



# SUB-SAHARAN AFRICA

ERICSSON MOBILITY REPORT APPENDIX

# MARKET OVERVIEW

The telecommunications infrastructure in Sub-Saharan Africa continues to evolve and develop across key sectors. Consumers, businesses, government and society at large are rapidly embracing Information and Communications Technology (ICT) mobile innovations, resulting in an increase in accompanying technologies, and creating potential for further growth.

By the end of 2014 it is forecast that there will be over 635 million subscriptions in Sub-Saharan Africa. This is predicted to rise to around 930 million by the end of 2019. The rapidly changing social and technological dynamic in ICT, complemented by new devices, has driven the increase in subscription numbers in the region. A price-sensitive market, it is now seeing growth in mobile phone ownership together with the availability of low cost smart devices. The graph below shows the overall trend in the Sub-Saharan region's subscriptions development, as well as those countries that are playing a key role in its growth.

The mobile phone is a leading communication device in the Sub-Saharan consumer market.<sup>1</sup> Mobile users in the region have shown a preference for using their device for a variety of activities that are normally performed on laptops or desktops. The relatively low cost of mobile phones and the continuous drop in prices has led to them becoming attainable for consumers from most segments or income brackets, especially those from the rising middle-class. The broader access to mobile phones by consumers from different backgrounds has created the potential for

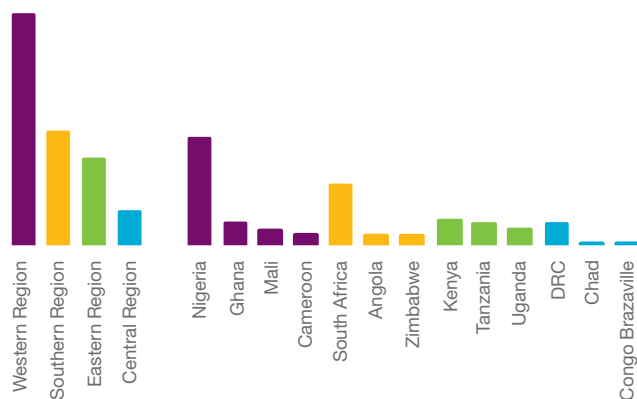
subscriptions to increase in the region. The digital concept has entered the lower-to-middle class consumer segment, as well as those businesses operating outside of the city.

Mobile banking is one such example where digital services, via the mobile phone, have moved beyond urban centers to peripheral surroundings and beyond, with significant uptake and usage in rural areas. Such areas in Sub-Saharan Africa typically experience significantly more social challenges, i.e. unemployment, and a lack of adequate and organized transportation systems when compared to their urban counterparts. Mobile banking has provided consumers with cheaper access to their finances due to a reduced need to travel and the lower overall cost of using a mobile phone for financial transactions. The large number of people in Sub-Saharan Africa who do not have bank accounts suggests that mobile phones may be the only way that many people will be able to access financial services. There is strong interest in mobile financial services in Sub-Saharan Africa. 58 percent of mobile users in the region show an interest in using mobile banking and mobile wallets in future.<sup>1</sup> This innovation is boosting financial inclusion at all levels of society across the region.

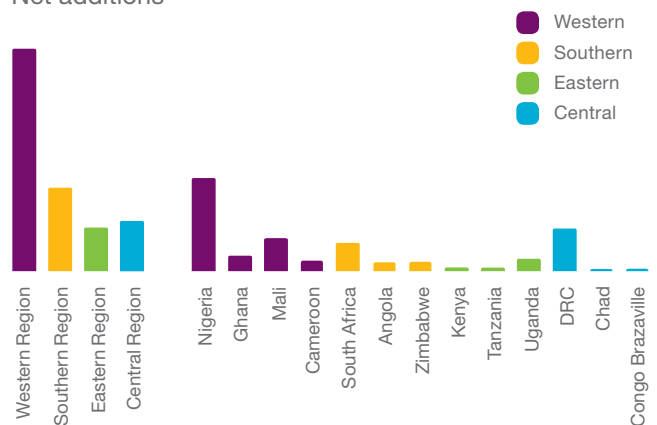
Digital technology is fast becoming a part of everyday life in Sub-Saharan Africa. Because of this, operators, government and an array of enterprises in the region are looking to develop services and products that meet the needs of the growing ICT user base.

