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	or	Block A
ICASA		Pinmill Farm
Private Bag X10002		164 Katherine Street
Sandton		Sandton
2146		

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]

[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.

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.

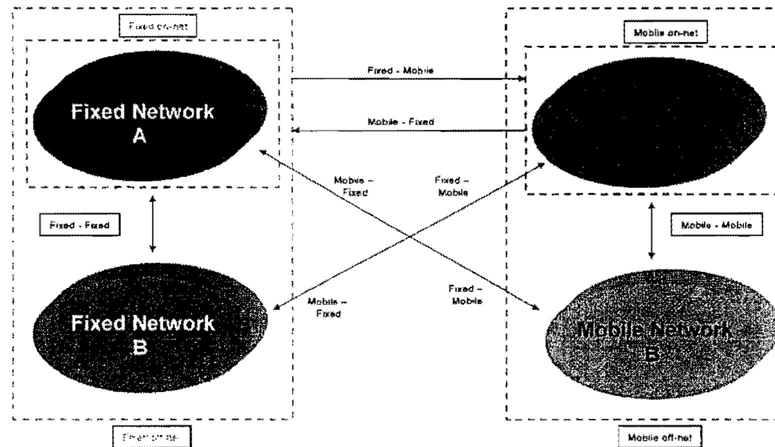
The process of defining a market definition is not an end in itself. Markets are defined in order to assess whether competition is effective and whether any party has Significant Market Power ("SMP") in a particular market. Following from an assessment of the effectiveness of the competition, it is then 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]

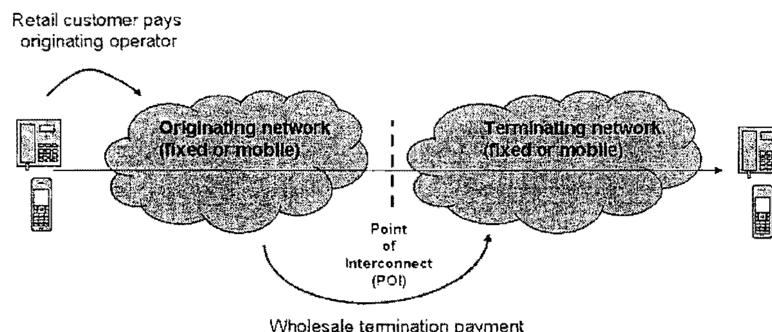


For F2F, M2F, F2M and M2M voice calls, the call originates on the fixed or mobile network to which the calling party (the A-party) is connected. The call will at some stage be handed over to the electronic communications network on which the called party (B-party) is located, and will be 'terminated'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

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[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.

[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.

[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