Fixed and Mobile Broadband in Africa: An Executive Summary

by

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Fixed Broadband Market: Statistics and Analyses
More Internet investment needed to sustain Africa's economic growth

The development of the Internet market in Africa has been stymied by the poor quality and relative scarcity of the fixed-line infrastructure. As a consequence more than 90% of all Internet connections are via mobile networks. However, there is continuing progress being made to increase fixed-line connectivity, both at the backhaul and the local level. Growth is expected to be strong in most markets in coming years, albeit from a low base.

Supported by sympathetic regulatory regimes as also by governments which have come to understand the key functions of broadband connectivity for economic growth, a number of countries have focused on their fiber-based national broadband plans. There are also a number of countries with active small-scale fiber operators which have concentrated their efforts in wealthy suburbs and business districts.

Taking their cue from policies adopted in Europe and elsewhere, regulators are formulating policies which encourage network sharing and access to ducts, thus facilitating the roll out of networks and reducing deployment costs. Key markets for these developments include South Africa, Kenya, Nigeria, Ghana and Tunisia. In Tunisia the regulator in September 2016 launched a public consultation regarding its plans to introduce measures aimed at sharing and accessing operators' fiber-optic infrastructure. The plans are intended to develop economic and technical conditions for sharing networks which will expedite rollouts by minimizing costs. For its part, Tunisie Telecom has partnered with Korea Telecom to develop a 1Gb/s broadband service, while it has also trialed G.fast technology providing data at up to 800Mb/s over short loops.

There is also continuing activity and investment in terrestrial and subsea infrastructure, aimed at providing the necessary backhaul capacity to support fixed-line and, more particularly, mobile data traffic. Increased bandwidth is also helping to reduce broadband pricing for end-users, thus enabling a greater proportion of the population to access services.

International bandwidth supply is substantially higher than demand, and there is considerable capacity remaining even without the potential given by future cable upgrades. As such, effort is being concentrated in improving last-mile access. Although this is principally being made via 3G and LTE networks, there is substantial activity with fiber and upgraded DSL infrastructure as well.

On the metro fiber level much regulatory intervention is still required to facilitate access to infrastructure operated by monopolies and to prevent the duplication of fibre ducts on routes connecting city centers with economic hubs.

Key players in the cable sector include Liquid Telecom, which is building a new cable, dubbed Liquid Sea, running 10,000km from South Africa along the east coast, with connectivity to the Middle East and Europe. The cable has a design capacity of 30Tb/s, or about ten times the capacity of existing submarine cables in the region. A consortium including MTN Group, Saudi Telecom Company, Telecom Egypt and Telkom South Africa is also promoting the Africa-1 cable which will run from South Africa to Egypt, with branches to join other cables connecting to Djibouti and the Middle East.

Liquid Telecom also continues to increase its terrestrial network length and capacity, while also investing in local operators. In October 2016 Liquid Telecom and Botswana Power Corporation (BPC) set up a joint venture, Liquid Telecom Botswana, as a new network provider. Liquid Telecom Botswana will lease capacity on BPC's fibre-optic backbone infrastructure and so be better provisioned to support services for its wholesale and business customers.

The region is also on the cusp of further leaps forward as a result of spectrum policies. Governments and regulators are making use of spectrum released from the switch from analogue to digital broadcasting. Those countries which failed to meet the ITU's June 2015 deadline are expected to make progress during 2017, enabling spectrum in the 700MHz band to be repurposed for broadband use and thus driving broadband connectivity deeper into rural areas.

There have also been continuing investments in building local Internet Exchange Points to reduce dependence on international connectivity for local Internet services, so lowering the cost of developing local hosting and application development. The African Internet Exchange System, an African Union project implemented by the Internet Society, aims to have 80% of African users' Internet traffic exchanged within Africa by 2020.

These developments are encouraging for the future growth of the region's fixed-broadband sector, which will further drive economic progress as well as a range of benefits based on enhanced social inclusion among consumers.

Mobile Infrastructure and Mobile Broadband
Improved mobile network capability in Africa stimulating smart phone adoption

Within Africa there is considerable diversity in the availability and capability of mobile telecom infrastructure. Vast tracks of the continent, particularly in the northern desert regions, are sparsely populated with little in the way of network coverage. However, intense investment programs undertaken by several pan-regional operators in recent years has meant that population coverage in most countries is excellent.

Much of the phenomenal growth in the take-up of mobile voice and data services has stemmed from the lack of fixed-line alternatives. Fixed-line networks provide limited reach, particularly so in rural areas but also in many urban areas. Before market liberalisation efforts started some two decades ago most incumbent telcos were government-owned enterprises. There was little commercial incentive to invest in infrastructure, and combined with a lack of regulatory oversight, poor management and government neglect, fixed-line penetration remained very low by global standards. In many countries, such as in the DRC, Sudan, Mozambique, South Sudan and Libya, war and civil conflict largely destroyed what little infrastructure there was in place.

Mobile voice and data services were able to fill this void very effectively. As a result, in many countries in the region the use of telecoms services is morphing from being predominantly mobile to being solely mobile. Investment in fixed-line infrastructure is being side-lined in favour of mobile infrastructure. Operators are predominantly investing in spectrum, particularly in the 700MHz band as this is being released into 2017 and 2018 following the switch from analogue to digital broadcasts. They are also strengthening the robustness of their networks by migrating from 3G to LTE-based services. This in turn is being supported by increased international connectivity from a number of new submarine and terrestrial cables. These cables are providing the required backbone infrastructure to support the growing flow of data. Prominent projects include the SACS cable running between Angola and Brazil, with onwards connectivity to Miami, as well as the Liquid Sea cable being built by the pan-regional infrastructure provider Liquid Telecom along the continent's east coast.

Smart phones are increasingly becoming the principal mobile device used among consumers. The adoption of smart phones is being encouraged by a plethora of cheaper units manufactured locally. The growing take-up of such devices is in turn supporting a tremendous growth in m-commerce, m-money and m-banking services. With the majority of African people being unbanked, m-payment systems are thriving in most markets where they have been deployed.

This has been helped by operators facilitating money transfers between their cross-border networks, as also by co-operation among different players and by a wider number of banks hosting such services. M-money is particularly popular in markets such as Kenya, though the more sophisticated banking sector in South Africa was a contributing factor in the Vodacom's M-Pesa service being withdrawn from that market in mid-2016.

More than three quarters of mobile subscribers on the continent are expected to subscribe to broadband services by 2020, compared to about a fifth in early 2016. With more than a billion mobile subscribers in the region this presents a vast market for vendors and application providers. Although the relatively low purchasing power in the region will not translate into a similarly rapid growth in revenue, considerable potential remains.