## Mobile subscriptions, 2013

### Total



### Net additions



<sup>1</sup> Ericsson ConsumerLab (2013)



### Mobile broadband growth

Mobile broadband is becoming prominent in Sub-Saharan Africa as the region grows more reliant on mobile devices and society embraces mobility. However, it suffers from a scarcity of spectrum. This means added traffic congestion, delays in network rollout, higher service costs and overall compromised quality of service.

The challenge stakeholders and operators face in dealing with such issues and providing affordable mobile services has a bearing on consumer attitudes towards telecommunications offerings. 47 percent of Sub-Saharan mobile users believe that mobile data is still too expensive, even though they also believe that mobile data is cheaper and more accessible than fixed line internet.<sup>2</sup> The region is a relatively price-sensitive market. For mobile services to fully flourish, costs must be minimized.

Low cost smartphones and tablets are entering the market, acting as a catalyst for the growth of diversified mobile content. Apps are helping to tackle consumer entertainment, communication, utility and productivity needs. Some are changing industry roles and assisting in social improvements in the region. For example, MedAfrica is a mobile app which provides basic information about health and medicine and is accessible via all mobile phones – not just smartphones. People can use the information independently, lowering the burden of care on physicians. Patients with mild cases benefit from reduced traveling and queuing, while physicians can focus on more pressing cases. Affordable access to mobile broadband is not a luxury, but a necessity in regions such as Sub-Saharan Africa.

### Consumer characteristics and trends

The rapid global and regional uptake of smartphones has changed the way people communicate and use the internet. This will transform all other industries. A new phase of rapidly diversifying smartphone use has emerged, as consumers are increasingly able to personalize the content they access. Across society people are looking for mobile innovations to improve their everyday lives.

Sub-Saharan mobile consumers use their devices throughout the day and in different locations and for a broad range of activities. The growing trend for anytime, anywhere access to services and features is a key driver of mobile broadband use in the region. In fact, mobile broadband is now the primary way that many Sub-Saharan consumers access the internet. 70 percent of mobile users in the countries researched in the region browse the web on their devices, in comparison to 6 percent who use desktop computers.<sup>2</sup> As telecommunication technologies become a central part in the way businesses and society function, key stakeholders in the region such as government and network providers need to put resources in place that assist in dealing with consumer demand. More spectrum will need to be allocated to support networks, as their capacity is not growing as fast as the increase in data traffic.

Consumers believe that mobile services can enhance satisfaction of certain activities such as shopping, banking and leisure time. Digital or mobile services can also help improve sectors like agriculture, education, transportation and healthcare, as well as communication with government and local authorities.

<sup>2</sup> Ericsson ConsumerLab (2013)

## KEY DRIVERS FOR GROWTH

### 1. Devices and local content

The rapid increase in low-cost (less than USD 100) consumer-centric technology such as smartphones and tablets has played a pivotal role in driving growth within Sub-Saharan Africa's mobile market. This growth will be further driven by the increasing number of devices that cost less than USD 50 that are expected to enter the market over the coming years. The rise in ownership of internet-enabled mobile phones has made access to the internet easier and more affordable for mobile users in this region. The growth in mobile internet usage has helped overall regional internet penetration levels to exceed fixed-line internet.

New business opportunities that have been created by the internet have been boosted by consumers' increased access via mobile phones. This has led to the development of new business models. An example of this is the growing industry for value-added apps and services for smart devices.

In Kenya, Mozambique and Nigeria, TV and media services are increasingly being accessed using smartphones. These channels can be accessed by consumers via an app on their devices. This is influencing the development of local and regional content. Innovations such as this give rise to further market trends such as multiscreen consumer behavior.

