

Evidence for ICT Policy Action

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Understanding what is happening in ICT in Nigeria

A supply- and demand-
side analysis of the
ICT sector

Fola Odufuwa

Research ICT Africa

Research ICT Africa (RIA) is an information and communication technology (ICT) policy and regulation research network based in Cape Town, South Africa, under the directorship of Dr. Alison Gillwald. As a public interest think tank, RIA fills a strategic gap in the development of a sustainable information society and knowledge economy. The network builds the ICT policy and regulatory research capacity needed to inform effective ICT governance in Africa. RIA was launched a decade ago and has extended its activities through national, regional and continental partnerships. The network emanates from the growing demand for data and analysis necessary for appropriate but visionary policy required to catapult the continent into the information age. Through development of its research network, RIA seeks to build an African knowledge base in support of sound ICT policy and regulatory design, transparent implementation processes, and monitoring and review of policy and regulatory developments on the continent. The research, arising from a public interest agenda, is made available in the public domain, and individuals and entities from the public sector, private sector and civil society are encouraged to use it for purposes of teaching and further research or to enable them to participate more effectively in national, regional and global ICT policymaking and governance.

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Executive Summary

The Nigerian telecommunications market is fully liberalised, highly competitive, and evolving with time. Since 1992, a wide range of regulatory initiatives has been undertaken to open up the market to private operators to provide products and services across the entire spectrum of ICT market segments. These initiatives, particularly in relation to market entry, have resulted in an impressive 53% compound annual growth rate (CAGR) in overall fixed and mobile subscriptions since 2001. Quarterly telecommunications sectoral growth is up to 35%, and the sector's annual contribution to GDP was estimated at 6.73% in 2012.

However, in spite of the widely publicised successes, Nigeria, as highlighted in this RIA Sector Performance Review (SPR), lags behind many other African countries with respect to a number of market indicators. Using nationally representative household survey samples, RIA's 2012 ICT Access and Usage Surveys in 12 African countries focussed on household, individual and informal business ICT access and usage. Among RIA ICT Survey countries, Nigeria ranks 5th with respect to mobile penetration and 5th in terms of industry perception of the effectiveness of domestic telecommunications regulation. In terms of RIA's broader Pricing Transparency Index: Prepaid Mobile for 2012, Nigeria ranks 17th out of 46 countries in terms of the affordability of the cheapest prepaid mobile product from a dominant operator, and 13th out of 46 for affordability of the cheapest mobile prepaid product from any operator.

The 2012 RIA Nigeria ICT Access and Usage Survey found that there is a general paradox in Nigeria's telecommunications market – of performance on the one hand and deficiency on the other – and that this paradox exists across all the sub-sectors of the market. For example, mobile telephony is experiencing huge growth simultaneous with a fixed sector in a downward spiral. The penetration of fixed telephony is a meagre 65,914 households, or 0.3% of total households in the country, in spite of the fact that the RIA ICT Survey found ample demand for both fixed and mobile telephony products. As a result of this anomaly in the voice telephony market segment, there has been virtually no fixed-line competition (in voice, data or internet provision) to the mobile companies. The fixed sector has been experiencing a persistent downward slide, while the mobile networks have at times been overloaded with voice and internet traffic. Consumer pressure on mobile networks is now creating significant quality of service (QoS) problems, as the vacuum in fixed services is putting a tremendous burden on mobile operators to deliver good quality voice, data and internet services – which could otherwise have been provided through fixed networks (if, *inter alia*, the regulation of the fixed sector had been effective).

Internet uptake appears strong, but at the same time computer penetration is limited and fixed household internet is virtually non-existent. The RIA Nigeria ICT Survey of 2012 found that only 3.4% of households, or 747,025, have a fixed internet connection, and 62% of internet users go online primarily via their mobile phone. It has been reported that 58.1% of Nigerian web traffic was via mobile handsets and other mobile devices in November 2012 (StatCounter Global Stats, 2012). The poor penetration of fixed household internet is directly linked to absence of the fixed lines over which internet access products (e.g. ADSL) are typically delivered; low penetration of computers; and inadequate power supply.

