtml/itemId/853794
[10] European Commission (2009) *Commission Recommendation of 7.5.2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU*, p. 3-4.
[11] See http://www.trai.gov.in/WriteReadData/trai/upload/PressReleases/658/pr9mar09no25.pdf
[12] See http://www.skmm.gov.my/registers/cma/report/pdf/PIReportAccessPricing-MCMC-Final.pdf

the call termination market and had similar conclusions about market definition; that is, that the market is defined as call termination on individual "networks".

This review indicates that the approach adopted by the Authority to defining the market for wholesale call termination in South Africa is consistent with international best practice for markets where a Calling Party Pays (CPP) system exists.

1.5 Methodology for product market definition

In describing the methodology to be followed to define the product market for wholesale call termination on the fixed and mobile networks in South Africa, the Authority is cognizant of the need to be consistent with the approach taken by the Competition Commission when it defines relevant markets (for instance, in the case of reviewing a merger application).

The Authority also notes that the methodology proposed is consistent with international best practice. In particular the methodology mirrors the approach used by regulatory and competition agencies in Europe and the United States – as well as many other jurisdictions.[13]

As discussed in the 2007 Findings document the Authority applied a Hypothetical Monopolist test to define the market for wholesale call termination. This involved defining a market at its narrowest level (call termination to a specific mobile or fixed number) by applying a Small but Significant Non-Transitory Increase in Price (SSNIP) test.

In the 2007 Findings Document the SSNIP test is described in detail as well as the range of issues that need to be considered when applying the Hypothetical Monopolist Test to the electronic communications market in South Africa. These issues include the appropriate time frame for considering supply side substitution, the 'cellophane fallacy' and the influence of common pricing constraints. These issues are not discussed in detail in this document as the Authority's views are unchanged from those outlined in 2007. The Authority refers interested parties to the relevant sections of the 2007 Findings Document for further information.[14]

1.6 Two-sided markets

The two-sided nature of the market arises because of the interdependence between calling and called parties – with both sides benefiting from the other. Calling parties benefit from having more people connected to a network that they can call, and called parties benefit from being able to receive calls. The Authority notes that it is self-evident that a market for wholesale call termination cannot exist without a market for call origination.

There are many examples quoted in the economic literature of two-sided markets (such as the provision of dating services or the interplay between media advertising and media subscription services).[15]

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[13] For instance see European Commission (2002) *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services*, (2002/C 165/03).

[14] See ICASA (2007) ibid, p. 18-20.

[15] The Authority is aware of a considerable range of literature on the economics of two sided markets, including the following selection of references: Valletti (2006), *Mobile Call Termination: a Tale of Two-Sided Markets*, MPRA Paper No. 2605 (http://mpra.ub.uni-muenchen.de/2605/), Rochet and Tirole (2003) *Platform Competition in Two-Sided Markets*, Journal of the European Economic Association, MIT Press, vol. 1(4), pages 990-1029, Rochet and Tirole (2005) *Two-sided Markets: A Progress Report*, *(http://idei.fr/doc/wp/2005/2sided_markets.pdf)*, Evans (2003), *The Antitrust Economics of Multi-sided Platform Markets*, , Yale Journal of Regulation vol. 20, no. 2,: 325-381, Wright (2004) *One Sided Logic in Two-Sided* Markets, Review of Network Economics Vol. 3, Issue 1 - March, pp 42 - 63 and Armstrong (2006) *Competition in Two-Sided Markets*, RAND Journal of Economics, The RAND Corporation, vol. 37(3), pages 668-691, Autumn.

The Authority notes that there is a crucial difference in the two-sided nature of the market for electronic communications compared to other two sided markets reviewed in the economic literature. In electronic communications there is a discontinuity in the demand side between the purchasers of the service, where wholesale customers purchase termination, and the retail customers purchase of calling services and subscription. This discontinuity arises from the CPP arrangement that exists in South Africa, as well as in many other jurisdictions.

The Authority notes that while wholesale call termination is required in order to complete an end-to-end call, and therefore benefits both the calling and called party, it is only purchased by wholesale customers. The discontinuity of demand caused by CPP means that even though the market for wholesale call termination can be considered 'two-sided' in an economic sense, it does not necessarily follow that licensees are competitively constrained when setting prices for termination on their networks.

In terms of the market definition process, the Authority acknowledges that the market for wholesale call termination is two-sided, and therefore, is of the view that it is necessary to consider inter-relationships between the two sides of the market (called and calling parties). This requires a review of the inter-relationships between the wholesale termination market and the retail market.

As part of the market review, the Authority examines the extent to which relevant downstream markets are able to constrain licensees when they are setting wholesale call termination rates.

If relevant downstream retail markets are unable to constrain prices in the wholesale call termination market, then it follows that the wholesale call termination services should be considered as a distinct market. The Authority reviews demand-side (as well as supply-side) substitution in the sections that follow.

It is also appropriate to consider the impact of the two-sided nature of the electronic communications market when assessing the competitiveness of the defined markets as well as when considering the impact of imposing regulation on the call termination market. Issues such as the so called 'waterbed effect' and the on-net/off-net retail price differentials are considered by the Authority when assessing the effectiveness of competition in the electronic communications wholesale call termination markets. The 'waterbed effect' is concerned with the extent to which price changes on one side of the market impact on the prices charged on the other side of the market. Above cost wholesale call termination can lead to significant on-net/off-net retail price differentials, which have the potential to have adverse impacts on competition in the retail market.

This approach to the treatment of two sided markets is consistent with that used in other jurisdictions that have considered this issue (such as New Zealand and UK). The Authority notes that regulators in these markets have defined the relevant market based on call termination on an operator's own network.

Regulators have not widened the definition to included call origination. However, the two-sided nature of the market has been considered by these regulators during the assessment of competition and remedies phase of the market review process.

1.7 Demand-side substitution

As discussed above, the methodology used by the Authority was to apply a Hypothetical Monopolist test to assess what demand side substitutes should be included in the product market definition.

The Authority notes the requirement to assess demand side substitution on the basis of the effect of a price increase on both wholesale and retail customers (given that the demand for wholesale call termination is a derived demand).[16]

1.8 Wholesale demand-side substitution

Wholesale demand-side substitution explores the potential for an operator (rather than a retail customer) to substitute away from purchasing wholesale call termination on another operator's network when one of its customers tries to call a customer on that network.

In order to allow its customer to complete an off-net call, the operator has no alternative but to purchase wholesale call termination from the terminating operator. Without such a service, the customer would be unable to contact people who subscribe to the other operator's network.

The Authority is not aware of any viable and effective wholesale substitutes for call termination that currently exist or are likely to emerge over the period of this market review (2010-2013).

As such, the Authority considers that there are no technical or commercial wholesale substitutes for wholesale call termination on the terminating licensees' network. Hence, in terms of wholesale demand the market cannot be broader than call termination on each operator's network.

1.9 Retail demand-side substitution

The demand for termination is a derived demand. It originates from the network of an operator who carries the call on behalf of a customer who has originated a call. Changes in termination rates will feed through, to some extent depending on the level of 'pass-through', to retail prices.

As discussed above, the hypothetical monopolist test provides a methodology to assess how customers will respond to a small but significant price increase (typically considered to be in the range of 5-10 per cent). However, in practice, retail customers do not face termination fees directly because they do not purchase call termination services directly. Call termination services are purchased at a wholesale level by licensees and are used in combination with a number of other wholesale inputs to provide a retail off-net call service (which allows customers to make calls to - and receive calls from – customers on other networks). Any substitution in response to termination price changes at the retail level is therefore 'indirect' and is based on consumers reacting to any feed-through to off-net retail prices, not directly to the wholesale price of call termination.

As discussed in more detail in the 2007 Findings document, the indirect nature of retail demand-side substitution and call termination charges has a number of implications for the application of the hypothetical monopolist test. In particular, the impact on retail demand of changes in wholesale prices will depend on a number of factors, including:

- The relative contribution of call termination rates to the retail cost of an off-net call;
- The extent of pass-through of changes in wholesale prices to the retail market;
- The extent of customer awareness of the identity of the underlying network being called when making calls;
- The extent of customer awareness of the retail price of calling different networks; and
- The availability of demand-side substitutes.

These factors are discussed in more detail below as well as the Authority's assessment of their impact on the effectiveness of retail demand-side substitutes for wholesale call termination.

[16] Conceptually the demand for wholesale call termination is derived from the demand for call origination in the access market. There is no call termination without call origination.

1.9.1 The relative contribution of call termination rates to the retail cost of an off-net call

The greater the cost of termination, (which contributes to the retail price of a mobile or fixed call), the more that increase in termination charges will feed through to off-net retail prices respectively.

The retail price faced by the customer for making an off-net call includes not only the termination costs but also a range of additional input costs added by the originating network (such as origination costs, switching costs, apportioned fixed and retail costs as well as a profit margin).

1.9.2 Pass-through

For there to be an impact on retail demand, a change in wholesale rates must have an impact on retail prices. If, for example, there is no 'pass-through' of higher wholesale call termination charges to higher retail off-net prices, then no retail demand-side substitution is possible as consumers face no change in retail prices – and hence no reason to react to higher wholesale rates.

If pass-through is limited (if, for instance, the off-net provider absorbs some of the cost increase), then this will dampen substitution behaviour in the retail market as customers do not face the full increase in price. As a result, there is less incentive to seek alternative demand side substitutes and hence the behaviour of retail customers is less likely to impose effective constraints on the hypothetical monopolist of wholesale call termination.

1.9.2.1 The reality of pass-through in the South African market

The Authority notes the recent benchmarking study on regulatory approaches to fixed-to-mobile pass-through prepared for the National Regulatory Authority in Australia.[17] One of the key conclusions of the report was that there was less than 100 per cent pass through in all the countries reviewed. In all 10 benchmarked countries (except Poland which had introduced specific retail price caps on fixed-to-mobile prices), the retention rate[18] on fixed-to-mobile retail prices has increased since the introduction of regulation on mobile call termination.[19]

For the provision of mobile services, South Africa shares this experience. Licensees who provide mobile services serve a larger customer base and are therefore insulated from competitive pressures to respond to any reduction in input costs. This is evidenced by the recent less than 100% pass-through of the reduction of peak-hour mobile call termination rates from R1.25 to R0.89.

However, in the provision of fixed-line services, South Africa has experienced 100% pass-through. Both Telkom and Neotel have explicitly passed the recent R 0.36 reduction in mobile termination rates to the consumer. This indicates the increased competitive pressure on the provision of fixed-line services.

It also indicates that mobile termination rates in South Africa are inefficiently priced.

1.9.2.2 Licensee ("network") awareness

If customers do not know the identity of the operator they are calling, they will not be able to react to any price increase of calling that operator. Hence, if customers lack an awareness of the operator of the called party, then no retail-demand side substitution is possible. This is because customers will not realise that they are calling an operator where termination rates have increased. Hence, they are unable to effectively modify their behaviour to influence the profitability of the service provider whose

[17] Analyses Mason (2009) *Regulatory treatment of fixed to mobile pass through*, A report for the Australian Consumer and Competition Commission, October.
[18] For the purposes of the report, fixed-to-mobile retention is the difference between retail fixed-to-mobile call rates and wholesale mobile call termination rates. It is composed of the fixed operator's own costs (origination costs, interconnection network costs and retail costs) and its profit margin.
[19] For a summary of the trends in retention rates for each of the 10 benchmarked countries, see page 28 of the Analyses Mason report on the regulatory treatment of fixed to mobile pass through (2009).

termination rates have increased. If service provider awareness is limited, it follows that the substitution effect will be muted.

For fixed licensees, there is likely to be reasonably high service provider awareness, given the high market share of Telkom. However, as new entrants build market share over time, the level of service provider awareness is likely to reduce. Also, there are a number of reasons why service provider awareness of mobile licensees may be relatively lower than awareness of fixed licensees.

When there were only a few licensees in the market it was relatively easy to know the operator you were calling by reviewing the number called (e.g. 082: Vodacom, 083 MTN, 084 Cell C, and fixed geographic numbers were Telkom). However, the mobile licensees have exhausted their original numbering ranges and now occupy the 072, 073, 074, 078 and 079 ranges providing less visibility of which range belongs to which service provider. In addition, there are now more service providers available to call. There is a new fixed line service provider (Neotel), and other ECS and ECNS service providers who have their own separate mobile number ranges in the 087 range (e.g. Internet Solutions, MWeb).[20] Some of these service providers now also have geographic numbers, which further reduces the consumers' knowledge of which operator they are calling. This has made it more difficult for consumers to know the operator of the called party solely from a review of the number range.

In addition, it is likely that there has been a move from remembering 'numbers' to using 'names' to call people. Most of the calls made by customers are to numbers that are already stored in the address books of their mobile and fixed handsets. The customer tends to choose names to call – without necessarily having awareness of the underlying number that is being called. With effort, customers could find out the number ranges that align to each service provider (e.g. Telkom has a price list available on its website) – but this is becoming more difficult over time as more service providers begin to offer retail services.

Finally, the introduction of mobile number portability (MNP) in November 2006 and geographic number portability in December 2009 makes it more difficult to accurately identify the service provider being called. This is because consumers will not know with certainty which service provider the called party is attached to – even if they know the number they are calling and have knowledge of the numbering plans of each of the service providers.

The issues around MNP are discussed in detail in the 2007 Findings Document and are not repeated here. However, the Authority notes that the practical impact of MNP on the effectiveness of retail demand-side substitution in response to changes in the wholesale call termination rate will depend on the extent of actual number portability. The Authority notes submissions by licensees as part of the public consultation on the 2007 Findings Document that the total amount of porting has been relatively low. If this is the case, then the chance of a customer being 'wrong' about which service provider the called party is on is also very low. However, the Authority notes that although the extent of porting has been low[21], this is likely to increase over time. In addition, the very fact that number portability exists increases the level of uncertainty for the customer (even if the actual amount of porting is low).

On the other hand, there is some evidence that service provider awareness is high for a sub-set of price sensitive customers. A large differential in the price for on-net versus off-net calls creates strong incentives for price sensitive customers to have knowledge of the service provider of the called party. There is anecdotal evidence that many customers use multiple SIM cards and use SIM swapping in order to take advantage of lower on-net calling rates offered by different service providers. Indeed, the data collected from licensees indicates that the mobile penetration level in South African is now over 100 per cent. While some of this may be explained by customers having multiple SIMs for different services (such as a work number and a home number), it is likely that a portion of subscribers have purchased SIM cards on two or more networks in order to take advantage of lower

[20] As of December 2009, 147 licensees have been issued separate number ranges.
[21] ICASA understands that there has been around 500,000 number ported since the introduction of MNP in South Africa.

on-net rates. In order for these customers to benefit from lower on-net call prices, it is necessary for either the called or the calling party (or both) to have specific service provider knowledge.