### 2. ICT in key economy sectors

ICT has contributed to the growth of many industries within Sub-Saharan Africa. The financial sector is one key area in which mobile phones have transformed consumers' banking behaviors and promoted financial inclusion in the region.

75 percent of the region's population lives in rural areas. This consumer group is amongst the largest in the world without access to ICT services. The growing need to be financially independent and increasing mobile penetration is driving the use of mobile phones as a banking channel. This provides a huge opportunity to transform this industry whilst helping to lift people in the lower income groups out of poverty.

The agricultural sector in Nigeria has also been transformed by ICT with the launch of an electronic wallet system which allows farmers to receive electronic vouchers for subsidized seeds and fertilizers directly onto their mobile phones. It also enables them to pay for farming equipment from private sector agricultural dealers.

The smartphone revolution has also impacted media industries such as film in Nigeria and in other Sub-Saharan

countries. Nigeria is one of the top producers of movies in the world. Some of the movies made have played a role in promoting smartphone uptake in the country.

All sectors in the region will continue to be influenced by ICT development, and there will be further investment from key stakeholders as well as the wider economy. The demand for more localized solutions and developments will become the norm.

### 3. National broadband policies

The potential social, economic, political and technological impact of ICT and broadband is huge, not only globally, but regionally as well. Most countries in the region have national broadband policies in place to deal with this, while the rest are in the process of instituting them. They include clear performance indicators to enable broadband's uptake and widespread deployment.

These policies address, among other things: spectrum allocation, tax incentives/reductions on devices and technologies that enable connectivity, and e-government initiatives to make broadband available to schools, healthcare and government services (national as well as local). Such policies have shown potential to contribute positively to the socio-economic well-being of a country.

The targets set by policies and consumer behavior will drive an increase in mobile broadband uptake. Spectrum harmonization and allocation will drive mobile broadband.

### 4. High performance networks

Sub-Saharan Africa is a dynamic region, with technological advancements becoming a big part of how society functions. Consumers in the region are fast becoming the creators of content and deciders of services provided in the market.

Creating a seamless user experience through improved network performance will become paramount in operator differentiation strategies or business models and to consumer retention. A collaborative mind-set from regulators, mobile network providers, over-the-top players, infrastructure suppliers and other stakeholders will be the key in growing the region through ICT.

For this kind of cooperation to become a reality, more investments need to be made in most countries in the region to further improve the consumer network experience.

# MOBILE SUBSCRIPTIONS

Sub-Saharan Africa is a predominantly prepaid market. In 2013 for example, 99 percent of subscriptions in Nigeria were prepaid, as were 98 percent in Kenya and 83 percent in South Africa. These are amongst the top mobile markets in the region in terms of mobile subscriptions – the others follow largely the same trend. The prepaid nature of the region has contributed to the relatively volatile loyalty of its mobile subscribers. Regulator strategies such as mobile number portability, which help prevent people from being locked into one operator because they do not want to change their number, have created an option for subscribers to move to other providers. Operator subscription numbers are constantly fluctuating due to the non-commitment of subscribers.