Paradoxes also hold when the ICT demand, access and affordability scenario is analysed. The RIA Nigeria ICT Survey found that the majority (62%) of non-internet users were eager to use the internet if it could be made available within roughly 30 minutes' walking distance from where they reside. And 50% of mobile subscribers surveyed said that cost is the main limitation on increased calling activity while 60% of mobile subscribers said they would make more calls if costs were lowered.

The bandwidth situation is also paradoxical. Since 2010, there has been a massive 2,705% increase in wholesale submarine bandwidth capacity, via landings at the country's coastal city of Lagos. However, terrestrial domestic networks to carry these links inland are in low supply, resulting in relatively minimal impact on retail pricing levels for internet access.

There are several identifiable reasons for the market paradoxes. As at the time of this report, Nigeria does not currently have a single, approved, high-level policy document outlining the national strategies upon which growth of broadband so critically depends – though there were the signs of potential movement in this direction in 2012, with publication of a draft National ICT Policy and establishment of a Presidential Committee on Broadband. (The Committee produced a document entitled National Broadband Plan 2013-2018, which was made public in mid-2013 – after the period of study which is the focus of this report.)

Regulatory policies and decisions tend to be one-sided and not holistic, and reactive as opposed to proactive, tending to eventually, and oftentimes inadvertently, favour one market segment at the expense of others. The general industry perception is that the Nigerian telecommunications regulatory environment is ineffective with respect to pricing, QoS, universal service obligations (USO), access to scarce resources, interconnection, and anti-competitive practices. Among the causes of this negative assessment is undoubtedly the decline in fixed telephone services arising from the failure of several efforts by government to privatise Nigeria Telecommunications Ltd. (NITEL), and the related downturn in the business fortunes of fixed-line companies.

Although the future and prospects for the Nigerian ICT sector appear rich, achieving the necessary scale and pace of growth is predicated on finding the correct mix of regulatory initiatives and interventions needed to encourage greater competition among market players and deeper penetration and usage of the entire range of ICT services.

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Acronyms and Abbreviations

ACE	Africa Coast to Europe submarine cable	LGA	Local Government Area
ADSL	asynchronous digital subscriber line	LTE	long-term evolution
ASYCUDA	Automated System for Customs Data	MCT	Ministry of Communication Technology
CAPEX	capital expenditure	MOU	minutes of use
CDMA	code division multiple access	MTEL	Mobile Telecommunications Ltd.
CAGR	compound annual growth rate	NIGCOMSAT	Nigerian Communications Satellite Ltd.
CSSR	call setup success rate	NIMC	National Identity Management Commission
DTT	digital terrestrial television	NBC	National Broadcasting Commission
DVB-T	Digital Video Broadcasting-Terrestrial	NBS	National Bureau of Statistics
EDGE	enhanced data GSM environment	NCC	Nigerian Communications Commission
ELRIC	enhanced long-run incremental cost	NGN	Nigerian Naira
EVDO	evolution data optimised	NITDA	Nigeria Information Technology Development Agency
FX	foreign exchange	NITEL	Nigeria Telecommunications Ltd.
GLO-1	Globacom-1 submarine cable	NTA	Nigerian Television Authority
GPRS	general packet radio service	OPEX	operating expenditure
GDP	gross domestic product	PAC	Presidential Advisory Committee on Transition from Analogue to Digital Broadcasting in Nigeria
GSM	Global System for Mobile Communications	PPP	purchasing power parity
HSPA	high-speed packet access	PwC	PricewaterhouseCoopers
ICT	information and communications technology	QoS	quality of service
ISP	internet service provider	RIA	Research ICT Africa
ISDN	integrated services digital network	SAT3	South Atlantic Terminal 3 submarine cable
ITU	International Telecommunication Union	SIM	subscriber identification module
JACITAD	Joint Action Committee on ICT Awareness and Development	SME	small and medium enterprise
JAMB	Joint Admissions and Matriculation Board		

