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# Enhancing Performance in Telecommunications to Improve Rwandan Competitiveness

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Rwanda has seen explosive growth in mobile telecommunications over the past decade. Uptake of mobile communications has grown from less than 100,000 subscribers in 2003 to more than 4 million today, with annual growth in the market in the double digits for most of the past decade. Products offered in Rwanda are now in line with those available in the most developed markets of the EAC, and prices have declined substantially.

The market for mobile telephony is currently served by two firms. The dominant firm, MTN, holds a market share of 67% as measured by the number of simcards, but its market share in minutes of usage is only marginally above 50%. Despite this, MTN manages to capture a very high percentage of voice telephony revenue, with rough estimates putting its share above 70%. Fixed line telephony, operated by Rwandatel, makes up less than 1% of all subscribers. The Internet service provider (ISP) market is much less concentrated, with six operators currently operational and another three due to begin.

Rwanda Utilities Regulatory Authority (RURA) has played a crucial role in the performance of the industry. RURA has demonstrated its willingness to follow the international precedent of intervening on mobile termination rates (MTR's) – the prices that a mobile network operator must pay to another operator to connect a call that 'terminates' on the latter's network – to improve the competitiveness of the market and reduce barriers to new entrants. Innovative legislation on infrastructure has enabled much quicker expansion of coverage by new operators, making efficient use of resources and protecting the environment. In addition the recent licencing of Bharti Airtel, renowned for aggressive price competition, will contribute to making the sector more competitive.

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## WANING COMPETITION

Nonetheless, there is some evidence that the market is not currently functioning as competitively and efficiently as it might. One symptom of weakened competition is the fact that in nominal terms, Rwanda's tariffs have increased substantially through 2011, beginning immediately after the exit of Rwandatel. MTN tariff hikes have come in the form of removing 30% airtime bonuses, with Tigo increasing on-net tariffs by 50% in September. This runs contrary to trends across the EAC and despite tariffs in Rwanda remaining considerably higher than those of EAC price leaders, Kenya.

A second symptom of weakened competition is that MTN remains the dominant operator, despite peak on-net prices three times those offered by Tigo as shown in Table 1. If Tigo's on-net prices represent pricing at close to - the competitive frontier then MTN is essentially extracting rents of RWF30 per minute of on-net call. At consumption levels of the second quarter of 2011, this is estimated to amount to additional charges of approximately RWF9bn, around 1% of GDP[1] - a substantial premium that Rwandan consumers are compelled to pay. The rents per minute borne by consumers from off-net call prices of RWF90 (both operators) are even higher, which has led to a near breakdown of off-net traffic – the most recent figures show that off-net traffic is less than 1% of the total, and falling.

**Table 1. Domestic voice tariff structure - October 2011**

| | TIGO | MTN |
|---|---|---|
| Voice, On-Net, Week | 15 | 45 |
| Voice, On-net, Weekends | 15 | 33 |
| Voice, On-net, happy hour | 3 | 9 |
| Voice, Off-net | 90 | 90 |

*- MTN happy hour is from 12am-5am. Tigo happy hour is from 11pm-7am.*

*-On-net prices for both operators have been labeled promotional across the whole of 2011, lending little credence to their status as 'promotional'. This is despite regulation introduced by RURA in 2011 limiting the length of promotional tariffs.*

While Tigo has almost doubled its subscriber base over the past six months, anecdotal evidence from the press (including statements from MTN)[2] suggest that these new subscribers are predominantly in the form of dual simcard holders as opposed to new or switching users. The rise of dual simcard use together with over 99% of traffic remaining on-net is an indicator that price-savvy consumers are starting to treat the incumbent operators as complements rather than substitutes – a third symptom of flagging competition in the market.

## PRICING THAT RESTRICTS COMPETITION

Differential on/off-net calling charges (sometimes known as network- based price discrimination) have received attention in the academic and policy literature as a tool of anticompetitive pricing behaviour (see Haucap and Heimeshoff (2011)). Dominant operators can use tariffs plans of this type to take advantage of their large market share to substantially reduce price competition. This is because of 'network effects' which lead consumers to choose their operator based on the number of other subscribers on that network (to take advantage of cheaper on-net calls). Table 2 shows the off-net premium currently charged by the dominant mobile network operator's during peak hours across the EAC[3]. The unusually large differential in Rwanda is another symptom (closely related to that of dual simcard use) of reduced competition in the sector[4].

**Table 2. EAC Dominant operators on/off-net tariffs in USD**

| | on-net | off-net | off-net premium |
|---|---|---|---|
| MTN Rwanda | $0.075 | $0.150 | 100% |
| MTN Uganda | $0.096 | $0.096 | 0% |
| Safaricom Kenya | $0.027 | $0.034 | 25% |
| Vodacom TZ | $0.077 | $0.116 | 50% |

*- All tariffs obtained from operator websites as of October 2011*

Several regulators around the world have chosen to respond to high on/off-net pricing differentials with direct regulation (e.g. Turkey, Singapore, Kenya). In many cases (including all of the examples cited) this kind of regulation has been introduced as a temporary measure until the market is considered to be 'sufficiently competitive' – Singapore for example removed its ban on on-net/off-net pricing in 2005, citing that the market was now competitive enough (CTMG, 2011).

