

# **Tariff-mediated network effects in the fixed telecommunications sector in South Africa**

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**Date: 17 August 2010**

**Draft – please do not cite**

The fixed telecommunications sector in South Africa has recently experienced liberalization and the consequent outbreak of competition, particularly in respect of offering fixed geographic-based voice services to customers. Nonetheless, interconnection arrangements among fixed operators to date have been region-based, and have not offered the full benefit of local-based call termination rates based on local geographic numbers. This has led to high prices for call termination. High call termination rates have meant that Telkom is able to use on-net discounts to generate tariff-mediated network effects, which they have used to great effect in their Closer calling plans. Furthermore, even with region based call termination pricing, Telkom has not passed on lower wholesale rates for off-net calls to retail customers, which has meant that customers are more reluctant to switch to new entrants, since the costs of calling customers that switch would increase. Telkom's high off-net prices further generates 'Tariff-mediated network effects', whereby customers prefer to belong to larger networks. The theoretical literature is fairly clear that call termination rates should be regulated to some degree; nonetheless, it is less clear whether prohibiting on-net discounts and high-off net prices, which result in tariff-mediated network effects, will hurt or harm consumers. Regulators need to essentially trade off lower prices in the short term with the risk that new entrants will exit in the long term, resulting in higher prices in the long term.

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## 1. Introduction

The telecommunications sector in South Africa has recently been liberalized, first with the licencing of the second national operator ('SNO', Neotel) in May 2005, and then with the advent of the *Altech* litigation, which led to the licencing of hundreds of entities to build their own electronic communications networks.<sup>2</sup>

The incumbent fixed line operator, Telkom, has responded to competition by a variety of means, embodied in the following strategy (Competition Tribunal, 2006):

*“We aim to counter arbitrage opportunities, defend fixed to mobile revenue stream and counter revenue erosion to the SNO and other competitors such as VoIP providers, through strategies including long term contracts, bundled discounts packages, calling plans as well as volume and term discounts.”*

Telkom has implemented this strategy at least in part by using tariff-mediated network effects, using a combination of high off-net calling prices, and significant on-net discounts in the presence of relatively high call termination rates. On-net discounts are where an operator charges low prices to call customers on its own network, where call termination rates are high, and therefore where competing operators cannot offer the same low rates to call the first operator's customers. Incumbents use this tactic to make their network more attractive to join. As more customers join the incumbent's network, so it becomes even more attractive to join the same network. As a result, incumbents can exclude new entrants by means of these 'tariff-mediated network effects'.

The Independent Communications Authority of South Africa (ICASA) has recently sought to ameliorate the potentially exclusionary impact of on-net discounts by regulating the fixed call termination rate.<sup>3</sup> However, the draft regulation does not minimise the costs of call termination for new entrants, since it sets a single national rate for call termination, from which a range of Telkom's distance related costs of building a fixed network must be recovered. The current draft regulations are therefore unlikely to eliminate the potential for on-net discounts to exclude new entrants, such as Neotel.

Another form of tariff-mediated network effects that incumbents can use to exclude new entrants is charging high off-net prices. If customers value receiving calls, a new entrant is likely to face difficulties attracting customers since prices for calls to the new entrant's network will be high, and fewer calls will therefore be made to customers joining the new network.

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<sup>2</sup> See decision of the North Gauteng High Court in the matter of Altech Autopage Cellular (Proprietary) Limited v The Chairperson of the Independent Communications Authority of South Africa and 28 Others 2008 ZAGPHC 268.

<sup>3</sup> See ICASA, 2010, 'Call termination regulations', Government Gazette No. 33121, Notice 314 of 2010.

There is a large and growing literature on call termination rates and tariff-mediated network effects, which explains the on-net discount strategy that Telkom is engaging in (see Harbord & Pagnozzi, 2010 and Armstrong & Wright, 2009, for useful summaries). There is a parallel literature on the effects of tariff-mediated network effects generated by high off-net prices (Telkom charging its customers high prices for calls to Neotel, for example), independent of call termination rates (Hoernig, 2007, 2008). Much of this literature relates to mobile networks, who historically negotiated very high call termination rates. Nonetheless, the theoretical principles are equally applicable to competition among fixed networks.<sup>4</sup>

There is also a debate about fixed and mobile substitutability, which is not addressed here (see, for example, Hausman & Sidak, 2005). There are good reasons to suspect that, at least for business customers, that mobile telephones are not a substitute for fixed lines. For example, most businesses provide their employees with fixed desktop telephones so that they are able to speak to colleagues in the same organisation cheaply.<sup>5</sup> Exclusionary effects in the fixed telephony sector are therefore likely to matter.

