

# Mobile Internet as the Key Driver to Internet Growth in Kenya: Underpinning Factors

*Mobile Internet, which provides high-speed access to the Internet and other data services over mobile networks and phones, has changed the way people across the globe access the Internet. Generally, mobile Internet is used for communication, entertainment and information access purposes. It provides data and information services, such as location-based services (GPRS), mobile search and browsing, and mobile health monitoring, among others. In Kenya, mobile data/Internet subscriptions are currently dominating the Internet market as per the statistics from the Communication Commission of Kenya (2013). Of the Internet users, 99% use mobile connectivity either directly via their mobile phones or by use of mobile connectivity devices. By March 2013, there were 16.4 million Internet users countrywide. Factors promoting mobile Internet as the key driver to Internet growth in Kenya are environmental which includes infrastructure deployment, competition and market forces, different packages of data bundles that accommodate diverse income groups, cost of handsets and supportive regulatory and policy conditions. In addition, personal factors that include demography, preferences and perceptions have a considerable influence on the growth of mobile Internet in Kenya.*

Policy Brief

September 2013

## Infrastructure Deployment

Massive infrastructure deployment has expanded the mobile network to urban and rural areas leading to wider mobile adoption. Mobile Internet offers mobility and convenience to users with flexible infrastructure demands, such as electricity.

## Reduced prices due to Competition.

Competition and market forces have been key drivers not only for mobile growth in Kenya, but mobile Internet. Operators have devised innovative products to enhance their competitive edge.

## Policy and regulatory environment.

The policy and regulatory environment have been conducive for innovation, encouraging healthy competition among the various operators and players. This has led to faster growth in the mobile sector.

## Demographics, Preferences and Perceptions.

Income, education, age, and gender has been seen to influence use of technology. Perceptions and preferences inform the choice made in relation to use of mobile Internet. What one perceives is a result of interplays between experiences.

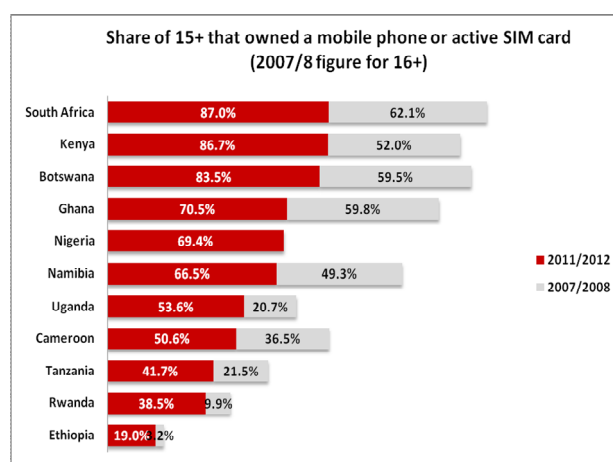
## Introduction

Mobile Internet is defined as the use of the Internet via hand-held devices such as mobile phones, smart phones and personal digital assistants (PDAs). Access via laptops connected through data modems (dongles) provided by the mobile operators is considered mobile Internet too. Primary and secondary data sources have been used. The primary data was collected in 2011/2012 as part of a multinational study focusing on 11 African countries referred to as RIA (2011). The Kenya survey was conducted in September 2011 with the sample consisting of 1,200 households. The paper also uses previously collected data in 2007/8 for trend analysis referred to as RIA (2007).

## Mobile Internet in Kenya

Statistics from the Communication Commission of Kenya (CCK Q3, 2013) show that mobile data/Internet subscriptions dominate the Internet market contributing 99% of the total Internet subscriptions with 16.4 million Internet users countrywide as at March 2013. This represents 38.9% increment from the 11.8 million reported in March 2012. The statistics show that there are currently 9.6 million Internet subscriptions.

The total used international Internet bandwidth stands at 307,307Mbps out of the total available bandwidth of 921,303Mbps meaning that only 33.4% of the total available bandwidth capacity is being utilised (CCK Q3, 2013). This is a reduction from the previous quarter where 36.3% of the total bandwidth was being utilised.



