

# The Future of Broadband in Africa

While the developed world discusses the merits of fixed and mobile broadband, it is clear that for Africa, fixed broadband in the form of fibre to the home, or even just plain ADSL, will only reach very few urban elites in the next decade. In Africa, mobile voice overtook fixed voice at the turn of the millennium with the introduction of prepaid services. Ten years later, mobile Internet is rapidly overtaking fixed Internet by overcoming key obstacles to fixed Internet access. Mobile Internet requires fewer ICT skills than are required to operate a computer, hardware and subscription cost are less, it is available as prepaid, and it does not even require electricity at home, something the majority of African households still struggle to access. If fixed Internet is provided as an uncapped service at an affordable price, it has a chance to at least co-exist with mobile broadband in Africa. Fixed-line telecommunication companies would be well advised to focus on data only, before mobile operators do.

## Future of Broadband in Africa

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### Internet going mobile

Although Internet penetration in most countries is still very low, most of Internet users first used the Internet on a mobile phone and the mobile phone is the most frequently used device to access the Internet.

### Fixed BB too slow and too expensive

Fixed-line operators need to invest in the new technologies, such as VDSL2 and fibre-to-the-home if fixed broadband is to stand a chance against mobile broadband. Prices also need to come down, which can only be achieved through economies of scale.

### Forget fixed and go mobile all out?

The voice battle between residential wired and mobile was lost in Africa in the last decade. Whether fixed-line operators will also lose the data battle will be determined by their business decisions in the next two to three years.

### Fixed line operators need to revise their strategies.

Going mobile or corporate only may be profitable but not the best for the country. Other options exist that may even be more profitable such as replacing voice with data only services or funding fibre to the home roll out with premium TV content revenues.

### Regulations needs to refocus

Carrier pre-selection and local loop unbundling will not increase competition as new operators will not enter a market in decline. A national backbone as a separate business based on open access principles may remove the biggest competitive bottlenecks in Africa at present.

## Introduction

Internet use has increased in Africa. While the first wave of Internet adoption rode on the back of desktop computers at the workplace, schools and universities, or public access facilities such as Internet cafes, the second wave is sweeping across Africa through the use of mobile phones. Although Internet penetration in most countries is still very low, more than 70% of Ugandan and 67% of Ethiopian Internet users first used the Internet on a mobile phone. In Tanzania, Namibia and Nigeria, about half of the population first used the Internet on a mobile phone. The growing importance of the mobile phone to access the Internet is also emphasised by where the Internet was used in the last 12 months. Either complementarily to computer access or exclusively, above 80% of Internet users in Namibia, Uganda and Ethiopia access the Internet via a mobile phone. For South Africa, Kenya, Nigeria, Tanzania and Rwanda, 70% of Internet users access the Internet with a mobile phone. In most

countries, besides Cameroon and Ghana, the mobile phone has overtaken the Internet cafe, historically the most common way to access the Internet in African countries.

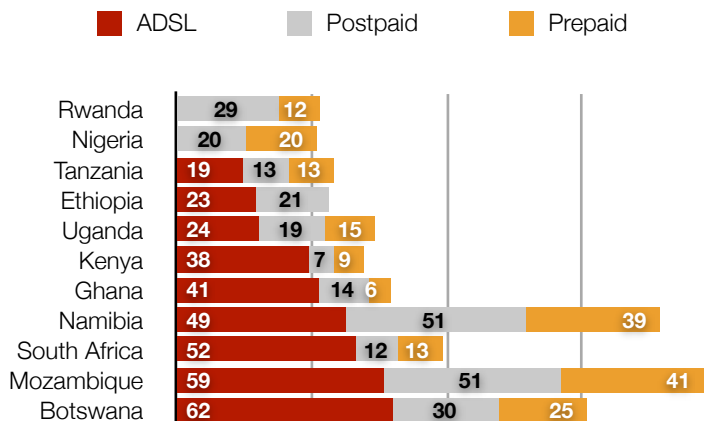
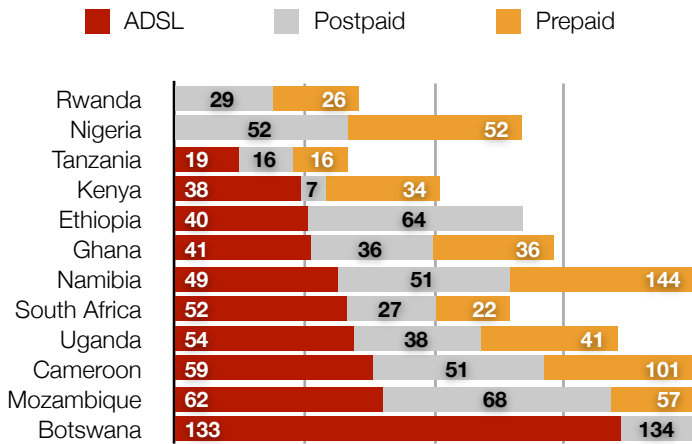