Introduction

This RIA Nigeria ICT Sector Performance Review (SPR) report is one of a series of SPRs containing the results of primary and secondary research conducted by RIA in 12 African countries during 2012, and it follows up on the RIA Nigeria country SPR published in 2007. The SPRs seek to determine the state of information and communication technologies (ICTs), particularly telecommunications, in African countries through survey interviews with households, individuals and informal businesses focussed on understanding how technology products and services are being accessed and used. The SPRs also provide the results of analysis of operator and other market data, and surveys of the views of industry stakeholders to discover how telecommunications regulation is viewed. By combining supply-side data with demand-side information, this RIA Nigeria SPR, as with the other RIA SPRs, seeks to provide a deep, multi-dimensional understanding of how policies shape the Nigeria's ICT market, and how the linkages between policy-regulatory intent and market outcomes can be improved going forward.

Political and Socio-economic Overview

Nigeria is the most populous nation in Africa, with a young population of 158 million. The country's economy had a GDP growth of 7.37% in the third quarter (Q3) of 2012 (World Bank, n.d.), and its GDP is the second largest in sub-Saharan Africa (behind South Africa). Though Nigeria is an oil-producing country, 2012 statistics show that agriculture (42.62%) is the largest contributor to GDP, followed by trading (18.81%), services (16.7%) and crude oil, petroleum and gas (13.42%). In the third quarter (Q3) of 2012, the annual contribution of telecommunications (including postal communication) to GDP was estimated at 6.73% (NBS, 2012b, p. 6).

Table 1: Key economic data

GDP annual growth rate	7.37% (Q3 2011) 6.48% (Q3 2012)
GDP per capita (2012)	US\$1,555.40
GDP composition by key sectors (Q3 2012)	Agriculture: 42.62% Wholesale and retail trading: 18.81% Services: 16.7% Crude oil & natural gas 13.42% Telecommunications & postal: 6.73%

Source: NBS (2012a)

Since the restoration of civilian democracy in 1999, the political terrain in Nigeria has been relatively stable, though there have been periodic localised clashes between ethnic, political or religious groups. These clashes have been fuelled largely by historical animosities, social inequity (real or perceived), and economic disparities. Though Nigeria is a resource-rich country, national infrastructure is poor and poverty levels high, with three in five Nigerians living

The telecommunications sector contributed almost 7% towards Nigeria's GDP in 2012.

on less than US\$1 a day (BBC, 2012). In 2011, the current national administration of President Goodluck Jonathan appointed a former World Bank Managing Director, Ngozi Okonjo-Iweala, as Minister of Finance, and set up a national economic team consisting of reputable members to improve fiscal planning, management and budget implementation. The government has also embarked on economic programmes, such as the Subsidy Reinvestment and Empowerment Programme (SURE-P), to bridge the poverty gap and to address root causes of sectarian conflict. Such programmes have been designed to make sure recent economic growth percolates into broader society. However, there is a widely held view that more needs to be done.

Policy and Regulatory Environment

Policy Overview

ICT in Nigeria is currently administered under three main policy documents: the National Mass Communication Policy of 1990, the National Telecommunications Policy of 2000, and the National Policy for Information Technology of 2000. These documents, as well as other disparate ICT policies and government pronouncements, will potentially be consolidated in terms of new policy currently at the draft stage: the draft National ICT Policy of 2012, released in January 2012 by the Ministry of Communication Technology (MCT). This draft National ICT Policy articulates the nation's ICT objective as a "knowledge-based globally competitive society" by 2020 (Ministerial Committee on ICT Policy Harmonization, 2012, p. 12). Towards achievement of this objective, the draft Policy provides for 16 policy focus areas, and ambitiously lists 103 strategic actions which the government proposes to undertake. The 16 focus areas include infrastructure development, broadband access, spectrum management, regional collaboration, universal access, research, national security, software and hardware, and local manufacturing. According to the draft Policy, these strategic actions would be carried out through an expanded Ministry, responsible for ICT, which would become the coordinating ministry responsible for all ICT development and oversight in Nigeria. In addition, there would be elimination of the current multiple regulatory bodies, and creation of a converged regulator to oversee the entire ICT sector –with the converged regulator under the direction of the expanded Ministry.