While the Authority considers that there are likely to be a portion of customers with high service provider awareness, the total number of these types of customers is likely to be low when compared against the total customer base. Also, there are reasons to believe that service provider awareness will decrease over time (for both fixed and mobile networks).

1.9.3 Price awareness

In order for retail customers to react to changes in wholesale call termination charges, they must be aware of the price of calling particular licensees relative to the price of using substitute products. An understanding of the different prices available to contact someone is a necessary condition for demand side substitution to be effective in influencing the price of call termination.

If price awareness is zero then no substitution is possible as customers will not know whether or not there has been a relative price change in the price of off-net calls in comparison to available substitutes. If there is limited customer price awareness, there will be a muted demand response from price changes.

A further complication exists in the mobile industry in that many retail price packages include a bundle of off-net minutes that are not differentiated by the network called. This may impact on the extent to which an increase in the price of a mobile call (as a result of a change in call termination rates) may influence consumer behaviour. It is likely that callers with bundled minutes will be less price sensitive to a increase in the cost of calling. As a result, these customers will impose less of a constraint on the level of call termination charges.

Table 1.1 provides an outline of the proportion of contract customers to prepay customers in South Africa as well as the revenue shares of both customer groups. It is likely that contract customers are more likely to receive bundled minutes compared to pre-pay customers. While the absolute number of customers on contracts is low (16 per cent), the contribution of these customers to total market revenues are much higher (over 55 per cent).

Table 1.1: Proportion of South African Mobile market by connections and revenue

	Connections	Revenue
Contract	16 per cent	55 per cent
Prepay[22]	84 per cent	45 per cent

Source: Analysis of operator data

Issues of price awareness were discussed in more detail in the 2007 Findings document and are not repeated here. However, the view of the Authority remains unchanged: price awareness is likely to be substantially less than 100 per cent.

1.9.4 Sensitivity of customers to the price of incoming calls

If customers choose their operator on the basis of the price of incoming calls, then this would impose a constraint on termination charges (given that the price of incoming call charges are driven largely by the level of call termination charges).

[22] Note that the number and hence proportion of prepay connections may represent a small overestimate due to the definition of "active" subscribers not being consistent between the three mobile licensees.

But the Calling Party Pays (CPP) system (as exists in South Africa) has a significant impact on subscribers' sensitivity to the price of incoming calls. In particular, because the called party does not pay for incoming calls, they are less sensitive to any changes in the retail price of incoming calls as a result of changes in the wholesale call termination price.

The overall impact of this is that licensees have more incentive to compete on the basis of outgoing calls in order to retain existing - and attract new - customers. This is because it is these prices that are actually paid for by their subscribers. Licensees are unlikely to have similar incentives to compete on the basis of the price of (off-net) incoming calls, as the costs of these calls are paid for by the calling party, who are subscribers of other licensees.

Nevertheless, it is still possible for mobile subscribers to respond to an increase in the cost of incoming (off-net) calls. When reviewing this issue in the UK, the regulator (Ofcom) identified four conditions that *must* be met for this to occur.[23] These conditions were:

- Mobile subscribers should value incoming calls to such an extent that, a significant reduction in the number of calls induced subscribers to change networks;
- Callers must be sufficiently aware that they are calling a mobile and that they are calling a specific network;
- Callers must be sufficiently aware of the price of calling a specific network; and
- Callers must be sensitive to changes in the prices of calling the network they want to reach.

If all four conditions were met, then the behaviour of subscribers in response to an increase in the cost of incoming calls could act as a constraint on mobile call termination charges.

As discussed earlier, the Authority considers that for a number of reasons there is likely to be low customer awareness of the network called and the relative prices faced for off-net calls in South Africa.

This view is consistent with international evidence suggesting that it is unlikely that these four conditions are met in CPP markets (especially ones where mobile number portability exists). Evidence suggests that the price of incoming calls is not considered by consumers to be an important factor in their choice of a mobile network and that consumer awareness of the price of calls to mobile phones is limited, especially in respect of the price of calls to each specific network. The Authority considers that it is likely that similar conditions exist in South Africa and that similar conclusions can be made about this market.

1.9.4.1 Closed user groups

"Closed User Groups" describe a trend through which groups of subscribers who call each other actively co-ordinate their choice of network so as to benefit collectively through lower on-net retail prices. In this scenario, subscribers choosing an operator take into account the operator of other parties with whom they are likely to communicate. They do this in order to reduce the cost of calling those subscribers as well as the cost those subscribers face in calling them.

For closed user groups to be effective as a constraint on the charges of wholesale call termination and to ameliorate the effect of the CPP arrangement these groups should be numerous and not capable of being segmented through targeted tariffs that bypass the usual termination charges.

However, in practice, the Authority notes that where closed user groups do exist, licensees tend to have been able to identify them and offer them specific tariff offers (such as Cell C's Friends and Family offer). These techniques of customer segmentation have the effect of dulling the competitive constraint that closed user groups can potentially play on the level of wholesale call termination charges. By separating out some or all of the more price sensitive customers from the rest of the customer base, licensees are able to limit the constraint on the termination charge from the more

[23] Ofcom (2006) Mobile Call Termination Market Review, Consultation paper, March.

price-sensitive customers. As a result, licensees face even less competitive pressure in setting charges for the other customers.

In jurisdictions where the extent of closed user groups has been studied, it has been found that it is only a minority of subscribers that tend to be price sensitive to the cost others incur in contacting them.

For instance, in the UK, the regulator (Ofcom) reviewed the impact of closed user groups as a constraint on call termination charges. In its 2007 market review it stated:

> *The existence of closed user groups could ameliorate the effect of the CPP arrangement and act as a constraint on voice call termination charges. However, for this constraint to be effective these groups should be numerous and not capable of being isolated through targeted tariffs that bypass the usual termination charges. .... the evidence available shows that few groups of people are sensitive to the cost of incoming calls. Moreover, those that are can be targeted with tariffs which bypass the usual termination charges. ... Therefore Ofcom takes the view that closed user groups do not provide a sufficient competitive constraint on termination charges.*[24]

The Authority considers that similar conclusions can be made for the South African market.

1.9.4.2 The impact of multiple SIM cards

If customers of particular licensees, could receive their incoming calls on networks other than the one they subscribed to for making outbound calls, this could exert competitive pressure on the level of call termination charges. For this form of substitution to take place, the called party must be able to switch their handset between different licensees. This is possible through the through the use of multiple SIM cards, either manually or automatically switched (or by holding more than one handset).

The Authority is aware of anecdotal evidence of SIM swapping in South Africa. In addition, the high level of mobile penetration may indicate that a number of subscribers use more than one SIM card.

In the 2007 Findings Document, the Authority concluded that SIM Card swapping (to the extent that it occurs) is unlikely to constrain wholesale mobile call termination to competitive levels. Section 3.5.6.2 of the 2007 Findings Document discussed in detail the range of evidence and analysis used to come to that conclusion. It is likely that those customers with multiple SIMs are motivated by different incentives; that is, to take advantage of differences in the prices of outgoing calls (i.e. different on-net versus off-net prices) or separate billing arrangements (work versus personal accounts).

The Authority has no reason to consider that the market has changed significantly since 2007 for a different conclusion on SIM swapping to be made.

1.9.5 Retail Demand-Side Substitutes for an off-net mobile call

Even if consumers are price sensitive to the cost of outbound off-net calling, they are only able to act as a competitive constraint on the level of call termination charges if they are willing to adapt their behaviour through substitution, so that mobile licensees lose profits on mobile termination if they attempt to raise termination rates.

Regulators in other jurisdictions that have reviewed the wholesale call termination market have typically concluded that there are no retail demand-side substitutes that sufficiently constrain a price increase in wholesale call termination.

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[24] Ofcom (2007) Mobile Call Termination Statement, March, p. 25.

The range of potential options available to a caller as a substitute for contacting a specific number by calling them using their mobile have been identified through numerous market studies conducted by regulators in other jurisdictions. These include:

- Mobile-to-fixed as a substitute for mobile-to-mobile off-net call;
- Mobile-to-mobile call as a substitute for fixed-to-mobile call;
- On-net mobile to mobile call as a substitute for mobile-to-mobile off-net call;
- SMS and instant messaging as a substitute for a mobile-to-mobile call; and
- Voice over Internet Protocol (VoIP).

In addition to the range of potential substitutes outlined above, a number of stakeholders argued in the 2007 Findings consultation on Wholesale Call Termination that there was a range of factors unique to South Africa that acted as a constraint on wholesale mobile call termination fees. These factors can be summarised as follows:

- That the South African population is relatively poorer than that in other jurisdictions where similar market reviews have been conducted. As a result, the average South African subscriber is more price sensitive with a higher proportion of subscribers making use of call back services. For many calling scenarios in South Africa, this creates a type of Receiving Party Pays (RPP) system with the called and calling party sharing the costs of calls;
- The widespread use of multiple SIM cards shows evidence of high price sensitivity (and high network awareness), which acts to constrain increases in call termination rates;
- It has been argued by some stakeholders that the existence of numerous Least Cost Routing (LCR) licensees constrains termination rate increases; and
- The widespread use of Community Service Telephones (CSTs) in South Africa. Given that CSTs in South Africa have lower call termination rates (as part of a licence condition on mobile licensees), this acts to lower the effective cost of calling and through that constrain (mobile) wholesale call termination rates.

Each of these potential retail demand-side substitutes is discussed in the following sections.

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

If the price of a mobile call increases, then a calling party may decide to switch to calling the intended party on a fixed number, either as a mobile to fixed (M2F) call or a fixed to fixed (F2F) call. As a result the terminating operator would not earn any revenue on these alternative communication methods as they completely bypass their network.

The Authority considers that this potential demand-side substitute is ineffective in constraining the price of wholesale mobile call termination. The reasons are outlined in detail in the 2007 Findings Document and are not repeated in this document. In summary, the Authority considers that M2F and/or F2F are unlikely to be viable alternatives to a mobile to mobile off-net call for the following reasons:

- The ability to use the fixed network as an effective substitute for making a off-net mobile to mobile call is limited by low penetration of the fixed network25. This suggests that fixed calls and mobile calls are in separate markets;
- The ability to call fixed lines is limited due to the lower probability of actually reaching the customer (given the need for the customer to be near a fixed line phone at the time of the call). There are significant differences in the functionality of mobile calls (for example, the immediacy of contact) when compared to fixed calls. This adds to the view that fixed and mobile calls are in separate markets; and
- The large differentials in retail prices also provide evidence that fixed calls and mobile calls are in separate markets.

[25] Fixed penetration is currently estimated to be just over 10 per cent.

Given these factors (amongst others discussed in the 2007 Findings Document), the Authority considers that F2M and F2F are not effective substitutes for an off-net mobile to mobile call in South Africa. As a result, these demand side alternative to making an off-net mobile call are unlikely to constrain the price of wholesale mobile call termination and licensees would be able to maintain a SSNIP, even in the presence of opportunities for customers to make M2F and F2F calls.

1.9.5.2 Off-net mobile calls as a substitute for fixed to mobile calls

If the price of calling a mobile party from a fixed line increases then the calling party may switch their behaviour so that they contact the called party from a mobile rather than a fixed line. As a result off-net mobile calls may act as a potential demand side substitute to constrain a SSNIP of wholesale mobile call termination prices.[26]

In the 2007 Findings Document, the Authority stated the following regarding the effectiveness of off-net mobile calls as a substitute for fixed-to-mobile calls:

> *According to current interconnection agreements, off-net mobile calls attract the same call termination fee as fixed-to-mobile calls. Given the principles of interconnection regulation as set out in the ECA, non-discrimination of this type will continue to hold going forward as both call types are and will continue to be subject to the same mobile call termination fee. As such, a SSNIP in the mobile termination fee to fixed line networks will be matched by the same price increase to mobile networks. This means that a) as both fixed-to-mobile and off-net mobile prices could increase equally (with equal pass-through) relative prices may not change, and b) any switching would not make the SSNIP unprofitable given that the termination provider themselves earns exactly the same revenue from both call types (i.e. the common termination fee).*[27]

The Authority considers that these findings are still relevant and that, as a result, off-net mobile calls do not constrain the price of fixed-to-mobile calls (and the associated wholesale mobile call termination rate) or vice versa.

1.9.5.3 On-net mobile to mobile calls as a substitute for mobile to mobile off net calls

M2M on-net calls do not involve the payment of termination charges and are generally set at lower retail prices than off-net calls.

These types of calls could potentially act as a substitute for off-net mobile calls and hence, constrain the level of termination charges. However, the Authority considers that, it is highly unlikely that on-net mobile calls are an effective demand side substitute that constrains the price of wholesale mobile call termination rates.

For on-net mobile calls to be an effective demand-side substitute for F2M calls, the called party needs to be on the same network as the calling party. This could be done by having multiple SIM cards (in terms of either the calling party or the called party, or both). The data from the mobile licensees suggest that there may be a significant minority of subscribers that have more than one SIM card. However, as discussed in Section 1.9.4.2, sim-swapping is unlikely to constrain wholesale mobile call termination rates to competitive levels. The Authority also notes that for many customers, the process of SIM swapping may be labourious, making it likely to be used by only the most price sensitive of customers.

In addition, there would need to be high levels of network awareness for on-net M2M to be an effective demand-side substitute for wholesale mobile call termination. However, as discussed in Section 1.9, the Authority considers that network awareness is low among a large number of subscribers and that the overall level of network awareness will decrease over time (driven by such developments as number portability and the entry of new service providers).

[26] The use of on-net mobile calls as a substitute for fixed to mobile calls is considered in the next section.
[27] ICASA (2007) ibid, p. 61.

However, there are particular reasons to expect the awareness of the network called to be relatively higher in South Africa compared with other jurisdictions where this issue has been reviewed. These reasons include:

- With only three mobile networks available and with two of these having a combined market share of nearly 90 per cent[28]), it may be relatively easy for South African subscribers to know which service provider they are calling (when compared to markets will a higher number of service providers). In particular, the probability of successfully making an on-net call is reasonably high (even with the existence of MNP);
- The anecdotal evidence of SIM swapping suggests that those customers that engage in the practice are aware of the operator they are calling (so as to take advantage of lower on-net prices)
- The large on-net/off-net price differentials that have been implemented by the licensees increases the incentives on price sensitive subscribers to have multiple SIMs and be aware of the network called.

In Section 3.5.6.7 of the 2007 Findings document, the Authority discussed a range of additional reasons why the presence of on-net mobile calling was not a sufficient reason to expand the market definition of wholesale mobile call termination. This analysis is not repeated in this document but the Authority notes that this analysis is still relevant.