The rest of this paper is set out as follows: first, a summary of the relevant theoretical literature is provided. Next, Telkom's use of tariff-mediated network effects is discussed. Potential remedies are then explored. Conclusions are presented in the final section.

## **2. Theoretical aspects of tariff-mediated network effects**

### *(i) On-net discounts used by incumbents to exclude new entrants*

There is a large and growing literature on particularly mobile call termination rates, which largely focuses on the exploitative nature of excessively priced mobile call termination rates, and the welfare losses that arise from this (see, for example, Armstrong & Wright, 2009). This is not the focus of this paper. Rather, the focus of this paper is on the use of tariff-mediated network effects by incumbent network operators to exclude new entrants. Where incumbents can set a call termination rate, a high call termination rate can be used, along with on-net discounts, to generate tariff-mediated network effects. This is because customers belonging to the larger network will find their call costs to be lower on average than if they belonged to the smaller network because most of their calls will be on-net. The greater the number of customers that join the larger network, the lower the average calling costs for the customers belonging to that network.

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4 One reason that less attention has been paid to fixed networks in the literature is that, historically at least, the retail tariffs of fixed networks have been tightly regulated, and so at least high off-net pricing has not arisen to the same extent, and there has been less scope for on-net / off-net price discrimination.

5 There are solutions for mobile telephones that also have other in-building capabilities, such as Wi-Fi (IEEE standard 802.11), which could be used for free on-net calls. The vast majority of businesses in South Africa nonetheless make use of fixed lines for in-building use.

The literature on tariff-mediated network effects begins with Laffont, Rey and Tirole (1998b). Their analysis showed that on-net discounts by incumbents mean that a new entrant would find entry difficult without the availability of a full coverage network at the time of entry. Lopez and Rey (2009) extend Laffont, Rey and Tirole's (1998b) analysis by examining the effects of on-net discounts in the presence of switching costs. They find that, when customers display inertia, the incumbent has an incentive to set the highest possible mobile call termination rate. If customers instead are activists, then the scope for foreclosure is more limited; in fact, if the access charge is set too high, this could lead to the entrant overtaking the incumbent. Foreclosure is essentially profitable as long as there are significant switching costs and call termination mark-ups are not too high. If there are many potential responses by customers to prices, then foreclosure is only profitable if the entrant is completely driven out of the market; if this does not occur, high call termination rates generate tariff-mediated network effects, which intensifies competition. This is because networks compete to attract more customers to their network where competition is in two part tariffs, where there is for example a fixed monthly subscription charge and a variable voice call rate, by offering lower fixed tariffs. In doing so, each network maximises the network effects that arise from more customers joining their network. This leads to very low prices for consumer.

Indeed much of the literature, including Laffont, Rey and Tirole (1998b), Gans & King (2001), Armstrong & Wright (2009), stress that while incumbents might favour high call termination rates and on-net discounts to exclude new entrants, if this exclusion strategy is not successful, incumbents revert to favouring call termination rates that are lower than costs, since this has the effect of softening competition. This is because operators do not profit from high call termination rates directly (without the exclusion of new entrants). In a two-part tariff framework, where there is for example a fixed monthly subscription charge and a variable voice call rate, high call termination rates are passed through to low subscription charges (where competition is in two part tariffs, as above), via the 'waterbed effect'. This means that operators do not retain the profits earned from high call termination rates, and instead pass these back to consumers.<sup>6</sup> Therefore, high call termination rates combined with on-net discounts give rise to tariff-mediated network which, if they do not lead to the complete exclusion of new entrants, can lead to more vigorous competition between networks (Armstrong & Wright, 2009). Mobile operators, for example, if they were able to set separate fixed to mobile and mobile to mobile call termination rates, would set very high fixed to mobile call termination rates (which would be passed back to consumers in the form of low access tariffs) and would set very low mobile to mobile call termination rates, to make it attractive to belong to a small mobile network, which softens competition among the mobile operators for customers (Armstrong & Wright, 2009). In the fixed network context, there is no historical experience with fixed network operators extracting revenues from mobile operators via high

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<sup>6</sup> Note that this does not mean that high call termination rates, even absent exclusionary effects, are not a problem. This is because fewer than the efficient number of fixed to mobile calls are made, and greater than the efficient number of mobile to mobile calls are made (Armstrong & Wright, 2009).

call termination rates. Fixed network operators therefore have an incentive to lower fixed call termination rates among one another, to soften competition, unless an incumbent was employing an exclusionary strategy with respect to a new entrant.