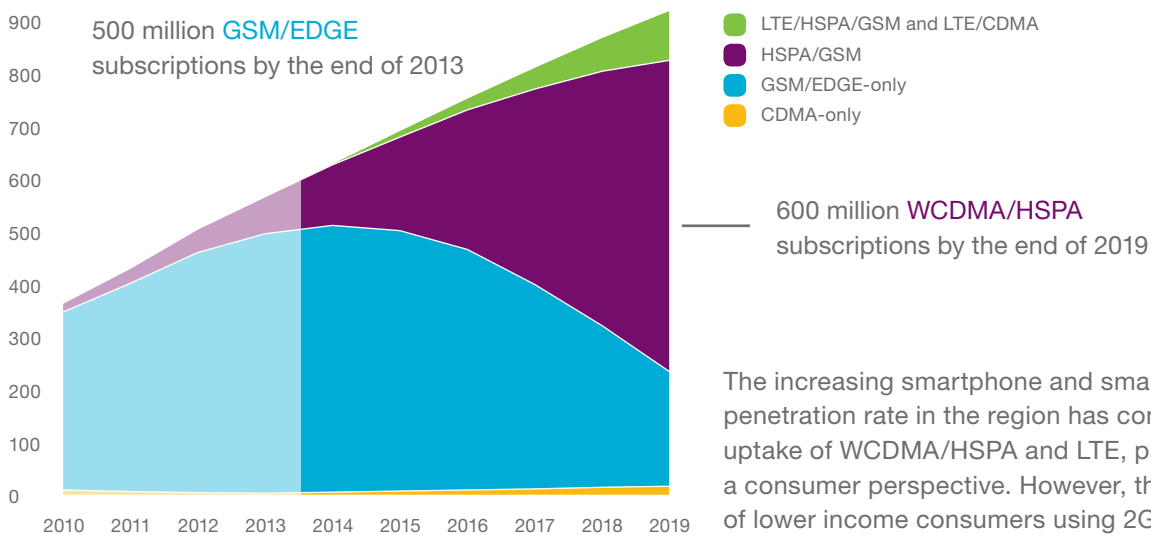
Competition exists not only between operators, but also as a result of over-the-top players, i.e. social media providers such as WhatsApp. These over-the-

top players use the telecommunications infrastructure to offer data services, which puts an added strain on the already pressured network. The low cost of using these over-the-top services means subscribers are less likely to use operator services such as SMS and voice.

Total mobile subscriptions in Sub-Saharan Africa are set to increase as the mobile revolution continues. The region is rapidly closing in on the global mobile penetration rate, which at the end of 2013 stood at around 92 percent, compared to around 70 percent in Sub-Saharan Africa.

Nigeria and South Africa are still the leading Sub-Saharan countries in terms of mobile subscription numbers as of Q1 2014, followed by Kenya, the Democratic Republic of Congo and Ghana. In terms of net additions per country, Nigeria leads, followed by the Democratic Republic of Congo, Uganda and Ghana.

Mobile subscriptions, Sub-Saharan Africa (million)



Mobile subscriptions do not include M2M subscriptions

**75%**  
of mobile subscriptions in Sub-Saharan Africa will be 3G/4G by the end of 2019

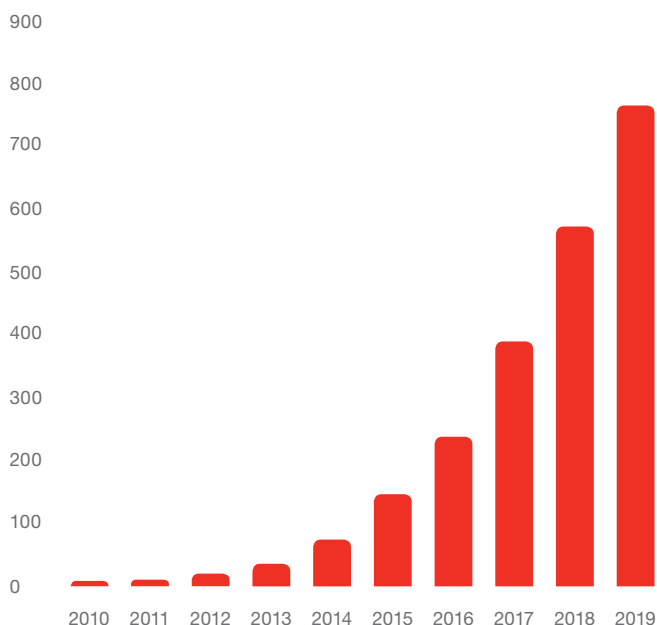
The increasing smartphone and smart device penetration rate in the region has contributed to the uptake of WCDMA/HSPA and LTE, particularly from a consumer perspective. However, the dominance of lower income consumers using 2G-enabled handsets in the market means GSM will remain the dominant technology in the region until 2018. With the growing middle class, low cost smartphones entering the region's mobile market and mobility becoming integral to people's lives, WCDMA/HSPA and LTE are increasingly the technologies of choice.