In summary, the Authority considers that on-net mobile calls are not likely to be a strong competitive constraint on the level of wholesale mobile call termination charges. This is disputed by the fact that high on-net/off-net price differentials combined with the large number of price sensitive low-income customers may create strong incentives for many customers to obtain multiple SIMs and engage in SIM swapping to take advantage of lower on-net retail rates. However, this substitution is unlikely to constrain termination charges due to, amongst other things, the ability of mobile licensees to segment price sensitive consumers from other non-price sensitive consumers (as discussed earlier with reference to closed user groups in Section 1.9.4.1). As a result of this type of customer segmentation, mobile licensees are then able to set high termination charges for less price sensitive subscribers (i.e. off-net termination charges). As a result, the nature and extent of this type of call substitution is not sufficient to act as a competitive constraint on wholesale mobile call termination charges.

1.9.5.4 SMS and instant messaging as a substitute for fixed or mobile to mobile calls

SMS and instant messaging services (such as Mxit, a popular low-cost instant messaging service in South Africa[29]) may be used by some subscribers as an alternative to making a standard mobile or fixed call. However, there are a number of functional differences between sending an SMS or engaging in Instant Messaging and making a mobile call:

- SMS has a limited number of characters (160) which, by necessity, forces consumers into adopting a short hand way of communicating. Some new phones now allow numerous SMS to be linked – though each SMS would be charged separately. This means that SMS has significantly different functionality to a voice call;
- SMS is not sent or received in real time because, unlike mobile calls, SMS are transferred between networks on a store and forward basis, rather than on a 'real time' basis. As a result, SMS do not guarantee the opportunity for immediate conversation and interaction offered by voice calls;
- While instant messaging provides a range of potential improvements on the SMS experience (such as real time conversations and unlimited text conversations), it requires both parties to be registered and 'online' for instant messaging to be exchanged. Again, this is significantly different in functionality to voice calls. It also reduces the total base of subscribers that could potentially switch due to a SSNIP in wholesale call termination.

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[28] As of June 2009, based on data supplied by the licensees.
[29] See http://www.mxitlifestyle.com/

Whether SMS and Instant Messaging are retail substitutes for F2F, F2M, M2F or M2M calls is only relevant if this demand side substitution can have an impact on the terminating licensees' profitability. However, the mobile operator providing voice calls also controls access to the network for Instant Messaging (and may control the retail price). For SMS, the mobile operator has control over the retail price to the subscriber. In this way the operator is able to set retail charges for SMS and access to Instant Messaging in such a way to avoid any competitive pressure on its charges for wholesale call termination.

The Authority refers interested parties to Section 3.5.6.10 of the 2007 Findings Document, which includes additional detailed analysis on the potential for SMS (and Instant Messaging) to act as a demand side constraint on wholesale call termination prices.

The Authority considers that SMS and Instant Messaging services do not act as a constraint to wholesale call termination and are sufficiently different functionally to be considered in a different market to that of wholesale call termination.

1.9.5.5 Voice over Internet Protocal (VOIP) calls

There are now opportunities for customers to make Voice over Internet Protocol (VoIP) calls using both fixed and mobile technologies.

VoIP on fixed networks (such as Skype) allows callers to speak via computer broadband connection at low individual direct call costs, and for this type of call no termination charge is levied. However, for customers to use VoIP services, customers may need to pay for internet access.

In a similar way, mobile service providers now offer internet origination technologies that can facilitate VoIP services. Instead of using a mobile device to call another party in the traditional way (and incurring a mobile call termination fee), parties can arrange to contact each other over the internet using, for example, Skype or Truphone.

VoIP services could represent an effective substitute for making a mobile call but this would depend on whether it is possible to make a VoIP call to a mobile subscriber without incurring a termination charge controlled by the terminating operator. If this is possible, then it is theoretically possible for an alternative way of contacting a mobile subscriber to exist – which would potentially provide a competitive constraint on the mobile termination fees.

Whether VoIP on mobiles would be similarly cheaper than equivalent voice calls on fixed networks will depend on the charging arrangements set by the mobile service providers for these types of calls as well as the costs of internet access.

A customer making a VoIP call only pays for internet access. The called party similarly is only paying for access to the internet to receive the call. Hence, for VoIP calls, both the called and calling party pay for the facility to receive and make calls. This represents a different charging arrangement to traditional CPP and the concept of a wholesale termination charge under this type of calling scenario no longer exists.

These new charging arrangements (which effectively represent a move away from CPP to a form of partial Receiving Party Pays) clearly change the incentives on the called party, although it is unclear in what specific manner. For example, it is possible that a called party may not accept VoIP calls because she would have, in part, to pay for them, thus forcing the calling party to reach them via a standard voice call to their mobile. In this case, VoIP calls would not impose competitive pressure on the level of the termination charges. There is less incentive from a receiver's perspective to accept a VoIP call as opposed to a circuit switched call, as they pay for the former (partial RPP) but not the latter (CPP).

The constraining effect of VoIP calls to mobiles or fixed numbers may also be undermined by the behaviour of service providers. If the service provider controls both the price of the termination of calls

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.

[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.

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[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.

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.

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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.

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.

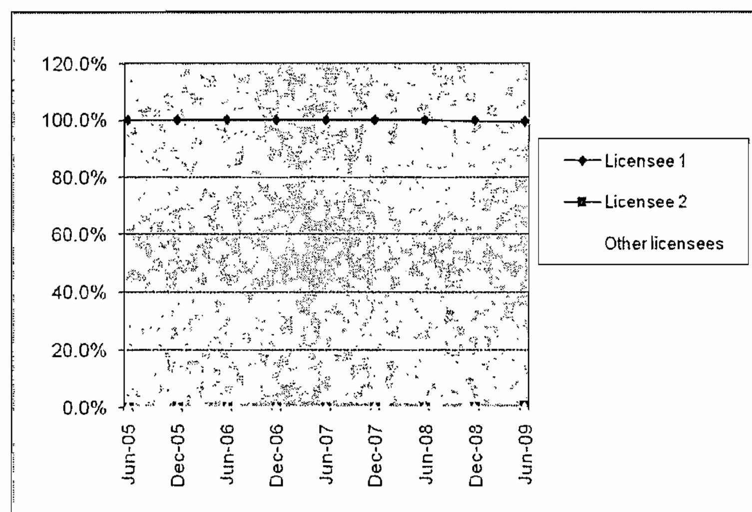
Given that there is, by definition, only one operator in each of the defined markets, the possibility of collusion in the wholesale market is irrelevant for the assessment of competition in the wholesale call termination market.

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

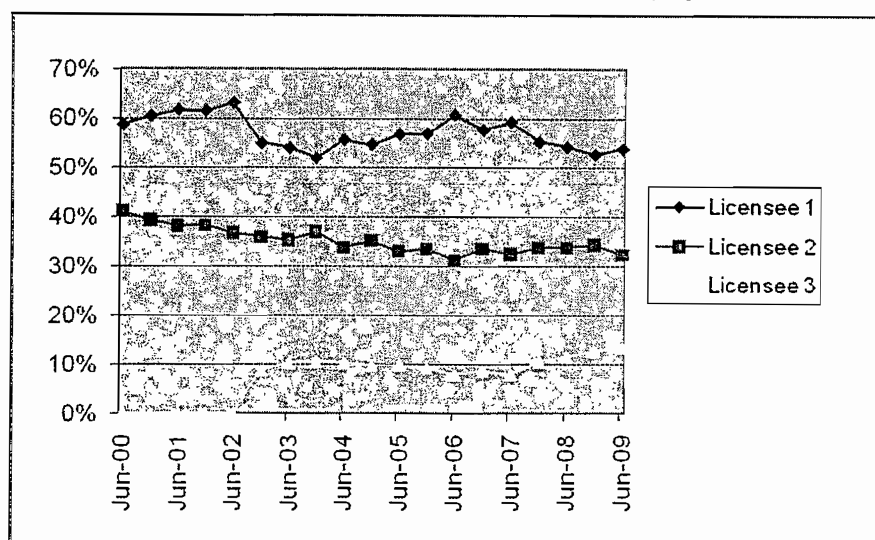
Figure 2.1: Fixed retail market – trend in market share, by total fixed customers



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.

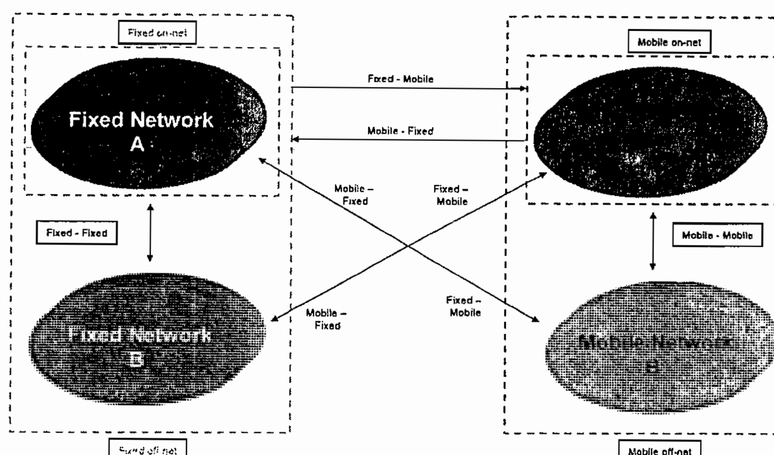
Buying power is a relative concept, referring to the relative strength of the buyer in its negotiations with the prospective seller for a specific product.

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.

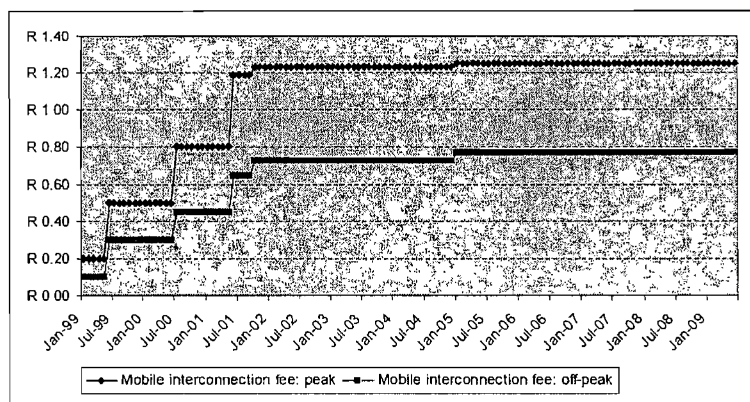
2.3.14.6 CBP Mechanisms: retaliate by raising own termination rate – Larger licensees

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".

- non-discrimination
- accounting separation
- price controls and cost accounting obligations
- timely compliance with licence terms and pro-competitive conditions.

This legal framework informs the proposals contained in this document on the imposition of pro-competitive measures on SMP Licensees in the relevant fixed and mobile markets.

3.3 Potential competition problems

3.3.1 Assessment of the effectiveness of competition and the nature of potential competition problems

The Authority's assessment of the effectiveness of competition in the call termination markets found that all licensees have significant market power on call termination on their own networks. It found further that there are at present no effective supply or demand side substitutes in the call termination market due to the absence of competitive alternatives to wholesale call termination on each licensee's network. In addition, the current method of charging for call termination (Calling Party Pays or CPP) perpetuates the fact that consumer demand for voice call termination is inelastic, further insulating individual licensees from price competition.

In light of these findings, the Authority believes that there are a range of potential detriments that can occur. These competition problems can broadly be divided into:

- Problems relating to inefficient pricing, in that the Authority believes that there are insufficient incentives on licensees to reduce their wholesale call termination charges to an efficient level; and
- Problems relating to non-pricing issues and countervailing buying power (CBP), mainly aimed at delaying market entry and raising a rivals costs.

The two types of potential problems arising for the Authority's SMP findings are discussed in this chapter.

3.3.2 Inefficient pricing problems and effects

The absence of incentives on licensees to lower their call termination charges results in inefficient pricing which can have a negative impact at both the wholesale and retail levels. Inefficient wholesale call termination pricing can adversely affect the:

- ability of new entrants and smaller players to compete with more established firms; and
- level of retail prices for F2F, F2M, M2F and M2M off net rates faced by end users.

These scenarios are described below.

3.3.2.1 Excessive retail charges for off net calls

While licensees have an incentive to keep retail rates low in order to attract and retain subscribers, they do not have a similar incentive with regard to voice calls originating on a competitors' network. Above-cost call termination leads to distortions to the relative prices of fixed and mobile services, such that the relative prices do not reflect underlying resource costs (which is the economic outcome expected in competitive markets). High termination rates can lead to high off-net retail rates given the positive relationship between wholesale and retail charges.

Analysis of operator data submitted to the Authority through the questionnaire identifies substantial differences between the on-net and off-net weighted average retail charge.

3.3.2.2 On-net/off-net price differentials as a potential barrier for new entrants

Above cost wholesale call termination rates are likely to lead to higher off-net retail prices. High off-net retail prices can make it harder for new entrants to compete with more established players. For example, firms with high subscriber bases can potentially gain competitive advantage over less established firms by keeping wholesale call termination rates high and creating large on-net/off-net pricing differentials. The greater the differential between on-net and off-net retail rates, the more attractive to customers are networks that have relatively more on-net calling opportunities (i.e. larger networks).

In particular, a large network's subscribers can be expected to make proportionately more on-net calls than the subscribers of a smaller network. As such, high on-net/off-net price differentials that more established licensees can create and control through charging higher off-net rates can reduce the attractiveness of smaller networks, putting them at a competitive disadvantage. By the same token, this behaviour will result in higher prices for calls made to the smaller network by subscribers of the larger network, which again reduces the attractiveness of the smaller network.

According to economic literature, in the presence of call externalities, larger networks have strong incentives to implement on-net/off-net price differentials due to[54]:

- high termination charges which exceed marginal cost; and
- strategic incentives to reduce the number of calls that subscribers on rival networks receive, reducing the attractiveness of rival networks, and hence their ability to compete.

It has been argued that on-net/off-net pricing strategies can constitute a barrier to entry for new entrants since they have to set off-net rates that compete with the larger licensees on-net rates. In the presence of above cost wholesale termination rates and on-net/off-net retail price differentials, this has the potential to result in margin squeeze for less established firms.

Additionally, research on on-net/off-net differentials has indicated that:

> *"High (i.e. above marginal cost) termination rates can lead to permanent "access deficits" for smaller networks, because even with a "balanced calling pattern[55]" traffic between networks will not be in balance. Call externalities reinforce this effect, since when large networks set high off-net prices, subscribers of a smaller network will also receive relatively few calls;"[56]*

Thus the effects of on-net/off-net differentials could on one hand lead to a margin squeeze, or on the other a reduction in the attractiveness of the smaller network. The latter is the most likely scenario in South Africa.