Lopez and Rey (2009) conclude that: *“The network effects created by termination-based price discrimination appear to be a key ingredient for profitable foreclosure strategies”*. This suggests that on-net discounts, combined with high call termination rates, can lead to the exclusion of new entrants by incumbents, and regulators should be wary of this conduct.

Where call recipients value receiving calls, as in Hoernig (2007, 2008), Harbord and Pagnozzi (2010) show that welfare optimal call termination rates are likely below costs, and may even be negative. They argue that regulators should adopt bill and keep call termination rate regimes in order to internalise the externality that arises for call recipients in receiving calls. Bill and keep arrangements also minimise the potential exclusionary effects arising from tariff-mediated network effects, they require the least regulatory effort and are the least burdensome for operators. Their analysis is supportive of a low call termination rate regime.

The fact that call recipients value receiving calls can also give rise to exclusionary strategies by incumbents, who can use high off-net prices to exclude new entrants. This is discussed next.

#### *(ii) High off-net prices charged by incumbents to exclude new entrants*

Hoernig (2007) examines the role that off-net prices play in generating exclusionary tariff-mediated network effects due to the fact that customers value receiving calls. In the models discussed above, call termination rates are used as a means of charging high prices to fixed operators, or as a means of providing incumbents with an on-net discount strategy as a means of generating tariff-mediated network effects to exclude rivals. In Hoernig (2007), call termination rates are assumed to be set by a regulator, and the focus of the paper is on an incumbent, such as Telkom, setting high off-net retail tariffs (such as for calls to Neotel's network) in order to generate tariff-mediated network effects to exclude new entrants. The tariff-mediated network effects arise because of the existence of call externalities. Call externalities in this context arise where call recipients value receiving calls. If an incumbent network were to charge high prices for calls to a new entrant's network, then fewer calls would be made to the new entrant's customers, who value receiving calls, and are therefore more reluctant to switch to a new entrant's network in the first place. The incumbent at the same time maintains a high on-net / off-net price differential to reduce the attractiveness of the new entrant's network.

Hoernig (2007) further discusses the circumstances in which an incumbent can use high off-net tariffs as a predation strategy, to drive a new entrant's profits below zero. The incumbent

in this case sets an even higher off-net price in order to reduce the new entrant's call termination revenue, which is assumed to exceed the costs of call termination. The incumbent further charges lower fixed fees if competition occurs in two part tariffs.

Hoernig (2008) nonetheless suggests that the impact of regulatory interventions in the context of high off-net prices are ambiguous. This is because on-net / off-net differentials, and the consequent network effects they generate, intensifies competition in the short run, as discussed above. This effect needs to be weighed against the possibility of the exit of a new entrant in the long run. Furthermore, the outcome of Hoernig's (2008) analysis depends on the nature of demand, which is largely unknown by regulators. This means that a regulatory intervention into on-net / off-net differentials could improve or reduce total welfare.

### **3. Telkom's employment of tariff-mediated network effects in South Africa**

#### **(i) *Telkom's on-net discounts and call termination rates***

Telkom has used two means of exploiting tariff-mediated network effects. The first is the application of on-net discounts, whereby Telkom charges low rates for on-net calls relative to the call termination rate that Telkom charges. This is akin to 'margin squeeze' conduct, and is the focus of this section. Secondly, Telkom charges high rates for its customers to call other networks, which makes customers reluctant to switch to Telkom's rivals, given the high costs of calling new entrants' networks. This latter conduct is discussed in the next section.

As discussed above, absent any exclusionary objective, each fixed network operator has an incentive to minimise call termination rates. Unlike the position of mobile networks, who are able to extract high call termination rates from fixed networks (though these are passed back to consumers), fixed networks have historically not used high call termination rates charged to mobile networks to attract fixed customers. There is nonetheless a strategic reason for lowering call termination rates among fixed operators, which is to soften the competition that arises from tariff-mediated network effects, as discussed above. Absent an exclusionary incentive, fixed network operators have every incentive to maintain low call termination rates.