Table 1: Individual Internet use 15+	% that use the Internet			Where the Internet was first used		Where the Internet was used in the last 12 months				
	2007/8	2011/12	Growth	Computer	Mobile phone	Mobile phone	Work	Place of education	Another person's home	Internet Cafe
South Africa	15.0%	33.7%	125%	65.1%	34.9%	70.6%	35.8%	20.9%	14.3%	32.4%
Botswana	5.8%	29.0%	400%	70.6%	29.4%	64.1%	51.1%	32.2%	43.7%	58.3%
Kenya	15.0%	26.3%	75%	68.9%	31.1%	77.8%	31.4%	38.8%	38.9%	72.4%
Nigeria		18.4%		45.2%	54.8%	74.9%	29.3%	19.6%	30.3%	45.1%
Namibia	8.8%	16.2%	84%	50.1%	49.9%	87.3%	48.4%	36.0%	32.6%	22.5%
Cameroon	13.0%	14.1%	8%	82.1%	17.9%	29.7%	9.8%	20.1%	18.7%	80.0%
Ghana	5.6%	12.7%	127%	70.5%	29.5%	61.2%	34.6%	50.9%	34.5%	84.7%
Uganda	2.4%	7.9%	229%	28.2%	71.8%	81.3%	55.0%	51.2%	54.0%	74.0%
Rwanda	2.0%	6.0%	200%	70.8%	29.2%	70.9%	52.1%	30.7%	24.9%	50.2%
Tanzania	2.2%	3.5%	59%	45.8%	54.2%	74.7%	44.6%	24.4%	23.9%	62.8%
Ethiopia	0.7%	2.7%	286%	33.3%	66.7%	80.9%	17.4%	20.9%	3.5%	42.2%

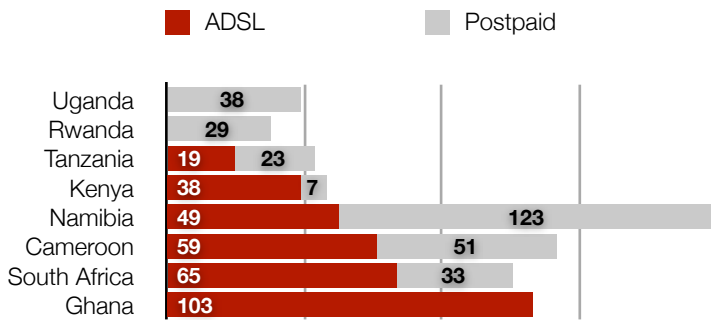
**Figure 1: 1GB per month basket. Cheapest products (in USD per month) available in each country.**

**Cost of Broadband**

Prepaid mobile is cheaper overall than post-paid mobile broadband or ADSL for the 1 GB basket. For the 5GB basket the balance shifts slowly to postpaid mobile for Kenya, Namibia, Uganda, Cameroon and Botswana. For uncapped baskets ADSL is still attractive for Tanzania, Namibia. For South Africa, Kenya, Rwanda and Uganda post paid mobile is either cheaper or the only option.