Smaller service providers such as ECS and ECNS licensees providing VoIP, Neotel and Cell C have the ability to compete strongly on on-net pricing, as they have relatively fewer customers than their more established rivals. This is because they can discount on-net prices with a relatively lower impact on overall profits when compared to equivalent on-net price reductions by more established firms. Based on information submitted to the Authority through the questionnaire, it appears that the smallest of the mobile licensees has set on-net rates that are lower than those of the larger established licensees. This evidence is consistent with the competitive advantage that smaller licensees have in setting discounted on-net retail prices in comparison to larger licensees.

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[54] Harbord and Pagnozzi, (2008), *On-Net/Off-Net Price Discrimination and 'Bill-and-Keep' vs. 'Cost-Based' Regulation of Mobile Termination Rates*, page 5.

[55] Where in the absence of tariff differentials, each subscriber calls every other subscriber with the same probability.

[56] Harbord and Pagnozzi, (2008), *On-Net/Off-Net Price Discrimination and 'Bill-and-Keep' vs. 'Cost-Based' Regulation of Mobile Termination Rates*, January

However, notwithstanding these innate advantages, for the reasons described above smaller firms may struggle to grow their customer base in the presence of above cost call termination rates.

3.3.2.3 Cross subsidisation to own subscribers in retail markets

This involves two separate markets and the ability of an SMP operator to use its SMP in one market to subsidise the cost of a product in another (competitive) market and hence leverage its SMP into that (second) market.

Cross subsidisation does not represent ineffective competition in itself. However, if one price is excessive and the other price is predatory, it can be used by a SMP operator to leverage market power and foreclose a related, potentially competitive market. In the case of call termination, if termination rates are high and a vertically integrated SMP operator is able to charge low or predatory prices in the retail market, cross subsidisation will result in a price squeeze.

It has been argued that high termination rates promote universal service and access in that such rates allow licensees to cross subsidise services to their own subscribers in retail markets. The argument in South Africa has been raised in response to the previous 2007 Consultation and in the Parliamentary hearings with respect to the subsidisation of mobile handsets. It is argued that voice call termination revenue has been historically used to subsidise handsets. It is thus unlikely that returns in the wholesale market are competed away in the retail market.

3.3.3 Non-Pricing Competition Problems and Effects

To a large extent the Interconnection Regulations (Government Gazette No. 33101) required under the ECA address the potential 'non-pricing' competition problems that may arise from the dominant position of all licensees providing call termination. These regulations contain specific provisions addressing matters of transparency and non-discrimination as well as enforce the obligation for all licensees to interconnect (Section 37 of the ECA). As such, the potential non-pricing problems that can arise in light of the Authority SMP findings are partially addressed.

3.3.3.1 Refusal to deal/denial to interconnect

An operator that has SMP in a wholesale market may attempt to leverage its market power by denying access to or refusing to deal with competitors operating downstream that are competing with the incumbent's retail affiliate. In the termination market scenario, this problem can occur in the mobile to mobile as well as in the fixed to fixed or fixed to mobile situations, both when entering into or renegotiating an interconnection agreement.

A refusal to deal restricts the sales of rivals and, through that, can lead to foreclosure in the case of call termination which is a necessary input for the provision of voice services off net. Given that foreclosure is likely to substantially lessen competition, it is likely to be detrimental to overall welfare.

The ECA mandates access for interconnection thus eliminating the problem of refusal to deal.

3.3.3.2 Raising Rivals' Costs: Delaying tactics

Although access is mandated by the ECA, delaying interconnection which is a necessary input can have the effect of delaying the entry of a new entrant. The longer the delay, the longer the operator can protect its monopoly rents in the retail market. Additionally, a delay may provide an opportunity for the interconnection provider or its affiliate to build up a first mover advantage which in turn has the potential to increase the new entrant's costs relative to the first mover (interconnection provider) and may also restrict its sales.

Delaying tactics may come in various forms, such as lengthy negotiations or fabricated technical problems or requirements. Timeframes stipulated in the Authority's Interconnection Regulations curb this potential, but do not completely eliminate it.

3.3.3.3 Raising Rivals' Costs: Undue requirements

Terms and conditions in interconnection agreements that require a particular behaviour of the interconnection seeker, which is unnecessary for the provision of the termination services, can have the effect of raising rivals' costs or restricting rivals' sales. Such undue requirements may include:

- The stipulation of a particular technology
- Bank guarantee and price floor requirements
- Information requirements beyond what is strictly necessary.

Remedies imposed by the Authority must seek to prevent the above problems from arising.

3.3.3.4 Raising Rivals' Costs: Tying and Bundling

Tying refers to the practice of only allowing the sale of one product if a related product is also purchased. Bundling is when two (or more) products are sold in fixed proportions (typically to end-users in the downstream retail market).

Bundling the sale of termination services with other services or tying it to the sale of other products or services *which are not needed* for wholesale call termination can raise the costs to an interconnection seeker.

The Interconnection and Facilities Leasing regulations aim to limit this behaviour by requiring interconnection and facilities leasing providers to sufficiently unbundle any charges so that a seeker does not have to pay for anything it does not require.

3.3.4 Addressing competition concerns

The Authority has considered the above potential competition problems that could arise as a result of SMP in the wholesale call termination market in South Africa. The potential effects of such problems include:

- negative welfare effects as a result of inefficient pricing,
- first mover advantage,
- raising rivals' costs,
- margin squeeze, and
- foreclosure.

The Authority has decided that *ex ante regulation* is needed to prevent these problems. The imposition of pro-competitive remedies in a targeted manner to address competition problems and their effects are thus warranted and necessary.

3.4 Imposing pro-competitive measures

3.4.1 Objective of imposing pro-competitive measures

The imposition of ex ante obligations does not depend on the abuse of a dominant position. It seeks to prevent such abuse. Therefore the Authority proposes the imposition of non-pricing remedies to ensure access, transparency and non-discrimination to enable all licensees to compete. In addition, the Authority seeks to introduce the pro-competitive remedies to remove the competitive distortions that occur as a result of allocatively inefficient pricing as discussed above. The Authority seeks to ensure that prices and margins are reduced to a level that covers the cost of efficiently incurred capital, as would be the case in a competitive market.

The remedies are furthermore aimed at providing certainty to the market with respect to the treatment of wholesale call termination charges and terms and conditions in the period under review. This legal and policy certainty is critical in the interests of investors and consumers alike.

3.4.1.1 Previous obligations

Under the previous legislative framework (i.e. the Telecommunications Act No. 103 of 1996, as amended) the following obligations were placed on MTN, Vodacom and Telkom:

- Submission of regulatory accounting under the Chart of Accounts and Cost Allocation Manual("COA/CAM") regulations; and
- Price control obligations in the form of price cap regulation.

These obligations lapsed with the coming into force of the ECA.

Furthermore, in terms of Sections 37 - 40 of the ECA and the Interconnection Regulations, the following obligations are in place and apply to all licensees:

- Obligation to interconnect, which is an access obligation;
- Transparency obligations; and
- Non-discrimination obligations with respect to terms and conditions relating to service and quality.

In addition, the Authority may expand upon these obligations or impose additional obligations further to a Market Review in terms of Chapter 10 of the ECA.

3.4.2 Principles to be applied in deciding upon remedies

Regulatory action is warranted when SMP is found in a properly defined market. In terms of Section 67(4)(c), the Authority is required to select from the pro-competitive remedies set out in Section 67 (7), amongst others. The Authority is furthermore required to promote competition within the ICT sector (Section 2(f)) and refrain from undue interference in the commercial activities of licensees while taking into account the electronic communications needs of the public (Section 2(y); and promote stability in the ICT sector (Section 2(z)).

As such, the specific obligations imposed must be based on the nature of the problem identified, and must be proportionate and justified. Proportionality refers to the Authority undertaking the minimum intervention required, to achieve the objective set out.[57] This approach is central to the proper application of ex ante obligations and will ensure that regulation, when it is applied, is specifically targeted at addressing market failure in the call termination market.

The Authority believes that it would be disproportionate to assume that identical remedies should be applied to all licensees designated with SMP in respect of a given market. The Authority believes that an approach where the same remedies are applied across the board will have damaging consequences for infrastructure competition, innovation and the interests of consumers, in the medium to longer term. It would furthermore place an undue regulatory burden on small players, i.e. those that are unlikely to harm the market, and affect their ability to compete.

In addition to being proportionate, a remedy should be justified and related to solving a potential competition problem identified in the market. As such, each remedy proposed by the Authority seeks to address one of the problems of cross subsidization, excessive pricing and inefficiency; or non-pricing problems of refusal to deal, delay, tying and bundling, as discussed in Section 3.3 and prevent its effects. Finally, the Authority recognises that all the remedies it proposes must be analysed in a forward looking manner, and has included this in its evaluation.

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[57] ERG (2006), *Revised ERG Common Position on the approach to appropriate remedies in the ECNS framework*, p. 62. See http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

3.4.3 Pro-Competitive measures for SMP

The provisions of Section 67(4) and Section 67(7) of the ECA and the principles for the imposition of remedies set out above, namely that remedies should be proportionate, justifiable, flexible and forward looking guide the Authority. As a guiding principle, the Authority will impose the minimum remedy necessary to address any competition problem.

3.4.3.1 Decision on imposition of structural remedies

Regulators have considered requiring structural as opposed to behavioural changes to address the competition problems arising from the monopoly over call termination on licensees' networks. Two main structural changes have been considered by other regulators and by the Authority:

- a requirement to move from a CPP to a Receiving Party Pays (RPP) billing arrangement[58]; and
- technical intervention to enable more than one network to terminate calls to a given network.[59]

The Authority believes that as a first step ex ante regulation should be used to impose behavioural remedies which will serve to enhance efficient competition. A structural remedy in the form of a required move to RPP would not be the minimum remedy necessary to address any competition problem, nor would it be in the best interests of South African consumers who are accustomed to the prevailing CPP charging structure. It is also not proven that the net benefits of such a change will outweigh the costs.

With respect to technical intervention, the Authority is not aware of any practical form of regulatory intervention to encourage the licensees to implement technological solutions that might either lead to supply-side substitution or increased competitive pressure.

In light of the above, the Authority intends to impose behavioural remedies as set out in the remainder of this document.

3.4.3.2 Decision on imposition of behavioural remedies

In an approach which is consistent with that taken in other African countries such as Namibia, Uganda, Tanzania and Nigeria, and in the EU, the Authority will impose behavioural remedies to address the potential competition problems arising from all licensees' SMP positions in call termination markets.

The Authority believes that the behavioural remedies that are most appropriate to apply in this market are:

- Access obligation;
- Transparency obligation, and specifically obligation to publish a Reference Interconnection Offer (RIO);
- Non-discrimination obligation, including non-discrimination on pricing; and
- Wholesale price control obligation, where termination rates must be fair and reasonable, but specific cost-oriented rates are set for established licensees.

Supporting obligations will have to be imposed on established licensees to ensure that the cost-orientation obligation is met. These supporting obligations are:

- Accounting separation obligations; and
- Cost accounting obligations.

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[58] Historically, RPP for mobile calls in the US was adopted as a complement to flat-rate charges for local fixed calls as the caller cannot identify whether the number being called is a mobile or fixed-line (Marcus, 2004).

[59] Ofcom (2007), Mobile Call Termination, Statement, p. 86. See http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/statement.pdf

Each proposed obligation is discussed in turn below.

3.4.3.2.1 Access obligations

Economic theory suggests that in the absence of an access obligation:

> *"a vertically integrated operator with market power on the wholesale market will... deny access to its wholesale product whenever retail entry would – in the short or in the long run – erode its market power on the wholesale market. By denying access, the dominant undertaking can preserve its market power and charge an excessive price on the retail market. In this way it can leverage its market power from the wholesale market into the potentially competitive retail market. The welfare effects of such behaviour are clearly negative.[60]"*

In South Africa, the requirement to provide access is one that applies to all parties providing interconnection as a general obligation in terms of Section 37(1) of the ECA. All licensees must meet reasonable requests for interconnection (i.e. those that are technically and financially feasible and which promotes the efficient use electronic communications networks and services) and must make information available to interconnection seekers with respect to terms and conditions, including prices. Section 37 of the ECA and the Interconnection Regulations made in terms of that section impose a broad range of obligations for access in the wholesale call termination markets, including the obligation to:

- give access to specific network elements or facilities;
- negotiate in good faith;
- maintain supply;
- specify technical requirements;
- provide any-to-any interconnection and interoperability requirements;
- abide by fairness conditions;
- abide by reasonableness conditions (technical and financial feasibility); and
- meet designated timelines.

There is evidence from a number of new ECNS and ECS licensees in South Africa that despite the access obligation in the ECA, established SMP licensees have created unnecessarily onerous or unreasonable conditions in negotiating interconnection agreements and have thus managed to delay considerably the reaching of agreement on the terms of interconnection.

Use of access obligations is one of the ways to address the impact of demand side network effects that tend to give larger networks competitive advantages over smaller ones. Access obligations are covered in terms of the Interconnection Regulations. However, the Authority believes it is appropriate to reinforce these obligations through the imposition of pro-competitive remedies. Access obligations are not sufficient on their own to address the competition problems identified in Section 3.3 above which affect the fixed and mobile call termination markets.

3.4.3.2.1.1 Impact of an access obligation

Section 38(5) of the ECA provides that the Authority may exempt licensees from the obligation to interconnect as set out in Section 37(1) of the ECA further to a finding in terms of Chapter 10.[61] In light of the Authority's findings that all licensees have SMP over call termination on their own network, this exemption will not be used.

No additional monitoring will be required by the Authority with respect to this obligation to interconnect, save for the adjudication of disputes regarding denial of access, or its pricing.

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[60] ERG (2006), *Revised ERG Common Position on the approach to appropriate remedies in the ECNS framework*, p. 81. See http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf
[61] See section 37(5) of ECA

3.4.3.2.1.2 Alignment with principles

The Authority is of the view that in light of the information obtained through the questionnaire and anecdotal evidence presented to the Authority, the timeframes for provision of access and the finalisation of agreements remain challenging for new entrants.

3.4.3.2.2 Non-discrimination obligations

A non-discrimination obligation as provided for in Section 67(7)(c) of the ECA forces an SMP Operator to apply equivalent conditions in equivalent circumstances to rivals that provide equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries, partners or affiliates. A non-discrimination obligation requires that third party access seekers are treated no less favourably than the licensees' internal divisions.

With respect to interconnection, Section 37(6) of the ECA provides that:

> *The interconnection agreement....must, unless otherwise requested by the party seeking interconnection, be non-discriminatory as among comparable types of interconnection and not be of a lower technical standard and quality than the technical standard or quality provided by such licensee to itself or an affiliate"*

The non-discrimination obligations arising from this market review process provide further detail and additional obligations for Licensees with SMP, and they also include non-discrimination with regard to pricing which is not addressed in terms of the existing framework.