Nonetheless, it appears as though at least Telkom has maintained a relatively high call termination rate. ICASA, for example, recently found that a call termination rate of R0.10 per minute, where calls are handed over at the 'near end' (i.e. Telkom incurs the most of the costs possible in transmitting and terminating the call) would cover Telkom's costs. This is significantly lower than any of the call termination rates offered by Telkom or Neotel (see Table 1 below). Interconnection rates among fixed networks in South Africa are arrived at by a process of negotiation; they are not set by any regulator. Each fixed operator would like to interconnect with each other fixed operator as close as possible to the other operator's customers, so that the lowest price for call termination can be paid, and so that the voice

traffic is carried as far as possible on the originating operator's network. Currently in South Africa, the nearest point to each fixed operator's network's customers that interconnection takes place at is Within Billing Zone ('WBZ'). There are seven 'Billing Zones' in South Africa, which roughly correspond to the first two digits of the fixed geographic number dialling codes (01, 02, 03, 04, and 05). The '01' region is split into three regions, which is why there are 7 billing zones in total. All calls handed over within the terminating 'WBZ' area attract the same call termination tariff. If a call is not handed over in the terminating billing zone, then the Between Billing Zone ('BBZ') rate applies. The various call termination rates between Telkom and Neotel, the two largest fixed networks, are shown in Table 1 below.

	Neotel		Telkom	
	Peak	Off-peak	Peak	Off-peak
Within Billing Zone	0.20		0.23	0.12
Between Billing Zone	0.29		0.33	0.17

*Table 1: Within billing zone and between billing zone call termination rates*

A call termination rate, such as Telkom's WBZ rate of R 0.23 during peak times, forms a floor below which another operator, such as Neotel, cannot charge a lower rate for off-net calls to that network. If Neotel charged less than R0.23 for calls to Telkom's network during peak hours, each call to Telkom's network would be made at a loss for Neotel. On-net calls, such as a call from one Telkom customer to another Telkom customer, do not attract call termination charges, and so retail prices for on-net calls can be very low or even zero, without the operator in question making a direct loss. Telkom offers very low on-net calling rates, including rates that are effectively zero. Since almost all fixed line customers are on Telkom's network (Neotel has ported approximately 100,000 geographic numbers to its network, a small fraction of the total active geographic numbers), for any customer needing to choose a network, the overall costs of belonging to the Telkom network are cheaper than belonging to any other fixed network. This means that customers are reluctant to switch to networks such as Neotel's.

Telkom's on-net discounts have been very successful. Their flagship subscription consumer product, called 'Closer', has grown at a compound annual growth rate of 74% since its launch, which preceded the launch of Neotel's consumer services by approximately two years (See Table 2 below). These packages offer 'free' on-net minutes during peak hours, as well as free calls on weekends up to an hour (Option 1), and unlimited local and long distance calls, up to an hour, during off-peak hours (including weekends) (options 2 and 3).

	<b>Number of closer calling packages</b>
March 2006	71,317
March 2007	266,306
March 2008	451,122
March 2009	575,812
March 2010	647,462
Compound annual growth	73.58%

*Table 2: Growth of Telkom Closer calling packages, 2006 - 2010*

Telkom is therefore engaging in a successful on-net discount strategy that is increasingly effective in convincing consumers to stay with or join their network. Telkom is combining this on-net discount strategy, which relies on high call termination rates, with high off-net call charges, discussed next.

*(ii) Telkom's high off-net call charges*

Telkom charges very high off-net prices for calls to other networks, when compared with on-net calls. As described above, if customers value incoming calls (i.e. if 'call externalities' exist), then customers will be more reluctant to join a new entrant's network because the high prices of Telkom's off-net calls will mean fewer incoming calls for customers that join a new entrant's network. This can lead to the exclusion of new entrants. Nonetheless, the tariff-mediated network externalities that these on-net / off-net differences generate can however generate vigorous competition that ultimately benefits consumers. It is difficult to assess whether high off-net prices observed together with large on-net / off-net price differentials are likely to generate welfare reducing effects. Nonetheless, it is clear that Telkom is indeed engaging in a high off-net pricing strategy, combined with significant on-net / off-net discounts.

Telkom charges the same rate for all calls to Neotel numbers, whether they are local, regional or long-distance, at the same rate that it charges for national calls on-net (R 0.57 excl. VAT during peak hours). At the same time, Telkom charges R0.38 (excl. VAT) for local calls during peak hours (see Table 3 below). The 'on-net' discount for using Telkom for a local call is therefore 33%.