On/off-net pricing strategies are closely linked to the level of MTR's[5]. This is because setting the off-net rate below the MTR would result in a loss for the originating network, so the MTR can effectively act as a price floor for off-net calls. A large number of regulators, including many across the European Union, have chosen to focus on regulation of MTR's, leaving retail tariffs unregulated. A strong body of empirical evidence has emerged to suggest that lowering MTR's tends to result in falling retail tariffs (see Growitch et al (2010), Harbord and Pagnozzi (2010), Stork (2011), CCK (2011)). Although falling MTR's have generally been correlated with declines in on-net/off-net pricing differentials, CTMG (2011), reviewing international evidence argues that in many cases MTR regulation alone has proved to be insufficient to eliminate anticompetitive use of these differentials. Thus, even where effective MTR regulation is put

[1] This is calculated with the usage figures published by RURA, some conservative assumptions on distribution of calls across the three month period and the peak/weekend distribution. The IMF forecast of GDP for 2011 is used to estimate quarterly GDP.

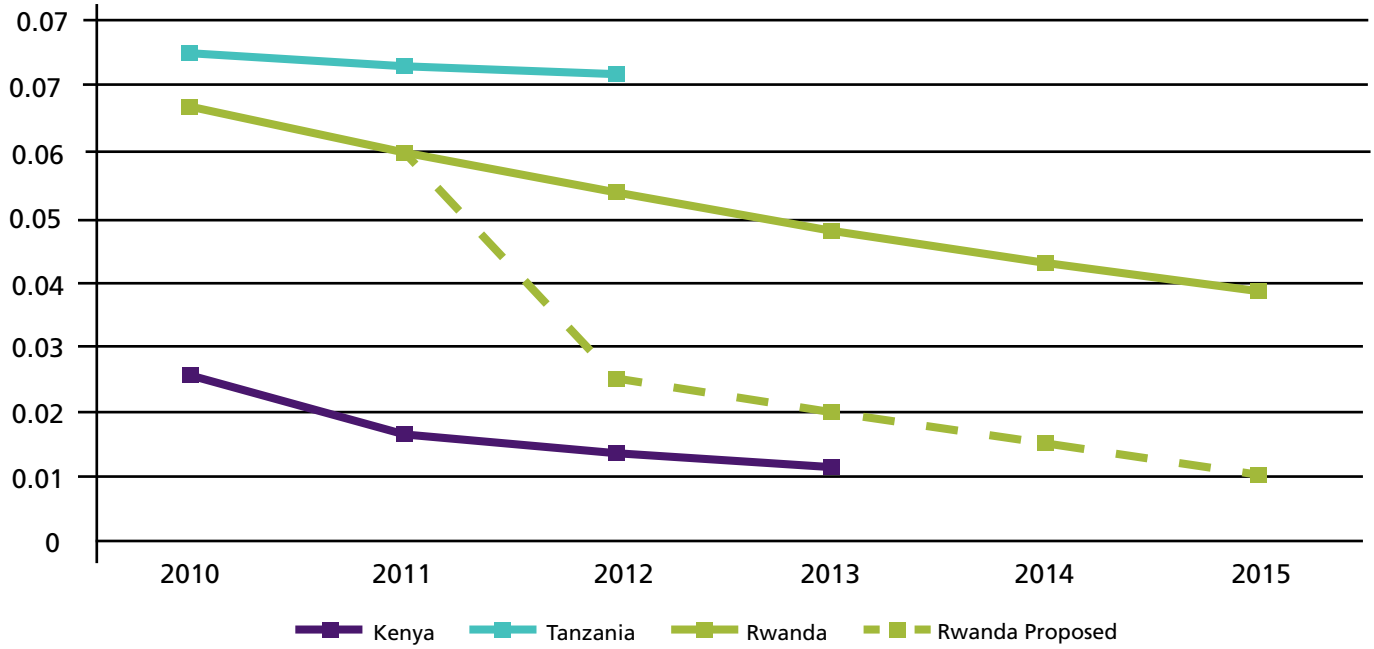
[2] See article online at http://allafrica.com/stories/201108300870.html

[3] Burundi has been excluded due to lack of publicly available data.

[4] Incidentally the lack of a differential in Uganda is misleading as it masks a collusive market with an ineffective regulator.

[5] Mobile termination rates are the prices that a mobile network operator must pay to another operator to connect a call that 'terminates' on the latter's network (e.g. the cost that MTN must pay to Tigo to connect a call from an MTN subscriber to a Tigo subscriber).

Figure 1: Termination Rate Glide Paths (USD)




in place, it may still be of value to introduce at least temporary regulation on on/off-net tariffs, especially in markets where a single firm has a dominant position.