The fact that termination rates are not set at the efficient level gives rise to discrimination concerns. SMP Licensees can discriminate traffic in a manner that leads to a lack of effective competition on the basis of the origin of such traffic. For example SMP Licensees can discriminate:

- against traffic originating on other networks;
- on traffic of own (vertically integrated) network versus traffic originating on other networks;
- on-net calls;
- between fixed and mobile calls

While the Authority recognises the need to prohibit discrimination, it notes that pro-competitive practices such as the provision of "bulk discounts" based on volume are not prohibited in terms of this non-discrimination obligation. Such volume discounts must however be objectively applied and available equally to all interconnection seekers. Equivalent volume discounts must be provided to equivalent licensees.

3.4.3.2.2.1 Impact of a non-discrimination obligation

The Authority recognises the potential adverse impacts of imposing a non-discrimination obligation. The existence of economies of scale in some markets means that some SMP Licensees will have lower unit costs than others. Imposing a non-discrimination obligation to force an SMP Operator to provide an input to a smaller rival at the same unit cost could lead to unintended impacts (such as inefficient entry into the market). Thus, differences in terms and conditions, even where transactions are not necessarily exactly the same, should be objectively justified to prohibit discrimination. The Authority will monitor this, and the potential for tacit collusion arising from this obligation.

The Authority notes that the imposition of minimum volume requirements, price floors and bank guarantee requirements have been imposed during interconnect negotiations. If unreasonable, these practices can

be seen as refusal to deal requirements and requirements that raise rivals costs. The imposition of a non-discrimination requirement addresses this competition problem.

The imposition of a non-discrimination obligation will be combined with other remedies (i.e. transparency and accounting separation) in order to address the effects of competition problems and to ensure that competition is not distorted. Transparency is a natural complement to this obligation as the ability to identify behaviour that could be detrimental through the use of discriminatory practices depends on the ability to detect such behaviour. In addition accounting separation is a complementary obligation to prevent price discrimination and is discussed later in this document.

3.4.3.2.2.2 Alignment with principles

The imposition of a Non-Discrimination obligation on all licensees with SMP as set out above is proportionate and justifiable. A non-discrimination obligation is neither onerous in that it increases the regulatory burden on licensees, nor is it expensive to implement and thus can be applied proportionally on all licensees. Accounting separation is a complementary obligation which assists to identify instances of discrimination, which the Authority feels should only be applied to established SMP licensees given that it is a burdensome obligation. This is discussed in greater detail in Section 3.4.3.2.6.

3.4.3.2.3 Transparency obligations

Imposing an *ex ante* obligation of transparency as provided for in terms of Section 67(7) (d) of the ECA can be used in relation to addressing potential problems in the wholesale call termination market. Section 37 of the ECA already provides that amongst other transparency related obligations, all parties to an interconnection agreement must:

- make public interconnection agreements, and any updates or amendments, and file them with the Authority; and
- make public interconnection prices and charges, and any changes thereto.

The potential benefits of the transparency obligations as set out above are that they will make all charges and changes to charges clear. They will act as a constraint to anti-competitive behaviour that might otherwise emerge such as delaying tactics, refusal to deal and discrimination.

3.4.3.2.3.1 Impact of transparency obligation

A transparency obligation, which is largely dealt with existing regulation and law, will not on its own be sufficient to address the effects of competition problems, including that relating to the cost of termination. It is therefore imposed in combination with other remedies.

Transparency of charges beyond the publication of such charges in interconnection agreements is dealt with in greater detail in Section 4.4.3.2.6 which deals with accounting separation obligations.

3.4.3.2.3.2 Alignment with principles

Transparency obligations are not overly burdensome since all licensees must prepare and publish interconnection agreements in any event, and transparency is a principle of the Interconnection Regulations; thus this obligation can be applied to all SMP licensees equally.

3.4.3.2.4 Publication obligation (Reference Interconnection Offer)

It is necessary to avoid delaying tactics and disputes and to ensure that interconnection seekers' costs are not unduly raised through the behaviour of established SMP licensees. As such, further to the

transparency requirements set out in Section 37 and the Interconnection Regulations, which are applicable to *all* licensees, the Authority requires that each established SMP Operator must publish a standard Reference Interconnection Offer (RIO) in terms of section 67(7)(e). At a minimum, a licensee's RIO must include:

- A description of the relevant electronic communications facilities and services on offer; and
- A description of the associated terms and conditions, including prices.

The Authority requires that each operator publishes its RIO on its website as well as lodge a copy with the Authority, which may be published on ICASA's website.

3.4.3.2.4.1 Impact of publication obligation

The requirement to prepare and publish a RIO will address the competition problems of delay, discrimination, tying and bundling. It will reduce complaints and enable licensees to respond to changes in pricing promptly given that standard terms and conditions are known.

It will furthermore assist the Authority to monitor the non-discrimination obligation. The RIO obligation will support the current provisions of the Interconnection Regulations dealing with transparency.[62]

The information set out in the RIO should ensure that[63]:

- new entrants have sufficient information about the SMP Operator's network to make informed business decisions, for example to plan its interconnection requirements;
- new entrants are presented with a standard offer against which they may negotiate and do not have to start negotiations from scratch; and
- the terms and conditions offered to different interconnecting licensees are non-discriminatory.

A RIO obligation, which is imposed solely on established SMP licensees providing call termination services will reduce the time needed to negotiate and finalise interconnection agreements from the currently regulated 45 days, and will ensure that similar terms and conditions are offered to all interconnection seekers. It will make all of the established SMP licensees' terms and conditions transparent, and importantly such terms and conditions will have to be approved by the Authority before the Reference Offer is made available to the public.

The detail of the RIO remedy is set out in the Call Termination regulations.

3.4.3.2.4.2 Alignment with principles

The Authority notes that apart from the RIO Obligation, all other transparency obligations are required to be met by interconnection seekers and providers in terms of the Interconnection Regulations. The Authority is thus of the view that the RIO obligation proposed herein is appropriate and proportionate and that it should be applied to all established SMP licensees.

3.4.3.2.5 Price Control obligation

The Authority's analysis has found that inefficient pricing is a key competition problem that this market review process and the imposition of remedies in terms thereof seeks to address. There is a lack of effective constraints on licensees to ensure that their call termination charges are set at an efficient charge level. The consequences of this could be excessive pricing and margin squeeze to the detriment of consumers, amongst others (see Section 3.3.2).

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[62] Section 11 (Transparency) and Section 12 (Interconnection Information)

[63] Objectives of the Gambian Public Utilities Regulatory Authority's Reference Interconnection Offer Guidelines

In Section 67(7)(h) the ECA provides that the Authority may impose "such price controls, including requirements relating to the provision of wholesale and retail prices." Price Control obligations can range from light (e.g. an obligation that prices are "fair and reasonable") to heavy (e.g. an obligation that prices are cost oriented, or even that they are 'cost-based'[64]).

The Authority considers that the light touch approach applied in South Africa over the last decade has not constrained wholesale call termination prices to efficient levels and that a different approach is now required. The Authority intends to introduce a wholesale price control regime that encourages "fair and reasonable" pricing by all licensees and directly targets established SMP licensees' pricing policies and practices by ensuring cost-orientation of wholesale call termination prices. The Authority believes that, given the inability of other regulation to have the effect of bringing termination rates to efficient levels, the imposition of price control obligations is proportionate and justified.

The Authority is not intending to build a cost model as part of the current market review, although the previous decisions of the Authority are noted. In the absence of a specific costing model, the Authority intends to apply an alternative approach to gain insight on the costs of wholesale call termination rates in South Africa. This approach consists of a detailed review of the regulatory financial reports ("RFR") prepared by MTN, Telkom and Vodacom under the COA/CAM regulatory obligations and prepared based on FAC and CCA approaches. This analysis is complemented by international benchmarking of LRIC based wholesale call termination rates in other relevant jurisdictions.

A discussion on the design of the remedy is provided in Appendix A (Price Control Remedy Design). Establshed licensees will be required to comply with wholesale price controls as set out in the Call Termination Regulations.

3.4.3.2.5.1 Impact of Price on regulation of 'marginal subscribers ("Marginal Subscribers Argument")

It has been argued, particularly with respect to mobile services, that if price control is imposed and termination rates are reduced to the level of efficient costs, that a portion of low-usage pre-paid customers may no longer be profitable thus affecting universal service and access in South Africa. According to Vodacom:

> *Because of the demographics of the subscriber base and the policy objectives to drive coverage, penetration, access and affordability, the industry currently uses both retail and wholesale income to recover the cost of the subscriber over time. In other words the nature of our market allows licensees to retain marginal subscribers on the network as the cost of doing so is recouped through retail on-net and wholesale interconnection charges. Based on Vodacom subscriber data, over 35% of prepaid subscribers do not make a sufficient number of calls for direct revenues to offset the costs of retaining them on the network. They are retained on the basis of indirect revenue generated from incoming calls and thereby enjoy access and services they could not otherwise afford.*[65]

It is further argued both in South Africa and in other jurisdictions that reductions in mobile call termination rates will make it difficult to maintain current pre-paid offers and it may be necessary to cut handset subsidies by a certain amount, and/or introduce certain minimum commitment requirements in retail pre-paid packages.

The Authority considers that this argument ignores the dynamic nature of competition and customer behaviour in a network industry. It implies that licensees whose customer base consists largely of low-usage pre-paid subscribers are subsidised by other networks, including fixed networks, and finally by the subscribers of those networks. Given that this may result in higher prices for certain end-users and raise

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[64] Cost-based is generally considered a tougher regulatory requirement on an operator compared to a requirement for charges to be 'cost-orientated'.

[65] Comments by Vodacom (Pty) Ltd in response to ICASA's Section 4B Inquiry into Wholesale Call Termination Market Definition in Notice 78 of 2007 (GG NO. 29568 published on 29 January 2007), page 1.

possible allocative-efficiency concerns, setting mobile call termination rates above the level of efficient costs in order to serve very low-usage customers does not seem to be justified due to the various market distortions it is likely to create.

The Authority notes that above cost mobile call termination can be justified in the presence of 'network externalities' can be demonstrated to the extent that such a cross-subsidisation would increase overall consumer welfare (fixed and mobile). This is discussed in more detail below.

3.4.3.2.5.2 Impact of Network externalities on the "Marginal Subscriber Argument"

Network effects provide incentives for network licensees to have more subscribers on their network. Revenue-generating customers benefit from being able to call more users and are more likely to stay on the network and make calls when those customers are available. The incentive for licensees to create communities of interest such as Cell C's Friends and Family package, suggests network licensees would seek to retain their 'marginal' pre-paid customers, even if their termination rates were regulated down to efficiently incurred costs. Thus, it may be expected that network licensees would seek to retain their pre-paid customers on their networks even if they were no longer subsidised by above-cost termination rates paid by customers of other networks.

The European Commission argues that "once licensees attract subscribers to their networks they will still have incentives to retain and grow that customer base so as to create communities of interest for their existing subscribers. Licensees may therefore be expected to internalise this externality in the absence of a mark-up above cost[66]."

Alternatively, where such subsidies continue to be applied they may increasingly be used to fund switches from competing networks or to upgrade customers to new services (for example 3G networks), rather than to attract marginal subscribers. This may be inferred from the very high customer churn rates (disconnections) observed in the South African market.

Table 3.1: 'Churn' rates in the South African mobile market

	Pre-pay customers	Contract customers
Licensee 1	49 %	7 %
Licensee 2	69 %	15 %
Licensee 3	40 %	10 %

Note: Churn percentage represents annualised percentage from the first 6 months of 2009
Source: Analysis of operator reported data.

This argument that marginal subscribers will be adversely impacted by regulation to lower call termination rates assumes that licensees can accurately target subsidies obtained from call termination revenues at marginal subscribers.

However, according to Albon and York (2008[67]) who reviewed this issue in Australia, handset subsidies in the retail mobile market do not tend to be primarily directed at attracting new mobile subscriptions. Rather, a substantial proportion of the handset subsidies are directed at enticing existing customers to particular networks and to migrating customers to higher value services (such as 3G). As neither of these activities is directly aimed at retaining marginal subscribers for voice services, the authors argued that this

[66] Commission Staff Working Document *accompanying the* Commission Recommendation On The Regulatory Treatment Of Fixed And Mobile Termination Rates in the EU: Implications for Industry, Competition and Consumers, page 40.
[67] Rob Albon and Richard York (2008), "Should mobile subscription be subsidised in mature markets," Telecommunications Policy 32, 294-306.

would not appear to provide sufficient justification for recovering these subsidies via the regulated voice call termination charge.

In addition the European Commission recently stated the following:

> *....in its 2002/2003 inquiry into the UK mobile market, the Competition Commission noted that some of the customers benefiting from replacement handsets may need no inducement to be a mobile customer as they have already made the commitment to join a network and are reluctant to forgo the benefits of mobile ownership. For example, it noted information from O2 pointing out that handset upgrades at less than cost are only made available to post-pay customers who have already been subscribers for a certain period of time. It was further noted that handset subsidies are more likely to be available to existing customers if they are high spenders. In its 2009 assessment of the UK mobile market, and specifically in disallowing a network externality surcharge which had been applied by Ofcom, the UK Competition Commission further noted this risk of 'leakage' whereby the surcharge is not fully passed through to the marginal customers for whom it is intended. Rather, it may be used to subsidise subscription for the more profitable, non-marginal consumers potentially leading to unnecessary upgrading or switching of handsets and/or excessive customer churn.* [68]

3.4.3.2.5.3 Impact of Penetration on the Marginal Subscriber Argument

MTN has argued in the past that:

> *...by ignoring the relationship between wholesale and retail in its analysis the Authority is ignoring a key component of the South African market penetration success, and puts at the risk penetration in the second economy*[69].

Mobile penetration in South Africa is high with operator data for June 2009 indicating that there were a total of 53 million customer connections in an estimated population of 44 million. The size of the prepaid market in South Africa which is over 90 percent of the total market, and the fact that low-usage subscribers are most likely to be prepaid makes the analysis in this market different from in Europe and United States. It is more relevant to compare outcomes in other emerging markets, particularly in Africa.

Table 3.2: Proportion of total South African mobile market that makes low (<5 per cent) or no outbound calls

	Proportion of customers with low outbound calling	Proportion of customers with no outbound calling
Contract customers	17.1 %	10.9 %
Prepay customers	17.0 %	12.7 %

Source: Analysis of operator data as of June 2009.

Note: Low outbound calling is classified as less than 5 per cent of the average outbound calling rate

Allowing mobile licensees to charge other networks, including fixed networks, termination rates above an efficient level of cost does not appear justified on the basis of perceived consumer benefits deriving from network externalities at this stage of market development. In fact, mobile licensees are more likely to concentrate their offers, such as handset discounts, on increasing churn by enticing existing customers away from their competitors rather than necessarily increasing the overall number of mobile subscriptions.