An analysis of Neotel's data shows that calls to local numbers really matter for consumers and business customers alike, and that customers are likely to feel the effects of Telkom's conduct. For example, between 33% and 75% of business customers' calls are local (see Table 3 below). Approximately 34% of consumer calls are local (see Table 4 below).

	<b>Local</b>	<b>Regional</b>	<b>National</b>	<b>Mobile</b>	<b>International</b>
Johannesburg	47.0%	5.1%	26.6%	19.7%	1.6%
Nelspruit	33.3%	14.7%	30.2%	21.6%	0.2%
Cape Town	39.1%	3.5%	32.3%	24.9%	0.2%
Port Elizabeth	62.1%	2.9%	22.8%	12.3%	0.0%
Durban	43.7%	5.2%	31.9%	19.1%	0.1%
Bloemfontein	32.8%	6.5%	42.5%	18.2%	0.0%
Customer A	74.5%	1.2%	7.1%	16.0%	1.30%

*Table 3: Percentage of outgoing call minutes from business customers on Neotel's network that are local, regional, national, mobile and international*

*Note: This is a snapshot of all on-net and off-net outgoing call minutes for many of Neotel's business customers, for March 2010.*

*Source: Neotel second submission to ICASA on call termination regulations*

<b>Type of call</b>	<b>Share of total call volumes</b>
Local on-net	2.1%
Local off-net	31.5%
<b>Total local</b>	<b>33.6%</b>
Regional on-net	0.1%
Regional off-net	6.30%
<b>Total regional</b>	<b>6.4%</b>
National on-net	0.2%
National off-net	7.6%
<b>Total national</b>	<b>7.80%</b>
Off-net	43.9%
Off-net	1.4%
Other	6.90%

*Table 4: Percentage of outgoing call minutes from CDMA customers on Neotel's network that are local, regional, national, mobile, international and other*

*Note: This is a snapshot of all on-net and off-net outgoing call minutes for Neotel's CDMA (largely consumer and SME customers), for June 2010.*

*Source: Neotel second submission to ICASA on call termination regulations*

#### **4. Possible remedies**

##### *(i) On-net discounts in the context of high call termination rates*

The best means of reducing the scope for exclusionary on-net discounts is to reduce the fixed call termination rate. Harbord & Pagnozzi (2010) recommend bill and keep arrangements, which take into account the benefits that call recipients receive from receiving a call. This is clearly one option to reduce the scope for tariff-mediated network effects via on-net discounts. However, bill and keep arrangements are rarely employed by regulators, and many call termination rate regimes, including the one proposed by ICASA, are cost based.

In a cost based framework, the lowest call termination rate possible is that available when interconnection takes place between two fixed operators as close as possible to each operator's customers. This is because much of the costs involved in providing voice services are the distance related costs of building a fixed network. In South Africa currently, interconnection among fixed networks takes place regionally. Neotel proposed in its submission during the course of the call termination hearings in 2010, that the closest feasible place that each operator can currently interconnect to each other operator's customers, rather than the regional interconnection arrangement that prevails currently, is inside of each of the 'ONN' local areas (011, 012, 013 etc.). There are 37 'ONN' local areas (see Figure 1 below).