## TARIFF REGULATION IN RWANDA

In September 2011, RURA, making reference to the industry 'best-practice' of a glide path to lower MTR's moved to cut MTR's from RWF40 to RWF35.79, setting a glide path down to just over RWF22 by 2015. The move, motivated by a PWC study[6] commissioned by RURA, was strongly supported by Tigo and imminent entrant Bharti Airtel in the press. Previous comments in the press by mobile operators predictably showed MTN opposing reductions in MTR's, with Tigo lobbying strongly in favour.

Figure 1 shows the current glide paths of regulated MTR's in Kenya, Tanzania and Rwanda. RURA is ahead of most of the EAC in terms of MTR regulation, particularly Uganda where regulation is been impeded by legislation that has allowed MTN Uganda to block it through the courts. However, even by 2015, Rwanda's MTR's are due to remain at least twice those of Kenya, the regional reference point, despite considerable circumstantial evidence to suggest that actual MTR's are much lower[7].

## REGULATORY INTERVENTIONS TO ENHANCE COMPETITION

The entry of Bharti Airtel, renowned for its aggressive pricing, provides a unique opportunity to drive prices down, something that is likely to have substantial impact on mobile penetration rates. To take full advantage of this opportunity, RURA could consider moving decisively to push the current glide path downward. Reducing MTR will have a direct impact on on/off-net price differentials thereby improving competition and strengthening the chances of achieving the ambitious goal of reaching 60% mobile penetration by the end of 2012. This could be done through a large cut effective in January 2012, followed by a slightly more ambitious glide path going forward (see proposed in figure 1).

The recent move by RURA to regulate promotional practices by operators represents a step towards more transparent marketplace –particularly important in a context of relatively low financial literacy. Restrictions requiring operators to prove sufficient capacity to handle changes in network traffic from these promotions were a wise pre-emptive step to avoid the network breakdowns suffered in the past relating to such promotions in other countries (e.g. Kenya).

RURA's biannual reports have developed to offer a great deal of information already. This could be further improved with the publication of more detailed information on consumption of services (in minutes) across operators, allowing researchers to conduct more sophisticated analysis of the performance of the sector.

Number portability is an issue that has received some attention in the press. While number portability was previously planned for 2012, it has been put on hold in response to lobbying from MTN for more mobile penetration. However, contrary to arguments by MTN, number portability does not slow mobile penetration;

[6] The study is not in the public domain.

[7] It seems hard to believe that true MTR's could actually exceed the on-net tariffs currently charged by Tigo (RWF15 per minute). Current MTR's are set above the cost of calling Europe from Tigo - RWF30/min.

if anything the reverse is true. A subscriber moving between operators leaves mobile penetration unchanged and more direct competition for subscribers between mobile operators is likely to put downward pressure on tariffs, increasing mobile penetration. It is also one more step in the direction of forcing operators to compete directly[8] – as opposed to schemes encouraging dual simcard for example.

## COMPETITION ACROSS THE EAC

The East Africa Regulatory, Postal and Telecommunications Organisations (EARPTO), which has since been renamed the East Africa Communication Organisation (EACO), published "Guidelines on Interconnection and Access for Telecommunications Networks and Services within the Telecommunications Networks and Services within the East Africa Community". EACO has not as yet been brought into the legal framework of the EAC, but its directives are supposed to guide all of the national regulatory authorities.

These guidelines establish overriding principles of telecommunications regulation for National Markets, as well as addressing the issue of cross-country mobile termination rates. Similarly to the domestic situation, MTR's are likely to have considerable influence on cross-country retail tariffs. The difference in the cross border situation is that operators from one-country cannot compete directly with those of another as they lack the infrastructure, necessitating interconnection agreements across borders. As the EAC telecommunications market matures, the development of EAC wide MTR regulation will be crucial to moving towards a more integrated, and ultimately more competitive market.

## SUMMARY: POLICIES TO IMPROVE SECTOR PERFORMANCE

In summary, four policies that could help to ensure that the Rwandan market continues to achieve impressive growth in penetration and consumption of mobile telecommunications services include:

- RURA could consider accelerating the current glide path of mobile termination rates to make faster transition towards the regional reference point - and thus harness the full competition-boosting opportunity provided by the entry of Barti Airtel in 2012.
- RURA could introduce temporary regulation to limit the on-net/off-net pricing strategy being employed by incumbent operators. A substantial cut to mobile termination rates may reduce the need for such direct price regulation, but in the short term this will support increased competition in the sector.
- In the medium term, introducing number portability will reduce switching costs, increasing direct competition between operators.
- In the longer term, working with the EACO to push cross-border MTR's downwards will help to improve the competitiveness of the sector across the region, supporting progress towards a more integrated market.

[8] Assuming adequate reform in mobile termination rates. If mobile termination rates remain high, supporting large on-net/off-net differentials, consumers may actually be harmed by a move to number portability, as it would no longer be possible to be certain which network a number is associated with. Hence, it would not be clear to the consumer whether a call would be charged at on-net or off-net rates.

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