Source: RIA (2007 & 2011) Surveys

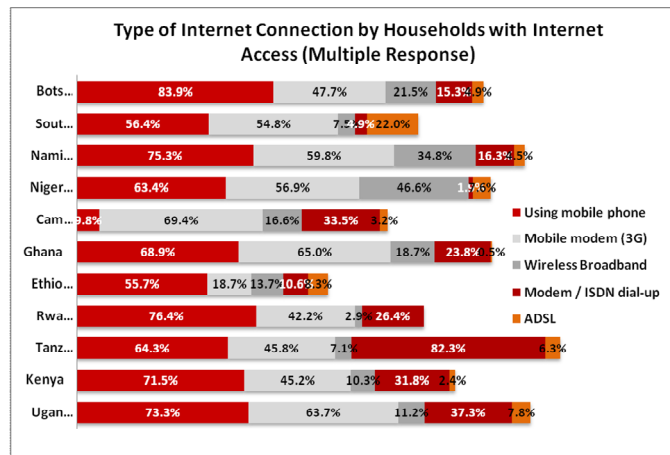
There has been an increase in ownership of mobile phones or SIM cards (see Figure 1). While only 52% of the respondents in Kenya who were above 15 years had either a mobile phone or an active SIM card in 2007/8, 86.7% had in 2011/2012, representing an increase of 34.7%, the highest increment. South Africa is leading in both surveys with 62.1% and 87% respectively while Ethiopia is last with 3.2% and 19% respectively.

In relation to Internet usage, 15% of the Kenyan population above 15 years old was using the Internet according to the 2007/2008 survey while in 2011/2012 the usage had risen to 26.3%.

Figure 1: Mobile phone ownership and SIM card

Further, 77.8% of the respondents indicated that in the 12 months leading to the study, they had used Internet via their mobile phones. A high percentage of the Internet users connect directly via their mobile phones. Botswana has the highest at 83.9%, followed by Rwanda at 76.4%, Uganda at 73.3% and Kenya at 71.5%. Apart from Cameroon, over 50% of the respondents in the other countries access the Internet via the mobile phone (see Figure 2).

Figure 2: Mode of Households' Internet Connections



Source: RIA (2011)

## What Factors Influence Usage of Mobile Internet in Kenya?

Environmental and personal factors influence the use of mobile Internet in Kenya. Mobile Internet offers mobility and convenience to users with flexible infrastructure demands, such as electricity. Accessibility, availability and affordability of mobile Internet is affected by environmental factors such as infrastructure, tariffs, competition, cost of handsets, regulation and policy interventions. These factors directly affect the use of mobile Internet and influence personal factors such as demography, preferences and perceptions. The environmental and personal factors are discussed in the next section.

## Environmental Factors

### Communications infrastructure

Kenya has seen considerable increase in investment in the mobile sector, which has helped to finance growth of technology infrastructure and improve the provision of mobile services. The Government has enshrined development of infrastructure and the ICT sector as part of the country's goals as stated in its Vision 2030 blueprint (GoK, 2007). In the last five years, three undersea fibre optic cables were completed and operationalised. In addition to the undersea fibre cables, which have facilitated global interconnection of the country, the completion of the first phase of a national fibre infrastructure, referred to as the national fibre optic broadband infrastructure (NOFBI), has provided connection within the country, ensuring wider mobile network coverage.

### Competition and market forces

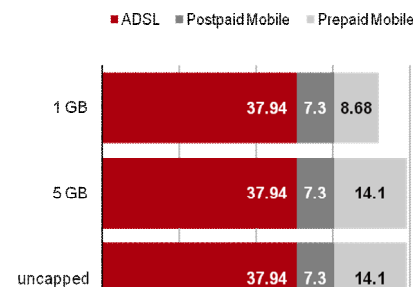
Competition and market forces have been a key driver not only for mobile growth in Kenya, but mobile Internet. All the four

operating mobile operators (Safaricom, Orange Kenya, Airtel and EssarYu mobile) had mobile Internet services at the beginning of 2013. The operators have devised various packages to entice the customers and keep them within their network. The cost of mobile phone handsets with Internet access capability has come down too.

Kenyan are using feature phones with Internet capability to access the Internet instead of expensive smartphones, such as the blackberries and iphones. Emergence of cheap Internet enabled mobile phones is playing a role to the wide usage of mobile Internet. Mobile cloud computing applications such as mobile Gmail and Google maps are becoming widely used in Kenya and have enabled feature phones to be used for mobile Internet. In addition, promotions ran by operators offer reduced costs to handsets that have the capability to access 3G services, leading to rapid growth of mobile Internet.

Competition and promotions have also led to a reduction of bundle prices in the last five years. The cost of 1.5GB Internet bundle from Safaricom which is perceived to be relatively expensive than the other operators is currently Ksh. 1000 (about US\$ 11.5). This is half the price of the same bundle in 2009. Considering that over 99% of the users are on prepaid, they are on pay-as-you-go Internet plans taking advantage of offers to use mobile Internet sometimes for free. Nevertheless, postpaid data bundles are relatively cheaper than prepaid bundles (see Figure 3).