[68] European Commission (2009) *Commission Staff Working Document accompanying the Commission Recommendation On The Regulatory Treatment Of Fixed And Mobile Termination Rates in the EU: Implications for Industry, Competition and Consumers,* p. 41.

[69] MTN Submission on ICASA Wholesale Call termination Inquiry, 2007

Thus, in summary, given current levels of market penetration in South Africa, incentives to create network effects, and the fact that the regulated termination rates would continue to cover the efficiently incurred cost of this service, it is not clear why licensees would not be capable of internalising any such access externalities going forward or why mobile penetration levels would fall as a result. As such, the Authority believes that imposing price controls will not harm the market, but would actually address the problems alluded to in Section 3.3.2.

In terms of the fixed sector, penetration in South Africa is relatively low at approximately 10 per cent. The fixed retail market is also currently dominated by Telkom with over 99 per cent share.[70] Such extreme inequality in retail market share is more likely to allow market power to be wielded over the bottleneck termination service by Telkom.

The arguments made above for the mobile sector regarding network effects and the impacts on marginal subscribers of price controls are equally applicable when considered in relation to the fixed sector. There is no evidence that high fixed termination charges have been used to encourage the adoption of fixed services by marginal subscribers as the number of fixed lines in South Africa is relatively static or falling. Hence the imposition of a wholesale price obligation on the established fixed SMP operator is equally justified in order to achieve efficient wholesale pricing for fixed termination as it is for mobile termination.

3.4.3.2.5.4 Impact of wholesale price control obligation on retail prices

"Pass-through" refers to the passing on of wholesale call termination reductions to retail calls. On one hand it is argued that regulation of wholesale rates should be sufficient to enable competition in the retail market and thus reduce prices (e.g. Denmark[71]); however, it is noted that if the reduction in wholesale rates is greater than the reduction of retail rates this leads to a high retention rate, but relatively little direct impact on consumer prices.

In Europe, although the fixed to mobile termination rates have decreased significantly over the period 2004 to 2008, fixed to mobile retail call rates have not declined by the same amount in most countries. In fact, the average retention margins exceed 40 percent.[72]

This review focuses on the wholesale call termination markets defined by the Authority. The price control obligation seeks to address potential competition problems of excessive pricing, margin squeeze and inefficiency. The Authority has not reviewed the retail fixed or retail mobile market to assess the levels of competitiveness of such markets. However, the retail markets have a small number of networks, with significant entry barriers (such as high sunk costs and, in the case of the mobile market, spectrum scarcity).

The Authority intends to impose wholesale call termination market regulations, and as such will not at this stage, without having reviewed the retail market, impose regulation to require a set level of pass-through. The pass-through of competitive benefits to end consumers is however critical. The Authority would thus urge licensees to ensure that a significant portion of reductions in the fixed and mobile termination rates are passed through to consumers and encourages them to consider this in developing retail pricing strategies.

The Authority may subsequently review the fixed and mobile retail markets and, where ineffective competition is found, may impose retail remedies, such as price control and regulatory accounting, in order to ensure that retail rates are reduced.

[70] Analysis of operator responses to the industry data questionnaire.
[71] Analysys Mason, Report for the Australian Competition and Consumer Commission: Regulatory Treatment of Fixed-to Mobile Pass Through, page 7
[72] Analysys Mason, Report for the Australian Competition and Consumer Commission: Regulatory Treatment of Fixed-to Mobile Pass Through, page 31

3.4.3.2.5.5 Alignment with principles

The Authority recognises that the obligation to provide call termination at a cost-oriented rate is an intrusive measure as permitted by the ECA which places significant burden both on the Authority and the SMP licensees that must comply with the obligation.

The Authority believes it would be unreasonable and disproportionate to impose identical ex-ante price regulation obligations on all fixed and mobile SMP licensees. Any price regulation imposed on licensees must reflect their real economic costs and should permit a fair return on investment. The Authority will therefore have regard to the fact that the unit cost base of licensees with a smaller overall market share - in terms of volume or customer base - is inevitably higher than that of larger ones.

In addition, in assessing the risks associated with regulatory intervention of this nature, the Authority notes the fact that many smaller mobile licensees have yet to generate returns covering their costs of capital employed. The imposition of identical obligations on all licensees with SMP may therefore in effect have an entirely different impact on individual licensees.[73]

In addition to imposing a burden on licensees, cost-orientation places requirement on the Authority. It requires the Authority to establish the "efficient rate" and given the potential for SMP Licensees to shift anti-competitive behaviour from pricing to non-pricing behaviour (like discrimination on quality or product characteristics) as a result of the obligation, it requires that the Authority actively monitor the market. Further, in light of this obligation, the Authority has to monitor compliance on an on-going basis.

3.4.3.2.6 Accounting Separation obligations and Cost Accounting Method obligations

3.4.3.2.6.1 Accounting Separation

The accounting separation obligation set out in Section 67(7)(f) of the ECA and the cost accounting obligation discussed in Section 67(7)(g) are specifically useful to support the Authority in monitoring compliance with and implementing price control obligations. These two obligations also support the above-mentioned obligations of transparency and non-discrimination.

Accounting separation monitored through the submission of Regulatory Financial Reports ("RFR") supports the non-discrimination requirement discussed in Section 3.3.5 particularly for established, vertically integrated licensees. Analysis of RFR enables the Authority to have sight of an operator's wholesale prices and its internal transfer prices. Accounting separation is an important regulatory tool in that it may identify cases in which a vertically integrated company engages in unfair cross-subsidization. It can also act as a constraint on other anti-competitive behaviour as discussed in Section 3 such as margin squeeze.

3.4.3.2.6.2 Cost Accounting Methodology

Section 67(7)(g) allows the Authority to propose the accounting method to be used to maintain the separation of accounts required in terms of Section 67(7)(f). Common methodologies include:

- Fully Allocated Costing (FAC) based on either Historic Cost Accounting (HCA) or Current Cost Accounting (CCA); and
- Long Run Incremental Costing (LRIC).

A cost accounting methodology was determined in terms of previous interconnection regulations which provided for LRIC and FAC by "major licensees" providing "essential services.[74]" Furthermore the

[73] As argued by Orange Group in response to ERG's consultation on regulatory remedies
[74] Section 11 of the Interconnection Guidelines (Notice 1259 of 2000) provides that "Major Licensees of Essential Services must provide those Essential Services for interconnection to any requesting Public Operator at the long run incremental cost (LRIC) of those Essential Services." Further "Major Licensees may charge Service Providers no more than the fully allocated costs of the Major Operator for establishing a POI."

Supplementary Interconnection Guidelines provided for a transition from FAC to LRIC based costing over 2 years, but this period lapsed in 2004.

There are a number of approaches to estimating the efficient cost of a call termination service. However, international best practice suggests the most economically efficient method to use is one that calculates costs for termination services on the basis of forward-looking, long-run incremental costs (LRIC). This approach promotes efficient production and consumption, and minimises potential competitive distortions.

This method estimates prices that are consistent with those that would emerge in an effectively competitive market. In such a market, licensees would compete on the basis of current or forward-looking costs based on efficient technologies available in the timeframe considered.

Detailed cost accounting requirements including the cost standard, cost model, depreciation method, and cost differences are to be decided by the Authority and set out in regulations issued in terms of Section 67(7)(f) of the ECA setting out the manner in which the regulatory accounts are to be maintained and the format for regulatory accounts to be submitted.

3.4.3.2.6.3 Impact of accounting separation and cost accounting obligations

The obligations of Cost Accounting and Accounting Separation are intrusive and may be onerous on smaller new entrants. The Authority considers it proportionate that Cost Accounting and Accounting Separation obligations will apply only to established SMP licensees to support their price control obligations. It is intended that the Regulatory Financial Reports and information collected by the Authority under these obligations will inform decisions on price regulation and the imposition of wholesale price controls in the future. The Authority notes that established SMP licensees in South Africa except Cell C have previously had an accounting separation obligation imposed on them in the form of submission of RFRs under the COA/CAM regulations. As such, compliance with this obligation can be reasonably expected.

The Authority believes that it is proportionate and justified to apply this obligation to the established SMP Licensees which are Telkom, Vodacom, MTN and Cell C.

The detail of the implementation of accounting separation remedy will be set out in Accounting Separation and Cost Accounting to be issued by the Authority in terms of Section 67(7)(f) and (g) of the ECA. These regulations will set out the format for regulatory accounts to be submitted. The Authority will, in implementing the regulations, respect confidentiality and maintain tight control over information submitted.

3.4.3.2.6.4 Alignment with principles

The Authority notes that accounting separation and cost accounting are onerous and burdensome obligations that may be costly to implement given the level of detailed financial information that must be provided. The Authority therefore proposes that they are only applied to more established SMP licensees who have a greater potential to harm the market, namely Vodacom, MTN, Cell C and Telkom.

In order to ensure that the exemption of other (smaller) licensees found to have SMP in the relevant call termination market from submitting RFRs does not cause market distortions, the Authority is applying non-discrimination and cost-orientation remedies to all licensees. This ensures that transparency is achieved to the greatest extent possible with the least burden for all licensees.

3.5 Conclusion on pro-competitive measures

3.5.1 Promoting competition

The Authority has considered the range of pro-competitive remedies that form part of its regulatory toolkit and, for the reasons summarised in previous sections, the Authority has decided that the remedies will be applied only where they address a specific competition problem. Additionally there will be a proportionate application of the proposed remedies – general remedies will apply to all SMP Licensees, and additional obligations will apply only to established SMP licensees. This approach will be applied in a manner that is justified, flexible and forward looking.

3.5.1.1 General obligations

The Authority proposes the following pro-competitive terms and conditions be applied to all SMP Licensees:

- Obligation to provide access in terms of Section 67(7)(a);
- Non-discrimination obligation in terms of Section 67(7)(c);
- Transparency obligation in terms of Section 67(7)(d) and (e); and
- Wholesale price control obligation in terms of Section 67(7)(h), where termination rates must be fair and reasonable, and specific cost-oriented rates are set for established SMP licensees.

The Authority is of the view that an access obligation, as is already provided for in terms of the ECA when a reasonable request is made, ensures interoperability. This obligation alone will not address all the competition problems that have been identified. Coupled with transparency and non-discrimination obligations the access obligation can have a positive impact on promoting competition and addressing the non-pricing competition problems raised in Section 3.3.

It would not be proportionate for the price control obligation to be applied symmetrically to all licensees. As such, although the same remedy will be applied, two sets of obligations will be applied in terms of this remedy: 'fair and reasonable' pricing, and cost-orientation. In the interest of proportionality, the obligation to comply with specific cost oriented rates will apply only to established SMP licensees.

3.5.1.2 Additional obligations

Although the price control obligation is applied to all licensees, cost orientation is only to be applied to Vodacom, MTN, Cell C and Telkom. It is further proposed that additional obligations aimed at addressing the competition problem of inefficient pricing apply only to the established SMP Licensees to support the cost-orientation obligation as follows:

- Accounting Separation obligation in terms of Section 67(7)(f); and
- Requirement relating to the accounting methods to be used in maintaining the separation of accounts in terms of Section 67(7)(g).

Reducing wholesale prices down to an efficient level can best be achieved through a robust wholesale price control framework supported by a regulatory accounting separation and cost accounting obligation.

In the short and medium term, the Authority will use existing cost accounting data complemented by relevant international benchmarks of the cost of fixed and mobile call termination to determine the efficient charge level. The detailed approach to the imposition of wholesale price controls is discussed in Appendix A.

The Authority believes that the imposition of these pro-competitive remedies is consistent with South African legislation and supported by international best practice. In particular, the approach taken is proportionate, transparent, non-discriminatory and objectively justifiable.

3.5.2 Monitoring and enforcement

Monitoring and enforcement of the above-mentioned remedies between review periods will be important. As such, the Authority will require licensees to submit the information relevant to each remedy, whether that is RFRs, RIOs or other regulatory obligations. Additionally, the Authority will require ongoing information from the various licensees in order to monitor the development of the market and have sufficient information at its disposal at the time of the next review. Licensees will be required to provide regular basic reports as follows, in a format to be prescribed by the Authority:

- Bi-annual wholesale tariff reports
- Bi-annual market reports including information not limited to that submitted in terms of the Wholesale Call Termination Questionnaire (e.g. reporting on revenues, volumes, active subscribers, traffic, negotiations etc)

Every licensee must furnish the Authority with documents or information specified in a written notice relating to any matter in respect of which a duty or obligation is imposed on such licensee by the Act or any underlying statutes.[75] The Authority will therefore, in order to effectively monitor and evaluate compliance with the proposals arising from the market review, and in an effort to evaluate the effectiveness of the proposed remedies, set out the relevant reporting requirements in regulations made in terms of section 4(3)(g) of the ICASA Act. This will be reinforced by existing licence conditions and section 4(3)(j) of the ICASA Act which provides that ICASA may make regulations on any matter consistent with the objects of the Act and underlying statutes that are incidental or necessary for the performance of the functions of the Authority.

[75] Section 4(3)(g), ICASA Act

Annexure 1 – Wholesale Price Control Remedy Design

1. Wholesale Price Control Remedy

Increased competition will result in more pressure to minimise costs over time, and lead to greater investment in innovative new technologies and service by licensees. However, absence of competition in the wholesale call termination market means that ICASA must impose obligations to mimic the results that would be achieved in a competitive situation.

The Authority has decided to impose a wholesale price control obligation, on all licensees with SMP. The obligation is two-fold - established licensees with SMP, being Vodacom, MTN, Cell C and Telkom will be required to charge cost-oriented termination rates as discussed in Section B.3. All other licensees must charge fair and reasonable prices for the provision of call termination services as discussed in Section 1.2

This Appendix discusses the "fair and reasonable" and cost orientation obligation. The former obligation is fairly simple. As such, the Appendix goes further to detail the various considerations in designing a cost orientation remedy, the pros and cons of adopting various approaches, and the Authority's chosen approach.

1.2 "Fair and Reasonable" Obligation

The Authority recognises that all licensees have SMP on call termination on their own markets. As such, price control obligations shall apply to all licensees; however such obligations shall be imposed in a manner that is proportionate and justified. Established SMP licensees are in the greatest position to use such market power to distort the market and shall have the cost-orientation obligation imposed on them. The obligation to charge 'fair and reasonable' termination rates that are not excessive will apply to all other SMP licensees providing wholesale call termination services. The "fair and reasonable" obligation, akin to that imposed in Sweden and the French Territories for late entrants, will be applied to those SMP licensees that are not established enough to cause harm to the market. [76]

Licensees will be expected to charge rates that are not excessive and not abusive. In instances where it is believed that an operator is not complying with this requirement, a dispute shall be lodged with the Authority which will consider such disputes on a case-by-case basis.