**Figure 2: 5GB per month basket. Cheapest products (in USD per month) available in each country. Botswana prepaid mobile not displayed: 381.1 USD**



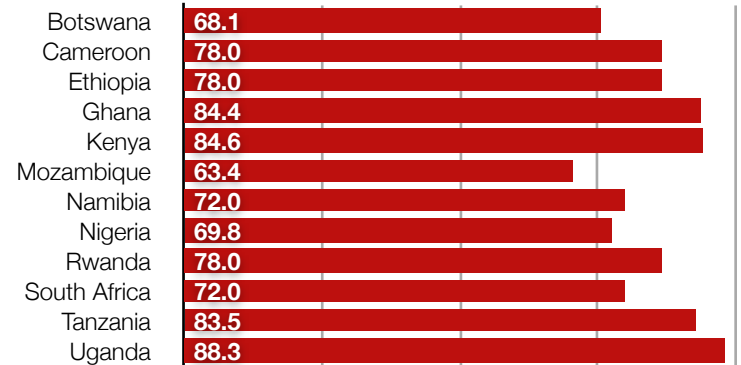
**Figure 3: Uncapped per month basket. Cheapest products (in USD per month) available in each country.**

**Business strategies for fixed-line operators**

Fixed-line operators need to invest in new technologies, VDSL or fibre to the home, if fixed broadband is to stand a chance against mobile broadband. The response of fixed-line incumbents is often to change tack and offer mobile services rather than investing in fixed broadband infrastructure. However, other options exist that may be even more profitable. More importantly, these options would also be more beneficial in terms of broader economic development goals and hence should attract the attention of policy makers, given that most of the fixed-line incumbents are still state owned.

From a development policy point of view, the least desirable option would be for African fixed-line operators to focus on the corporate market only, a strategy already adopted by some incumbents but also by new entrants such as Neotel in South Africa. While this may be a profitable strategy, it leaves the residential market to mobile operators, hence reducing competition.

An alternative for fixed-line operators would be to focus only on data services through flat rate pricing, and ignoring traditional voice revenues altogether. Such a next generation business model could prove to be profitable. Converting all existing fixed-lines into data lines would increase broadband penetration drastically in Botswana, Namibia and South Africa. These countries already have a sizeable fixed-line penetration. Flat rate pricing also solves the billing problem, which mobile operators are good at but fixed-line incumbents are not.



**Figure 4: DSTV Premium Package in USD per month**

A further option is to aim at premium content TV and replace copper with fibre. Fibre to the home (FTTH) may be able to compete if it can match satellite TV content-wise. Figure 4 displays monthly subscriptions in USD for the 12 countries analysed in this paper. DSTV is virtually unchallenged in Africa and has a factual monopoly in, for example, South Africa and Namibia. The competition for premium TV content would also reduce prices, bringing them closer to European levels instead of the current USD80+ commanded by DSTV. This in itself has a positive impact for consumers. Current prices can thus not be used for a break-even analysis of FTTH. However, an average ARPU of USD50, offering premium content and uncapped fast Internet may be enough for FTTH to be a profitable venture, at least for metropolitan areas. FTTH is likely to offer faster and better Internet access to households than mobile broadband.

**Conclusions**

The voice battle between residential wired and mobile was lost in Africa in the last decade. Whether fixed-line operators will also lose the data battle will be determined by their business decisions in the next two to three years. Wired broadband is losing ground quickly to mobile broadband in Africa. Fixed-line operators mostly offer ADSL, which can no longer compete with mobile broadband speeds.

Fixed-line operators need to invest in new technologies such as VDSL or fibre to the home, if fixed broadband is to stand a chance against mobile broadband. There is no time to wait, and merely jumping on the mobile bandwagon may not address longer term connectivity issues that face Africa nor be the most profitable avenue to take.

Carrier pre-selection and local loop unbundling will, for most African countries, not increase competition by much as new operators will not want to enter a market which is partially dying. Structured separation, and making the national backbone a separate business based on open access principles may remove the biggest competitive bottlenecks in Africa at present.

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