The draft National ICT Policy is, thus, highly aspirational – but at the same time, the document is not completely clear on how the government would implement all of its high ambitions, and is silent on a number of important issues, including standards, open data, accessibility and competition. And there is suggestion in the draft Policy that the regulatory autonomy guaranteed for the Nigerian Communications Commission (NCC) – and, to a lesser extent, the National Broadcasting Commission (NBC) – under the old institutional arrangements would, if the draft Policy is approved, be limited or even abolished. The implications for industry of such a proposal, given the levels of bureaucracy within the public service, are of concern. If this draft Policy is approved in its present form (it presently awaits the approval of the Federal Executive Council), and implemented by law requiring a converged regulator to report directly to the Minister, then the independence of industry regulation, and the gains of a deregulated market, could be at risk. Also of concern in the draft Policy is its call for retention of state financial interest in communications companies.

The draft Policy seems to have been developed by bureaucrats without public or industry consultation, and some of its provisions, as just outlined, go against the spirit of reform that has been driving the transformation of Nigeria's ICT sector. It remains to be seen whether the draft Policy will go forward and see the light of day as official policy, bearing in mind the public stance of the NCC, which has said that while it favours a "common and harmonized law" it does not favour establishment of a single regulator for all ICT matters (AllAfrica, 2012a).

Regulatory Framework and Institutional Arrangements

The current framework for regulation of ICTs in Nigeria is illustrated in Figure 1. If the draft National ICT Policy of 2012 is approved, the government would merge the broadcasting and telecommunications regulators (the NBC and NCC) into a single body with sweeping powers under a new regulatory framework.

The draft National ICT Policy of 2012 proposes ambitious changes designed to centralise ICT policymaking and regulation.

The draft National ICT Policy, if adopted, would potentially compromise regulatory independence.

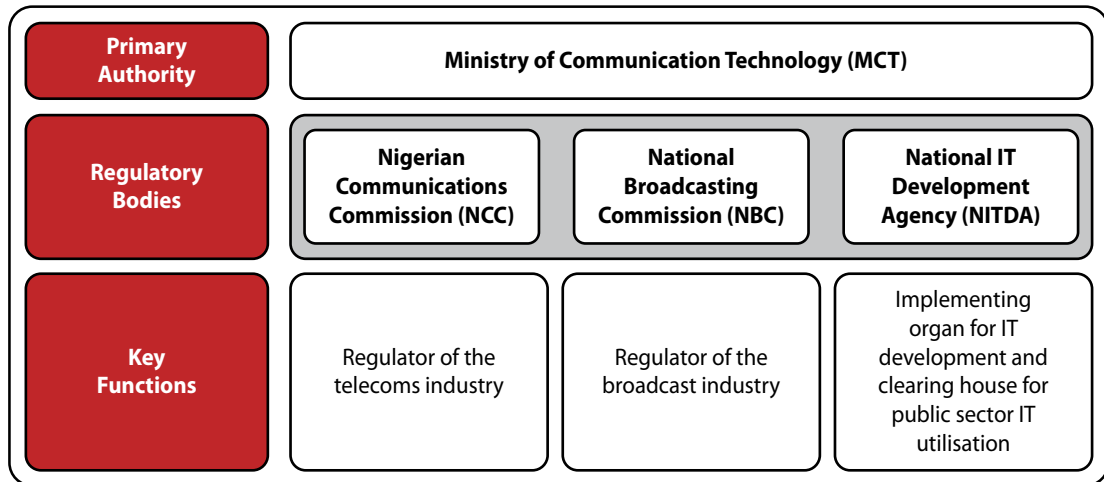


Figure 1: Current framework for ICT regulation in Nigeria

Under the draft Policy of 2012, all but one of the current entities responsible for ICT policy formulation, implementation and regulation would report to the Minister of the expanded Ministry of ICT. The expanded Ministry would coordinate and monitor the implementation of government’s ICT policies; seek to promote the use and development of technology; and become the coordinating ministry for ICT regulation in Nigeria. The one existing agency that would remain fully independent of the expanded Ministry is the National Space Research and Development Agency (NASRDA). The seven entities listed below would all, in terms of the draft Policy of 2012, report directly to the expanded Ministry:

- **NCC:** The NCC regulates the Nigerian telecommunications industry and has, until now, had wide discretionary powers to license operators, encourage competition, monitor tariffs and quality of service, protect consumers, and generally promote affordable services.
- **NBC:** The NBC regulates the broadcast industry and does this by issuing licences, assigning broadcast frequencies, setting standards, and monitoring compliance with the broadcast code. Under existing laws, the NBC reports to the Presidency through the Ministry of Information, but would, according to the draft Policy of 2012, now be merged with the NCC and directly supervised by the expanded Ministry for ICT.
- **National Information Technology Development Agency (NITDA):** Established by the NITDA Act 2007, this Agency has, until now, been implementing the National IT Policy of 2001, on behalf of government, as an agency empowered to plan, promote and develop IT penetration and projects.
- **National Frequency Management Council (NFMC):** The NFMC is the manager of radio frequency spectrum in Nigeria and is responsible for policies, planning, coordination and wholesale allocation of spectrum to other ICT regulatory bodies. The NFMC consists of representatives of the Ministries of Aviation, Transport, and Science and Technology, and of the NCC, the NBC and the State Security Service. It meets quarterly, with the Minister of Communication Technology serving as Chair.

The draft Policy would stretch the mandate and regulatory jurisdiction of the existing Ministry and re-name it the Ministry of ICT.

- The Universal Service Provision Fund (USPF): Set up under the National Communications Act of 2003, the USPF is designed to ensure equitable service provisioning across the nation. The Fund works with private operators to deliver communications equipment and networks to unserved and underserved communities. The NCC levies 5% of operators' annual revenues as statutory fees, 40% of which is then passed on to the USPF to go towards universal service and access initiatives.
- Nigerian Internet Registration Association (NiRA): NiRA is the official manager of the .ng domain.
- NIGCOMSAT: NIGCOMSAT Ltd. is the state-owned commercial manager of the country's communications satellite NigComSat-1R, and of Galaxy Backbone Ltd., the mandated provider of connectivity and enterprise applications to the public sector. NIGCOMSAT and Galaxy Backbone are government-owned, limited liability companies.

Enabling Laws

Until 1992, the legal basis for telecommunications and broadcasting in Nigeria was the Wireless Telegraph Act (WTA) of 1935, which was promulgated by the British colonial government of the day (Nigeria Community Radio, 2012). Amended several times by respective governments, the WTA strictly prohibited any form of non-state communication services or licences, and rights to use services and frequencies for point-to-point communication could only be granted at the discretion of the appropriate Minister. In 1992, the then-military government promulgated the National Broadcasting Commission (NBC) Decree 38 of 1992 and the Nigerian Communications Commission (NCC) Decree 75 of 1992, both of which irreversibly changed the face of ICT in Nigeria. In terms of these two Decrees, a significant degree of regulatory control was wrested from government ministries and given to two new regulatory bodies (the NBC and NCC), and the market was opened up to private operators. Subsequent amendments to both Decrees, in 1998 and 1999, further liberalised the broadcasting and telecommunications markets.

The NCC Decree of 1992 established the NCC with semi-autonomous powers to regulate the telecommunications industry. The Nigerian Communications Act 19 of 2003 subsequently repealed and replaced the NCC Decree of 1992 and made the NCC a fully autonomous body with exclusive powers to license and regulate both private and government-owned operators. The NBC Decree of 1992 established the NBC with comprehensive powers over all aspects of private broadcasting in Nigeria, including licensing, monitoring, policy formulation/implementation, ethics and standards. The NBC Amendment Decree 55 of 1999 extended the NBC's oversight to include state-owned radio and TV stations and created more licensing categories, including campus and community radio stations. However, unlike the NCC, the NBC is subject to ministerial directives, and any new licence can only be issued upon the approval by the President, and on the recommendation of the Minister of Information.

In 2007, with the growth of the telecommunications and broadcasting markets being driven by private companies, and the IT industry failing to keep pace, the National Information Technology Agency (NITDA) Act was passed, establishing NITDA as the government entity responsible for promoting IT penetration and serving as the clearing house for public sector IT projects.