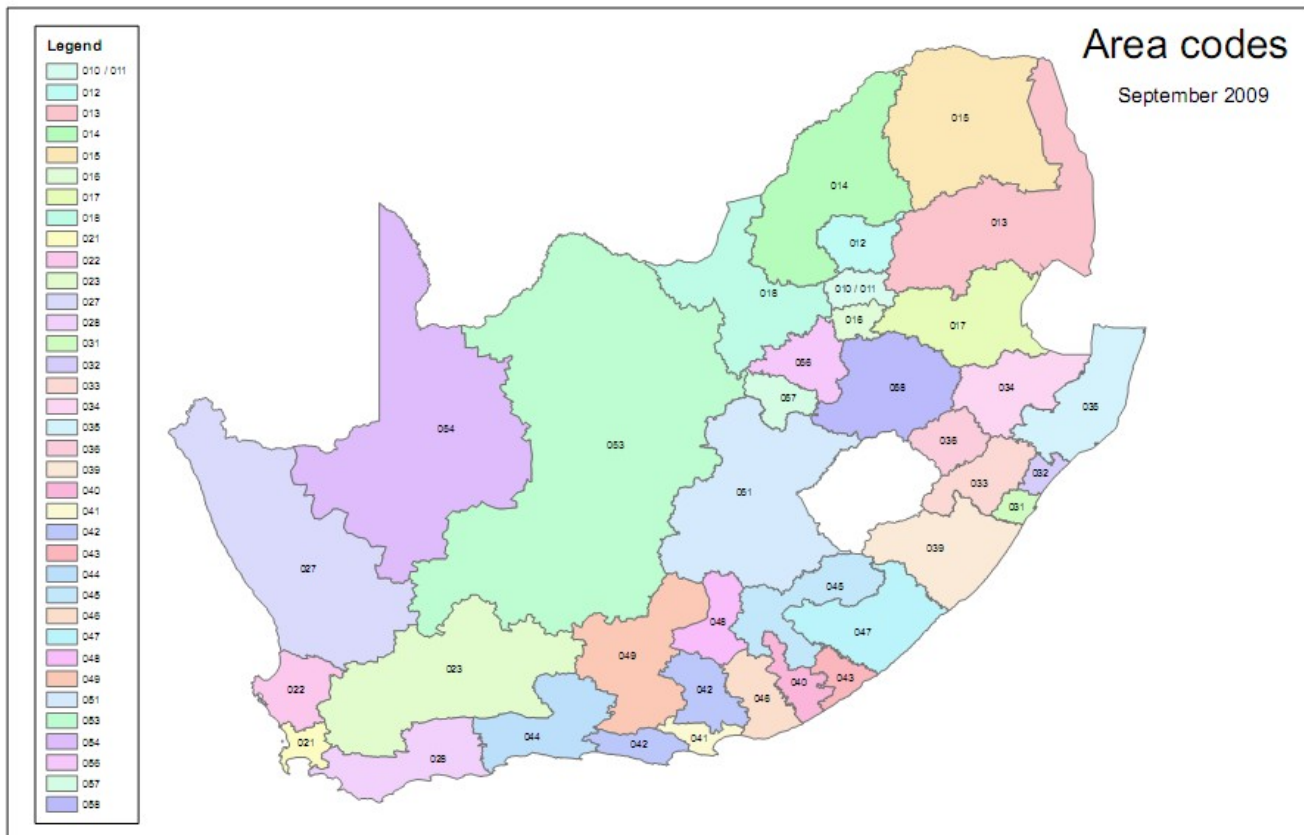


Figure 1: 37 '0NN' local areas in South Africa

At least Neotel and Telkom currently interconnect already in 7 of these '0NN' local areas in terms of the current interconnection arrangements. A further thirty point of interconnection links (“POILs”) would therefore need to be rolled out between Neotel and Telkom, and possibly more links would need to be rolled out between Telkom, Neotel and other operators. This would give rise to the lowest feasible interconnection rates. ICASA's recent draft regulations and explanatory note on call termination (ICASA, 2010) on the other hand appears to contemplate a single national cost-based call termination rate for calls terminating on Telkom's network, which will inevitably be higher than a call termination rate based on local ('within 0NN') call termination, due to the distance related costs that the termination of calls nationally involves. ICASA's proposed rate, which will be higher than under the local ('within-0NN') rate regime proposed by Neotel, therefore lends itself to on-net discounting and exclusionary tariff-mediated network effects.

There are other regulatory interventions that, for example, the competition authorities could impose, such as limiting on-net discounts. However, this has the effect in the short term of raising prices for consumers. In the long-term, nonetheless, consumers benefit from the

successful entry of new competitors, whose exclusion is prevented by the elimination of on-net discounts. These two effects would need to be weighed against one another by competition authorities.

Finally, another potential solution arises from historical interconnection agreements between the mobile operators (MTN, Vodacom and Cell), and Telkom. The mobile operators in previous interconnection agreements each agreed with Telkom that neither party would offer a retail tariff that was below the agreed call termination rate.<sup>7</sup> This was intended to prevent on-net discounting. However, this has the effect of limiting competition between operators, at least in the short term. Such an agreement therefore might be construed by a Competition Authority as an anti-competitive horizontal agreement among competitors. At the same time, such an agreement would enable entry, and could be construed as being pro-competitive.