Figure 3: Comparing the monthly cost of a 1Gb, 5GB and an uncapped user basket in USD for all operators in Kenya, displaying only the cheapest available



Source: Stork et al (2013)

### Policy and regulation

Kenya ICT policy work is led by the ICT State Department or Ministry while the Communication Commission of Kenya leads the regulatory work. The policy and regulatory environment have been conducive for innovation and encouraged healthy competition among the various operators and players. Existing policy and regulations promote and encourages development of locally produced mobile friendly applications for the various social-economic development initiatives such as e-agriculture, e-education and e-health. Some government ministries are already using mobile phones to deliver services to the citizens, such as the Ministry of Agriculture, which uses mobile phones to receive and relay daily market prices of agricultural produce. These applications with locally relevant content accessible via mobile phones have accelerated the growth of mobile Internet.

### Personal Factors

Personal factors such as demography, perceptions and preferences have had an influence on mobile internet use in Kenya. Mobile

devices are rapidly becoming the primary medium to access the Internet across age groups and income levels in both developed and developing countries. Income, education, age, and gender has been seen to influence use of technology (Ndung'u, Waema & Mitullah, 2012). This by extension influences use of mobile Internet.

In the RIA (2011) survey, a question that sought to find out the reasons why the respondents did not use the Internet established that 51.6 % of the respondents had no interest or did not find it useful while 36.1 % did not use because their friends were not using. This shows the varied factors inform choice. A follow up question established that 69 % of the respondents would be interested in using the Internet if it was available close to where they lived, such as in Internet cafes. This shows that convenience plays a major role in determining the usage, an indication that mobile Internet will be widely used due to its convenience, with all other factors that influence usage maintained constant.

People can have different perceptions and preferences on the same thing. What one perceives is a result of interplays between experiences. Preferences on the other hand could be conceived as an individual's attitude towards a set of objects, typically reflected in an explicit decision-making process. Perceptions and preferences inform the choice made in relation to use of mobile Internet.

## Conclusion

Mobile Internet has been a key driver to the growth of Internet in Kenya currently used by 99% of the Internet users. Environmental and personal factors have played a major role in facilitating the acceptance and wide usage of mobile Internet. The growth is expected to continue as the network coverage is expanded to cover the remote areas, innovative solutions are deployed, competition drives down the cost of access and feature phones with Internet access capability becomes more widely available in Kenya. As more people get access to education, preferences and perceptions are likely to be shaped in a way that will promote more use of mobile Internet.

## Policy Implications

Given the trend mobile Internet is taking, the government, private sector, academia and the civil society should harness the derived and potential benefits. In revising the existing national ICT policy, a section on mobile platforms, and specifically m-government as one of the means of delivering information and services to, and interacting with, citizens and businesses should be included. Content providers should be mandated to ensure that their content is accessible via mobile platforms.

Policy interventions on infrastructure should be taken into account to further enhance the uptake and use of the Internet. The Internet service providers should be encouraged to share infrastructure ultimately reducing their cost of investment, which will translate to low tariffs to the end users. In addition, there should be a policy that mandates County governments to recognise fibre network as a national resource and provide way leaves to operators at a low or no cost. This will lead to accelerated broadband infrastructure roll-out and in turn contribute to national socio-economic development.

The regulator should operationalize the Universal Services Fund (USF) that was created by the 2009 Communications (amendment) Act and ensure coverage of under-served areas. The mobile network is estimated to cover 89% of the Kenyan population and cover only 34% of the total geographical area, according to the Communications Commission of Kenya (2012). Considering the utility of mobile phones and the benefits derived from their diverse usage, a policy should ensure wider spread and coverage of the mobile network. In addition, the regulator and policymakers should encourage investment in appropriate technologies that addresses the needs of the rural communities. This will result to wider use of mobile Internet in rural areas.

## References

- CCK (2013). Quarterly Sector Statistics Report: 2<sup>nd</sup> Quarter 2012/2013 (January – March 2013).
- CCK (2012). Annual Report.
- GoK (2011). Kenya Information and Communication Act cap 411 A.
- GoK (2009). The Kenya Communications (Amendment) Act.
- GoK, (2007) Vision 2030: A globally competitive and prosperous Kenya. Government Printer, Nairobi.
- KNBS (2012). The Economic Review. Government Printer, Nairobi.
- Ndung'u, M.N., Waema, T.M., & Mitullah, W.V. (2012). "Factors influencing usage of new technologies in low-income households in Kenya: the case of Nairobi", info, Vol. 14 Iss: 4, pp.52 – 64.
- RIA (2011). Household, individual and business survey data.
- Research ICT Africa (RIA) (2007), Survey data.
- Stork, C., Calandro, E. & Gamage, R. (2013): The future of Broadband in Africa, CPR Europe 2013.

**Paper prepared by Margaret Nyambura Ndung'u and Timothy Mwololo Waema.**

Contact [Nyambura@iniitkenya.com](mailto:Nyambura@iniitkenya.com) for further information.