Given that it is the least onerous of price control obligations, with minimal ex ante monitoring by the Authority, there are no supporting obligations for the 'fair and reasonable' obligations, such as regulatory accounting. A regulatory accounting obligation would be too intrusive and onerous a means of aiding the Authority to monitor compliance with an otherwise light touch obligation.

Given the imposition of the cost-orientation principle in the provision of call termination services, the Authority expects the following outcome of the "fair and reasonable" obligation for non-established licensees:

- Non-established licensees to charge a reciprocal rate with the rate set for Telkom if these licensees offer a fixed service, and
- Non-established licensees to charge a reciprocal rate with the rate set for Cell C, MTN and Vodacom if these licensees offer a mobile service.

Non-established licensees are given the right to refer any call termination price dispute to the Authority after the breakdown of commercial negotiations. The process for the lodging of disputes is specified in the Call Termination regulations

1.3 Cost Orientation: Determining the "efficient charge" level

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[76] ERG (2006), *Revised ERG Common Position on the approach to appropriate remedies in the ECNS framework*, p. 67. See http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

Any wholesale price control mechanism that the Authority adopts will have to promote efficiency in a sustainable manner that does not distort the market. It is generally accepted in economic theory that welfare is maximised in the long-run in a perfectly competitive market when prices are set equal to long-run marginal cost.[77] Setting prices according to long-run cost will lead to an efficient outcome in terms of incentives for market entry, while still providing licensees with a sufficient margin in order to cover costs and earn an appropriate return on capital employed.

Regulators revise the prices in markets where there appears to be an access bottleneck due to the existence of market power according to the costs that an efficient operator employing the latest available technology would incur. In arriving at the costs of an 'efficient operator', the Authority is aware of the need to balance the needs of the public and end users who seek high quality services at reasonable and affordable rates with those of licensees who need to achieve a suitable rate of return on their investment. The proposed "efficient charge" takes into account these considerations.

There are different forms of wholesale price control possible to try to reach the 'efficient charge.' Various approaches have been adopted throughout the world amongst which the most common is to set charges directly on the basis of licensees' costs or on the basis of external input such as benchmarking or cost modelling. Approaches to setting pricing include:

- At cost orientation using cost information (Current Cost Accounting, Fully Allocated Costing, Long Run Incremental Costing, etc);
- At a benchmark level (using relevant benchmarks appropriate to a given country); and
- Using a retail benchmarking approach.

The approaches set out above are not mutually exclusive. The Authority has considered all approaches and each are discussed in turn below.

1.3.1 Option 1: Cost orientation using cost information

The starting point in establishing economically efficient interconnection prices is usually the economic cost of interconnection. Cost modelling is the manner in which the Authority can establish 'cost' with the most certainty. In many jurisdictions, regulators set interconnection prices based on long run incremental costs (LRIC). LRIC has been applied in Australia, Tanzania, Uganda, Nigeria, UK, EC, and the United States. There are various forms of LRIC, with the most common form of LRIC being Total Service Long Run Incremental Cost (TSLRIC).[78]

LRIC can be estimated using two primary modelling approaches – 'top-down' and 'bottom up.' Briefly, 'bottom-up' modelling uses detailed industry data to build a hypothetical network that can supply electronic communications services, including interconnection services. The costs of this network, including capital costs and operations and maintenance costs are then allocated to all the services provided.[79]

Conversely, 'top-down' modelling measures LRIC using the operator's actual costs (CCA or HCA) as a starting point. These costs are those set out in the operator's accounts, presenting a classic information asymmetry case for regulators. 'Top-down' modelling is not forward looking and does not involve detailed network modelling. Instead, it separates the firm's assets and costs into service groups, and then adds the costs associated with interconnection to arrive at an estimate of LRIC.[80]

To summarise, some of the practical differences between top down and bottom up modelling include:

[77] See for example Kahn: "The Economics of Regulation" in John Wiley & Sons, Vol. 1, 1970, Vol. 2, 1971, reprinted by MIT Press, 1988.
[78] http://www.ictregulationtoolkit.org/en/Section.2092.html
[79]http://www.ictregulationtoolkit.org/en/Section.2092.html
[80] http://www.ictregulationtoolkit.org/en/Section.2092.html

- It is more difficult to take account of future changes in costs in a top-down approach than in a bottom-up approach that can incorporate explicit assumptions about technological change and its impact on the firm's choice of inputs; and
- It is possible to make adjustments to top-down approaches to remove inefficiencies in the firm's current network configuration and costs, but it is difficult to do so transparently.

The Authority notes that cost orientation is best achieved using information obtained through a cost model. The Authority has to date not created a cost model, however, similar information has been obtained from the fixed and mobile licensees through RFRs submitted in compliance with COA/CAM regulations. Such RFRs submitted using the Current Cost Accounting standard provide sufficient cost information for the Authority to assess the cost base of the mobile and fixed licensees. Thus cost orientation using cost information is feasible in South Africa immediately. A cost model, using a methodology such as LRIC, could subsequently be created and its findings applicable for the next review.

1.3.2 Option 2: Cost Orientation at Benchmark Level

Benchmarking interconnection rates is the process of establishing local practice based on practices in other jurisdictions. In the context of the design of a price control regime, benchmarking can be done on many aspects of the regime, including:

- Rates;
- Duration; and
- Asymmetry and levels thereof.

Benchmarking has two main purposes in interconnection pricing. In situations such as that in South Africa where detailed cost models can be estimated (based on RFRs), benchmarking can provide a 'sanity check' to verify the results derived from the RFRs. This is the approach that has been taken by the Authority in this review. Alternatively, benchmarking can be used directly to set interconnection prices (Botswana, Namibia, New Zealand).

Box 1: Benchmarking approach to regulating call termination in Namibia

The "Namibian Interconnection Benchmarking Study" published in 2009 benchmarked the cost of termination in Namibia against a number of countries including Tanzania, Australia, Sweden, France and Kenya and used a top-down cost estimation for a common sense check on the results. It noted that "a LRIC study using international best practice is likely to get to similar or even lower results" and that any of the Namibian licensees could request a revision of termination rates by demonstrating that its forward-looking long-run incremental cost of termination exceeds the proposed ceiling.

1.3.4 Option 3: At Retail benchmark level

In terms of this approach, the wholesale price is calculated as the retail price minus the costs of an efficient undertaking, and as such an excessive retail price will automatically feed into an excessive wholesale price (or vice versa). A retail benchmarking or "retail-minus" approach cannot effectively bring down excessive access prices to a cost-oriented level without retail price regulation.[81] The Authority notes that it has not reviewed the fixed or mobile retail markets and has not formed a view on pricing in such

[81] ERG (2006), *Revised ERG Common Position on the approach to appropriate remedies in the ECNS framework*, p. 85. See http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

markets, however, it is sufficiently concerned about the level of retail prices to be wary of utilising this approach.

Setting prices at a retail benchmark level would reduce the established SMP licensees' incentives to discriminate, and would prevent them from exposing their competitors to a margin squeeze, since an efficient entrant in the market would be able to compete effectively. However, as pointed out by the ERG, "in the presence of economies of scope or scale on the retail market.... it will usually be difficult to set the margin such that is allows alternative licensees as well as the SMP operator's retail arm to compete on a level playing field."[82]

Box 2: Retail Benchmarking approach to regulating mobile call termination in Australia

In Australia, in 2001 the ACCC developed pricing principles for GSM termination services. The Commission adopted a retail benchmarking pricing methodology. This approach provides that changes in each mobile carrier's termination prices are benchmarked against the price movements of its overall mobile package (including access and outgoing calls). The Commission examined the issue again in 2003 and decided in 2004 that benchmarking should be dispensed with and that fixed to mobile termination needed to be set to reflect the LRIC of mobile termination. The Commission proposed a glide path from the existing level to achieve the calculated LRIC in 2007.

1.3.5 Proposals for reaching the "efficient charge" level in South Africa

Bearing in mind the above-mentioned approaches of cost orientation using cost information, benchmarking and retail benchmarking, and taking into account the information available to the Authority at this point in time, The Authority has decided to use a combined approach of Option 1 and Option 2 to determine the efficient charge level – cost orientation using available cost information coupled with benchmarking as a cross reference.

The Authority has decided that the best way forward in implementing price controls is to use the information obtained from the Regulatory Financial Reports submitted in terms of the Chart of Accounts and Cost Allocation Manual (COA/CAM) to arrive at the efficient charge in South Africa. Regulatory Financial reports in terms of COA/CAM have been submitted by Vodacom, MTN and Telkom. In arriving at the efficient charge level the Authority has reviewed the Regulatory Financial Reports submitted for the year to December 2007 by MTN and Telkom, for the year to March 2008 by Vodacom.

In the case of Cell C, which was not required to submit formal Regulatory Financial Reports as per the COACAM regulations, published statutory accounts are available and form the basis of the analysis undertaken. To permit comparison with the analysis for Vodacom and MTN, Cell C's accounts for the year ending 2007 have been used.

The Regulatory Financial Report analysis is supported in some instances by information provided by licensees in response to the Industry Data Questionnaire such as disaggregated traffic and wholesale and retail revenue. Finally, benchmarking data has been used to provide a 'sanity check' for the Authority to ensure that the Authority's chosen approach produces results that would reasonably be expected in other jurisdictions.

[82] ERG (2006), *Revised ERG Common Position on the approach to appropriate remedies in the ECNS framework*, p. 78. See http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

While benchmarking is useful and may be a quicker approach, the Authority is of the opinion that using benchmarks alone to set fees is not the ideal approach in that there are inherent risks in using it as the primary means of determining rates – it is critical that the appropriate benchmarks are used and the necessary adjustments made (e.g. for exchange rates, traffic patterns, local costs) for benchmarking to be meaningful. Benchmarking against good practice in the EC which has an established history of market review, as well as in African countries that have similar market characteristics and have created cost models is, in the Authority's view, a useful approach to serve as a comparison with a cost-oriented approach.

The above-mentioned approach informs the efficient charge levels to be set in the price control regime to be implemented during this review period, i.e. 2010 – 2013.

For future review periods, the Authority will use information obtained as a result of cost modelling and derived through the imposition of the cost accounting and accounting separation obligations in terms of the regulations arising from this market review to inform the efficient charge. The Authority may also undertake specific additional cost modelling of licensees call termination costs to inform future determinations of rates where necessary. The Authority also intends putting in place regular reporting requirements for licensees, including at a minimum annual financial statements.

2. Framework Issues - Remedy Design

In addition to the methodology of arriving at an "efficient charge" level discussed above, the Authority has taken into account a number of framework issues relating to the imposition of a wholesale price control regime and the design of the wholesale price control remedy.

2.1 Efficient charge level – A blended rate or a single set rate?

There exist two methods to set wholesale rates: either as a single set rate or as an average or "blended" target rate. A blended approach allows licensees flexibility to set different rates for peak and off-peak termination, as long as the average or blended rate is consistent with the target rate. The alternative is the imposition of a set rate.

2.1.1 Option 1: Introducing a blended regulated charge

A blended regulated rate allows licensees flexibility to set different rates as long as the average or blended rate is consistent with the target rate. The main benefit of setting a blended rate is that it provides licensees with flexibility to set different rates for peak and off-peak traffic and thus provide price signals that reflect the underlying costs of termination during different times of the day. Depending on the specific retail pricing strategies of each operator, differential wholesale prices for peak and off-peak traffic may flow through to different retail prices.

The engineering capacity of networks is heavily influenced by the amount of traffic expected to pass-through the network at the busiest time of the day (the 'busy hour'). Typically, in peak traffic times, networks are likely to be close to fully utilised and hence, the cost of termination in these periods will be higher than in off-peak periods. Offering lower prices in off-peak times provides incentives on some consumers to make calls at off-peak rather than in peak periods (and hence save money) on the assumption that the time of day variation in the wholesale termination rate is passed through to the corresponding originating operator's retail prices. This can be an effective way to spread traffic across the day and improve network efficiencies.

If networks still have capacity during the peak times, then this weakens the arguments in favour of retaining a regulated termination rate based on a target average charge.

Setting a 'blended' regulated charge means that licensees must set peak and off-peak termination charges based on their expected traffic volumes in peak and off-peak times. If these traffic volumes are not met, then there is the potential for the operator to over-shoot (or under-shoot) the target rate. If an

operator over shoots the target rate, then it is technically charging a termination rate that is above the regulated rate – and hence in breach of the regulation.

It is recognised that setting a blended termination rate, and allowing licensees to differentiate their rates as long as they, on average, meet the target, will require the Authority to put in place a more extensive monitoring and compliance regime in terms of which licensees will have to provide reports to the Authority on a regular basis to demonstrate compliance. The introduction of reporting and monitoring will make it less likely that consistent 'overshooting' of the target rate will occur.

2.1.2 Option 2: Introducing a set regulated charge

A set (rather than blended) regulated charge would apply to all licensees equally. Licensees would be required to charge this set rate for all traffic at all times.

Introducing a set regulated charge would be consistent with the approach used in a number of other countries including Tanzania, Uganda Kenya, Germany, France, Italy, Netherlands and Norway. A set charge has the benefit of simplifying the charge control regime and removing the need for Licensees to forecast traffic volumes and provide compliance reports to the Authority. It also reduces administration costs for the Authority.

A potential drawback of imposing a set charge is that it prevents licensees from setting differentiated termination rates to account for differential unit costs for termination rates in peak and off-peak times. The Authority is aware that it is possible for that in peak times (where the network may face capacity constraints) the unit costs of mobile call termination may be higher whereas in off-peak times (such as the weekend) unit costs for mobile termination are likely to be lower. Being able to set peak and off-peak wholesale prices allows licensees to spread traffic away from the busy hour, and hence provides a way to manage network efficiencies by reducing the traffic load in the 'busy hour'.

However, a set regulated rate introduces a number of benefits. These benefits include a more transparent retail pricing structure for consumers. This is not only a benefit to consumers but also to licensees because it would allow licensees to more effectively manage their traffic through retail pricing mechanisms as well as reduce the complexity in retail billing services.

2.1.3 Proposal

Bearing in mind the pros and cons of a blended regulated rate versus a set regulated rate, the Authority is of the view that the impact of selecting one approach over the other on the Authority is relatively minimal. There is an increased monitoring and oversight role of the Authority should it impose a blended rate, and this is accompanied by increased reporting requirements that would have to be placed on the licensees.

The initial view of the Authority is that in a South African context, Option 2, a set regulated rate which reduces the regulatory burden, provides clarity to the market and simplifies the charging control regime is the preferred approach. The impact of this approach on the ability of licensees to set peak and off peak wholesale prices is noted, however, the Authority believes that this does not outweigh the abovementioned benefits and welcomes views from affected parties in this regard.

2.2 Designing a Glide path

On the understanding that a regulated charge control should be introduced and that current termination charges should be reduced to the efficient charge level, it is necessary to consider the speed at which charges should be decreased during the period of the control.