# MOBILE TRAFFIC AND POPULATION COVERAGE

As the connected society becomes the norm, consumers and businesses are increasingly using devices such as smartphones and tablets as substitute or complementary tools in everyday tasks. For example, many people will purchase a mobile phone instead of a traditional landline in many Sub-Saharan households. It is also used as a complementary device, for example to read emails, while attachments are opened on desktop/laptop computers. The growing usage of these devices for a multitude of tasks, and consumers' freedom to move from one screen to the next, means mobile traffic will significantly increase in the coming years.

The rise in sophistication of social networking platforms has played a role in the growth of mobile traffic. These platforms are used to share and disseminate information – 74 percent of Sub-Saharan social network users send messages to friends, 62 percent check their friends'

Mobile data traffic, Sub-Saharan Africa (monthly PetaBytes)



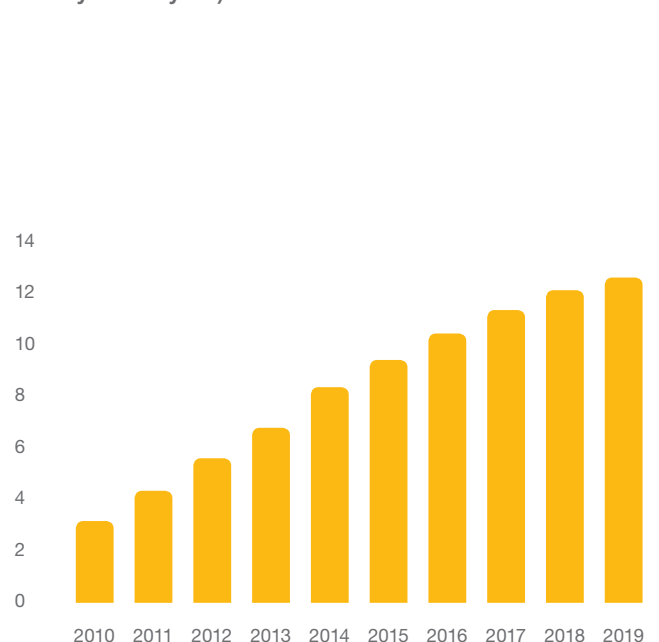
20X

growth in mobile data traffic between 2013 and 2019

updates, 46 percent upload photos/videos to social media and 15 percent stream content from these platforms.<sup>3</sup> Such activities will have a ripple effect on the growth of mobile traffic – specifically data traffic – as the concept of sharing evolves. The growing consumption of viral content over mobile devices is a good example of this.

Improved network performance will be imperative as increased traffic puts a strain on current networks and consumers demand a seamless user experience. The region's mobile data traffic is predicted to grow around 20 times between the end of 2013 and the end of 2019. Globally, mobile data traffic will grow 10-fold during the same period. Mobile operators and relevant ICT stakeholders, including governments, must drive the development of appropriate infrastructure to handle the growing traffic demand on networks.

Mobile voice traffic, Sub-Saharan Africa (monthly PetaBytes)



2X

growth in mobile voice traffic between 2013 and 2019

<sup>3</sup> Ericsson ConsumerLab (2013)



The increase in affordable smartphones in Sub-Saharan Africa's mobile market will contribute to a rise in 3G and 4G technologies and a subsequent increase in subscriptions. Even though some markets in the region show strong growth, poor network coverage is a cause for concern. This is especially the case in rural and poor areas where operators' ability to adequately serve consumers lags behind the service for urban centers. This is also the case in densely populated urban areas that do not have adequate network capacity and coverage to manage the increased uptake in data and voice. Mobile network technologies and solutions may be seen as viable options to fixed broadband in the deployment of next-generation broadband networks. Rural areas are often seen as having low returns, but as connectivity continues to increase in importance, serving these places will be paramount in helping bridge the current digital divide.