These three potential solutions (regulating call termination rates, banning on-net/off-net discrimination, and using interconnection agreements to preclude on-net/off-net discrimination) are not mutually exclusive. The theoretical literature, as summarised in Armstrong & Wright (2009) and Harbord & Pagnozzi (2010), suggests that some intervention in respect of lowering call termination rates is often warranted. This means that regulatory intervention in bringing down call termination rates should be the starting point for any resolution of tariff-mediated network effects generated by on-net discounting. It is less clear whether further interventions, such as limiting on-net discounts by regulation or agreement, should be implemented or accepted by regulators. Regulators need to trade-off lower prices as a consequence of tariff-mediated network effects in the short-run, and the risk that new entrants will be excluded in the long run.

#### *(ii) High off-net prices that generate tariff-mediated network effects*

The mobile operators historically forced Telkom to set maximum rates for calls to their networks. It is not clear whether this was to prevent Telkom charging favourable off-net rates to Vodacom, which Telkom owned 50% of, or whether the mobile operators were concerned with maximising incoming call revenues. Either way, in their 2001 interconnection amendment agreements, Telkom agreed with MTN and Cell C that Telkom would offer at least one product for which their retention rate (Telkom's retail rate less the relevant call termination rate) would be R0.33 (peak) and R0.20 (off-peak).<sup>8</sup> This gave rise to a maximum off-net fixed to mobile calling rate. New entrants like Neotel in the fixed market could consider imposing

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7 See section 4.1.3 of the 2001 amendment to the MTN / Telkom interconnection agreement, available at: <http://www.sec.gov/Archives/edgar/data/1214299/000120561303000008/0001205613-03-000008-index.htm> (see exhibits 10.6, 10.7 and 10.8 ), last accessed on 17 August 2010.

8 See section 4.1.2 of the 2001 amendments to the Telkom/ Cell C, and Telkom/ MTN interconnection agreements, section available at: <http://www.sec.gov/Archives/edgar/data/1214299/000120561303000008/0001205613-03-000008-index.htm> (see exhibits 10.6, 10.7 and 10.8 ), last accessed on 17 August 2010.

maximum calling rates for incoming calls from Telkom to their networks, so as to reduce the potential exclusionary effects of the tariff-mediated network effects that Telkom's high off-net rates give rise to.

Hoernig (2008) points out that limiting tariff-mediated network effects in the short run harms consumers, who have to pay higher prices. Similar to the case discussed above in respect of on-net discounting, this means that agreeing to a maximum off-net rate could be a contravention of competition law, in that it is an agreement among competitors that limits price competition. Nonetheless, using a maximum off-net tariff in an agreement, in the long run, could result in pro-competitive effects, to the extent that consumers benefit from the successful entry of new competitors. Again, therefore, these two effects would need to be weighed by regulators.

An alternative solution is that, in theory at least, ICASA could set a price cap on Telkom's calls to other fixed networks' geographic numbers. However, Telkom's retail voice tariffs are currently regulated by means of a price cap on a basket of services.<sup>9</sup> Regulating one of Telkom's retail tariffs would be a substantial deviation from this policy. Direct tariff regulation therefore is not a likely policy response to high off-net prices.

## **5. Conclusion**

Telkom's high call termination rates for calls terminated on its fixed network, combined with on-net discounts, and high off-net prices to other networks, mean that new entry into the South African fixed telecommunications sector is likely to be very difficult indeed. Nonetheless the tariff-mediated network effects generated by Telkom's conduct will likely result in low prices for consumers, at least in the short-term. There is a risk that in the longer term, new entrants such as Neotel might be excluded, to the detriment of consumers.

There are several possible solutions to eliminate the tariff-mediated network effects generated by Telkom's conduct. The first, and least ambiguous in terms of bringing about a positive welfare outcome, is to reduce the fixed call termination rate. ICASA should implement the lowest possible cost fixed call termination rate regime, which is by allowing operators to interconnect with one another as close as possible to each other's customers. ICASA's current fixed interconnection rate regime does not facilitate this.

The second and third possible solutions to ameliorate the effects of Telkom's conduct are: for a regulator (either the competition authorities or ICASA) to ban or reduce on-net/off-net price differences, and to set maximum off-net calling prices for calls from Telkom's network; or allow new entrants and Telkom to bring about the same result through interconnection agreements.

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<sup>9</sup> Telkom's retail tariffs are regulated in terms of Government Gazette 27772, Notice No. R. 675, published on 6 July 2005.

The welfare effects of these latter two interventions are less clear cut than reducing call termination charges. Regulators essentially need to weigh up having lower prices for consumers in the short-term, against the risk that new entrants will exit in the long term, to the detriment of consumers.

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