2.2.1 The economics of a Glide Path

In broad terms, the Authority recognises that the path of reductions in wholesale call termination charges should give due consideration to balancing two key objectives:

- reductions should be achieved sufficiently quickly in order to deliver substantial benefits to consumers, including benefits to be derived by addressing possible competitive distortions; and
- reductions should allow sufficient time for licensees to adjust to new charging levels and structures and take these changes into account in their business plans and planned capital expenditure.

The Authority firmly believes that wholesale and retail consumers should be able to benefit from lower prices for network services. Such consumer benefits must be reaped in the context of a regulatory framework that does not unduly disrupt or distort the market and licensees ability to provide services (i.e. through adverse effects on incentives to investment, which impact on long term consumer welfare). In addressing this question, we consider that licensees should not be denied the opportunity to recover their efficiently incurred costs.

A glide path can be effective in allowing SMP licensees a period of time in which they can increase network efficiencies and lower unit costs of termination (by, for example, building market scale and increasing market share, or replacing inefficient network elements & back-office support systems).

However, there are also arguments for an immediate reduction in rates rather than a glide path which will have a more immediate impact on the market and on wholesale and retail consumers. Whether a glide path should be implemented or not depends crucially on two factors:

- the degree to which a move to a lower termination rates would lead to some licensees being forced to charge termination rates below their efficiently incurred costs; and
- the size of the reduction of the termination rate from one price control period to another – the greater the reduction, the greater the potential disruption on the business plans of licensees.

The arguments in favour of a glide path depend on the final format of the price control. For example, if a symmetrical regulated rate (based on operator cost data) is applied to the three established SMP mobile licensees, a glide path may be warranted to allow the smaller operator time to improve its network efficiencies and increase its subscriber base in order to benefit from the economies of scale that the more established players already enjoy.

In addition, the size of the reduction from the current rates of R 0.89[83] peak/R 0.77 off-peak and fixed termination rates of R 0.31 peak and R 0.17 off-peak impacts the decision of whether or not to impose a glide path. The greater the differential between the efficient charge level and the existing termination rates, and the larger the reduction in the termination rates required, as is the case in South Africa, the stronger the arguments for a glide path.

The main argument against a glide path is that it will delay the benefits of lower prices to end-users and allow those licensees which already have scale and SMP advantages to continue to levy fixed and mobile termination rates above unit costs.

In Nigeria a hybrid approach is taken. In terms of the Nigerian regulations an asymmetric approach is adopted and the incumbents (those operational prior to the new licensing regime introduced in 2006) must face an immediate rate reduction, while new entrants are subject to a glide path which will, over four years (2013), converge with the rate imposed on incumbents from 2010.[84]

2.2 Proposal

The Authority recognises that any immediate implementation of very significant wholesale price reductions could distort competition and, like regulators in many other jurisdictions, is of the view that a

[83] The R 0.89 call termination rate is a recent reduction from the commercially agreed rate of R1.25. This reduction of R 0.36 took place as of 1 March 2010.
[84] Nigerian Communications Commission Interconnection Decision, December 21, 2009.

glide path is the optimal approach to migrate the sector to cost orientated levels. The Authority therefore proposes implementing a glide path.

2.3 Duration of price control

The Authority recognises that a key decision to be made relates to the duration of the price control. In the UK, Ofcom set price controls for mobile call termination for a period of four years. Ofcom's argument was that:[85]

- the price control period should be of sufficient length to establish material incentives for (mobile) licensees to reduce their costs (and offer the potential for increased profits if licensees are able to make efficiencies beyond those assumed in the charge control); and
- price control reviews require the mobile licensees (and major purchasers) to devote significant resources to presenting their views on competition and the level of costs.

As such, Ofcom considered that setting charges for an extended period of time is ideal in that it provide certainty to both suppliers and purchasers of termination services.

Using similar arguments, regulators in a number of countries have set varying price control periods including the Tanzanian Communications Regulatory Authority ("TCRA") which has a five year review period[86], and the Nigerian Communications Commission ("NCC") and the Uganda Communications Commission ("UCC") which put in place four year review periods. The Communications Commission of Kenya ("CCK") has a three year review period[87], but it has a process to confirm the proposed efficient charged set out in its glide path annually.

Table 1: Duration of Price control, various countries

	Fixed or Mobile	Review Period (years)
Tanzania	Fixed & Mobile	5
Kenya	Fixed & Mobile	3
Nigeria	Fixed & Mobile	4
Uganda	Fixed & Mobile	4
United Kingdom	Mobile	4

Source: National Regulatory Authority websites

The Authority recognises that the main drawback of adopting a longer time period (such as five years) in South Africa is that there is significant uncertainty about future traffic volumes and unit costs. This is particularly the case given the Authority is relying on the data only recently provided by licensees on the unit costs of mobile and fixed call termination rather than estimates derived by specific cost models (such as a LRIC approach as used by Ofcom, TCRA, UCC and many other regulators). There is also a chance that technological developments, such as the impact of VoIP or WiMAX over the period of the charge control may affect the market definition and price controls requiring that they be adjusted or removed.

2.3.1 Proposal

[85] Ofcom discusses this in detail in its 2007 Statement on Mobile Termination on pages 133-4.
[86] Tanzania is currently on its second five-year glide path
[87] 1 March 2007 – 1 January 2010, CCK Review of Implementation of Interconnection Determination No. 1 of 2007

The Authority has considered the various lengths of review periods adopted in other countries. It has also assessed the pros and cons of a longer versus a shorter price control period. The traffic information provided by responses to the industry data questionnaire indicates that licensees have detailed traffic data over the previous three years; however, the Authority notes the difficulties of forecasting traffic volumes and unit costs.

The Authority is of the view that a three-year period for regulatory assessment starting from July 2010 should be imposed. A three-year period is reasonable in that it provides stability and certainty in the short term; it also allows for a review once the impact of VoIP, WiMAX and other new technologies can be assessed, and once the Authority has obtained more detailed cost information on a greater number of licensees in the market, as a result of the imposition of accounting separation obligations arising from this market review process.

Three years would allow time for revised regulatory financial reporting requirements to be put in place, with clarification of any queries relating to methodology or allocation processes.[88] This will also provide a period in which smaller licensees could compete more strongly and any operator that requires it can bring its cost of termination down to more efficient levels.

Consequently, in conducting this inquiry, the Authority has used a three year period for the purposes of its analysis of the fixed and mobile markets and the likely developments in those markets.

2.3.2 Symmetric versus Asymmetric application of price control (symmetry of rates)

The Authority is aware of the debate around whether a single termination price cap should be set and made to apply to all licensees with SMP who must comply with a price control obligation or whether there should be more than one set of termination price caps set. The latter approach would introduce an element of asymmetric regulation of termination rates within the remedy. Economic principles tend to support a unique and uniform termination rate for all network licensees.[89] The European Commission considers that termination rates should normally be symmetric and that asymmetry requires adequate justification.[90]

Where asymmetry is permitted, the ultimate goal of encouraging efficiency is paramount; as such the duration of asymmetries should be defined upfront recognising that termination rates should be brought down to the efficient charge level in as short a period as possible. Asymmetric pricing causes efficient licensees to subsidize relative inefficiencies of their competitors, and in so doing does not favour productive efficiency. Thus if asymmetry is allowed for too long it could support inefficiency.

In light of the Authority's decision to apply the price control remedy on Telkom alone in the fixed sector, the discussion of asymmetry is not relevant to the fixed sector. Therefore the remainder of this section only addresses the question in relation to the mobile sector, where a decision is required on whether MTN, Vodacom and Cell C should comply with the same price control requirements.

There are generally four reasons that regulators advance for permitting asymmetry in the application of price caps. Broadly they are:

- To account for technology differences, e.g. in South Africa to account for the different costs of the combined PGSM 900/1800 MHz (Vodacom and MTN) and the EGSM 900/ 1800 MHz operator (Cell C);
- To encourage the development of a new or late entrant in the market, which suffers from a lack of scale due to its late entry in the market;

[88] During the period of the glide path, the Authority or the licensees, or both, could undertake detailed cost modelling in order to understand more fully the correct and appropriate inputs to a cost based termination rate. This should be explored in further detail in the design of the accounting separation remedy.
[89] ERG's Common Position on symmetry of fixed call termination rates and symmetry of mobile call terminations rates, ERG(07)83final, March, 12., 2008, p. 4.
[90] European Commission recommendation on the regulatory treatment of fixed and mobile termination rates in the EU. See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF

- Due to different market shares of the licensees. The market shares in South Africa are Licensee 1 (54 per cent), Licensee 2 (32 per cent), and Licensee 3 (14 per cent); and
- Based on different costs of capital of the licensees.

The Authority has considered practices in other jurisdiction and adopted the principle that price controls will only be applied in an asymmetric manner against reasonable and objective criteria. In the main, only cost differences that are outside the licensees' control will form a basis for asymmetry (e.g. based on allocation of spectrum) and asymmetry may be applied in order to encourage new entrants in markets where there is insufficient competition and entry to the market is regulated, for example an Invitation to Apply is needed to enter the market.

The Authority is of the view that market share is not an objective or justifiable reason to allow asymmetry; nor is the cost of capital.

2.3.2.1 Technological Differences

Although all of the mobile licensees are using GSM technology, MTN and Vodacom have been allocated PGSM 900 MHz and GSM 1800 MHz spectrum; Cell C has an allocation of GSM 1800 MHz and a lesser allocation of EGSM 900 MHz spectrum. The cost differentials between 1800 MHz and PGSM 900 MHz networks have been reviewed by a number of regulators, including Ofcom. There appears to be higher network equipment costs on an 1800 MHz network and more expensive handsets compared to an equivalent 900 MHz network. As a result, 1800 MHz licensees have argued that they face lower earnings to repay their initial investment. The Authority notes that those arguments are relatively dated and that while the cost differentials may have been significant initially, the gap in costs is likely to have reduced over time.

The Authority also notes that all licensees in South Africa are dual band GSM 900/1800. While Cell C's GSM spectrum differs, the Authority has not received any evidence regarding the cost differentials between EGSM networks and PGSM networks that would justify asymmetry.

A factor to consider is whether the licensees can 'swap out' of their spectrum assignment through spectrum trading. In South Africa this practice is not permissible.

In summary, the Authority believes that the spectrum allocations to all three mobile licensees are substantially similar. Further, given the imposition of the price control regime at this time, eight years after the licensing of Cell C, it is the Authority's view that any differences in costs incurred are no longer relevant.

2.3.3.2 Late Entry

The mobile sector in South Africa was a duopoly consisting of incumbents MTN and Vodacom from 1993 to 2001, when Cell C was licensed and launched services. Since the entry of Cell C, regional players in the form of Under Serviced Area Licensees (USALS) who now hold ECS and ECNS licences, were licensed and assigned mobile numbers to provide services on a technology neutral basis. Several entered into roaming agreements with mobile licensees. More recently, in the last two years, former "VANS" licensees have been assigned mobile numbers to provide voice and data services, also on a technology neutral basis. Many have elected to use VoIP despite being assigned mobile numbers.

Asymmetry on the basis of late entry is not uncommon. In Nigeria, the NCC decided in its 2009 Interconnection Determination that:

> *The Commission has specified a glide path leading to symmetric mobile termination rates by 2013. The Commission believes that this time, and the rate differential implied by the glide path specified, should give new entrants sufficient opportunity to establish themselves and to compete with other licensees based on symmetric termination rates as of 2013.*

The NCC goes further to state that:

"...asymmetry is a temporary measure based on transparent criteria designed to take account of the introduction of unified licensing and the relative scales of fixed and mobile segments...New entrants will require time to build up a subscriber base and gain scale. Given the limited duration of the glide path defined by the Commission new entrants will still need to operate efficiently in order to create a sustainable business."

Nigeria, like South Africa, has moved to a converged license regime in the last few years. From 2006 the NCC began issuing unified licences to all players, and converted the licenses of existing players. Bearing this in mind, the concept of a "new entrant" in the Nigerian context must meet two criteria:

- The termination service is provided under a licence that was allocated after 01/01/06 AND is less than 4 years old AND
- The provider (or a company bought by the provider) of this termination service did not provide this service in Nigeria before 01/01/06 (under a different licence).

This definition relies on whether a party was providing a service, not whether they were licensed and the new entrant being under four years old. Thus, even where concessions are made for new entrants, a time limitation is set. In other countries where asymmetry was applied for late entrants, it has generally been applied at the time of market entry or within three years of licensing.[91]

2.3.3 Asymmetry Proposal for mobile services

The Authority notes and appreciates the arguments for the asymmetric application of the glide path. In principle, the Authority believes that asymmetry can be justified on the basis of being a new entrant, in which case the price control obligation will not apply in any event; and technological differences, for example an allocation of spectrum that increases the costs of providing services relative to competitors.

This will have to be demonstrated to the Authority on a case-by-case basis (for example, the service provider would need to prove that it has a higher cost-base based on technology).

At this point in time, the price control remedy applies only to established SMP licensees, and the Authority sees no basis for further distinguishing between such licensees. None of the three mobile licensees with SMP qualify for asymmetry based on technology.

3. Decisions on remedy design

In summary, in light of the market definition and analysis conducted, the Authority proposes designing the wholesale price control remedy as follows. The Authority recommends:

- introducing a glide path over a period of three years (July 2010 – June 2013);
- imposing a set termination rate; and
- recognising asymmetry on the basis of new entry or cost of technology. In the case of the South African mobile sector this means none of the licensees required to comply with a wholesale price control obligation are eligible for an asymmetric rate. In the case of the South African fixed sector, the wholesale price control obligation applies only to one party, Telkom SA.

3.1 Mobile Glide Path

From the initial recommended rate, three annual changes are recommended:

- From July 2010 – 0.65 ZAR per minute (~50 per cent reduction from pre-March 2010 rate)
- From July 2011 – 0.50 ZAR per minute (~23 per cent reduction); and
- From July 2012 – 0.40 ZAR per minute (~20 per cent reduction)

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[91] Determination of Voice and SMS Interconnection, Nigerian Communications Commission, 21 December 2009.

It is recommended that the glide path will apply to Cell C, MTN and Vodacom from 2010 - 2013. The rates set out represent a price ceiling. Any other mobile licensees that may enter the market will be expected to provide call termination at fair and reasonable rates.

3.2 Fixed glide path

From the initial recommended rate, three annual changes are recommended:

- From July 2010 – 0.15 ZAR per minute (~50 per cent reduction);
- From July 2011 – 0.12 ZAR per minute(20 per cent reduction); and
- From July 2012 – 0.10 ZAR per minute (17 per cent reduction).

It is recommended that the above price ceiling apply to Telkom. The Authority expects that other fixed licensees, including those licensees providing VoIP services, who are not subject to a price control obligation, will provide call termination on their networks at fair and reasonable rates.