Regulatory pressure has resulted in a number of minimum Quality of Service (QoS) KPI thresholds, being set that have driven operators in Sub-Saharan Africa to provide quality network performance. This has been implemented in countries such as Nigeria. Sub-Saharan consumers are moving from purely using a set selection of mobile services, to a personalized range. An example of how operators are adapting to this change can be seen in markets such as Nigeria and Kenya, where they have teamed up with insurance companies, financial institutions, over-the-top players and others with the aim of creating additional high value services for their customers. Consumer usage of mobile services is rapidly becoming data-driven.

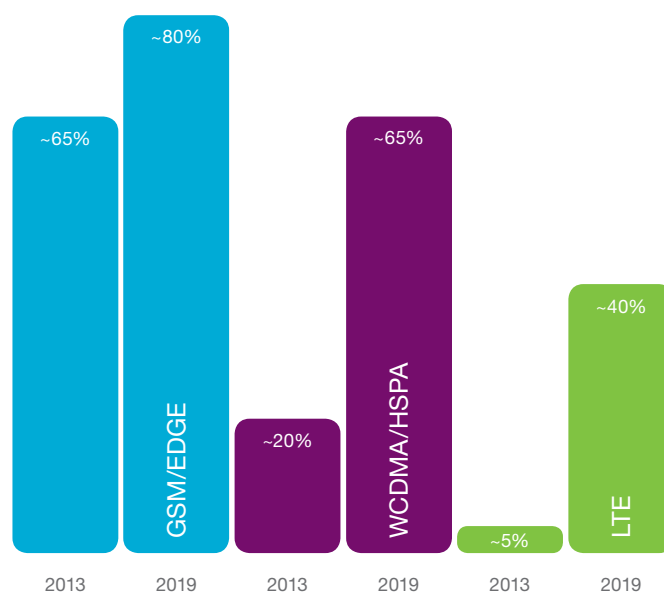
### Population coverage

Increasing coverage will grow in importance as the need to provide a good quality service moves from cities to encompass surrounding areas. With consumers in Sub-Saharan Africa becoming more accustomed to technology in everyday life, businesses and governments have to put in place innovations that keep up with the technologically aware consumer. Population coverage is used to define areas in which users have access to a sufficient signal to connect to mobile networks.<sup>4</sup>

In order to enable an improved quality of service for users, a good level of population coverage needs to be achieved. Most regulators are beginning to address this issue in Sub-Saharan Africa. The importance of mobile broadband coverage will be further heightened as mobility comes to be viewed as an expectation rather than a luxury.

WCDMA/HSPA and LTE subscriptions will continue to grow due to the increasing number of connected enterprises and consumers' growing need for speed and reliability in their network. Nigeria, South Africa, and Angola will have the most LTE subscriptions in the region between 2013 and 2019, whilst Nigeria, South Africa and Kenya will lead in terms of WCDMA/HSPA subscriptions over the same period. GSM will continue to be the main technology used in Sub-Saharan Africa over the coming years and will cover 80 percent of the population by 2019. However, WCDMA/HSPA coverage will grow from 20 percent in 2013 to 65 percent by 2019. LTE will also grow from just 5 percent in 2013, to cover 40 percent of the population in 2019.

Population coverage, Sub-Saharan Africa



<sup>4</sup> Population coverage is the proportion of the population in an area that has sufficient signal to connect to a mobile network. It should be noted that the ability to utilize the technology is subject to other factors as well, such as access to devices and subscriptions.

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Our services, software and infrastructure – especially in mobility, broadband and the cloud – are enabling the telecom industry and other sectors to do better business, increase efficiency, improve the user experience and capture new opportunities.

With more than 110,000 professionals and customers in 180 countries, we combine global scale with technology and services leadership. We support networks that connect more than 2.5 billion subscribers. Forty percent of the world's mobile traffic is carried over Ericsson networks. And our investments in research and development ensure that our solutions – and our customers – stay in front.

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