Since liberalisation, the ICT market has undergone tremendous and mostly positive changes, though much work still needs to be done, including, *inter alia*, privatising the national carrier NITEL, addressing the huge gap between mobile and fixed telephony, developing broadband internet, lowering tariffs, improving QoS, encouraging innovative applications (including e-government), and protecting consumers.

The draft National ICT Policy calls for merging of the broadcasting sector regulator (the NBC) with the telecommunications regulator (the NCC).

Nigeria's IT industry struggles to meet the needs of the country's private telecommunications and broadcasting firms.

Telecom Regulatory Environment (TRE) Assessment

Mobile pricing in Nigeria is highly competitive and approaching commodity levels.

In order to understand how Nigeria’s ICT industry stakeholders currently perceive the regulatory environment, RIA in 2012 conducted a Telecom Regulatory Environment (TRE) assessment, which consisted of a survey of 45 Nigerian telecom senior-level executives, industry practitioners and stakeholders. Respondents were classified into three categories – (1) operators; (2) industry analysts and consultants; and (3) other interested parties, including media, civil society and user groups – and asked a simple set of questions regarding seven dimensions of regulation for fixed, mobile and broadband telecommunication services. The seven regulation dimensions canvassed, in line with the TRE methodology as developed by LIRNEasia (see LIRNEasia, 2008) were: market entry; allocation of scarce resources; interconnection; anti-competitive practices; universal service obligations (USO); tariffs; and quality of service (QoS).

It was found that the general industry perception is that the Nigerian regulatory environment is ineffective with respect to six of the seven dimensions surveyed (see Figure 2): allocation of scarce resources, interconnection, anti-competitive practices, USO, tariffs and QoS. Only the market entry dimension was seen as being effectively regulated. This negative TRE assessment seems to be driven for the most part by the decline in fixed telephone services (which has arisen from the failure of several efforts by government to privatise NITEL) and from the downturn in the business fortunes of several private fixed-wireless companies (for reasons including high levels of competition amongst each other and from mobile operators, the fragmented nature of fixed coverage, lack of access to scarce resources, faulty technology choices, and insufficient economies of scale). According to one TRE respondent:

In my opinion, the regulator could have done much better on a number of fronts: (1) protecting the consumer in terms of Quality of Service, tariffs and broadband internet penetration, (2) advising the Federal Government on the NITEL privatisation process, and (3) allowing for a better competitive playing field between CDMA and GSM technologies.

The regulator is perceived as, in general, not overly favouring incumbents.

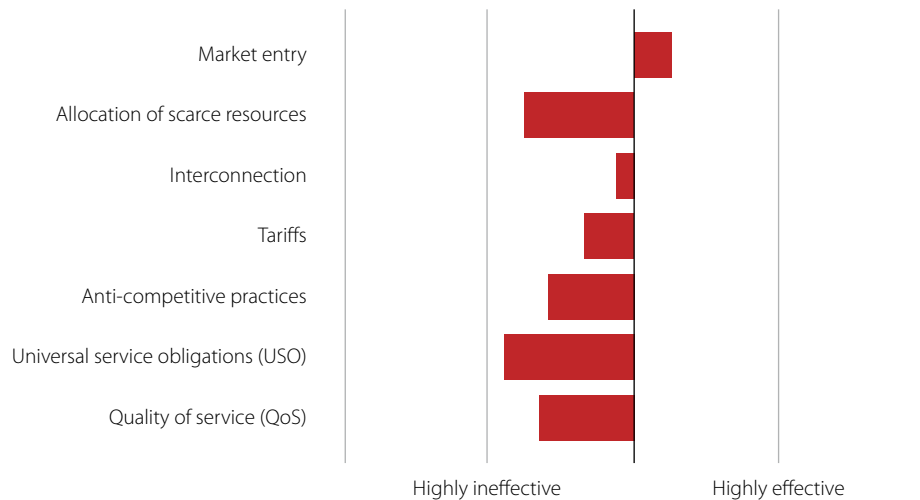


Figure 2: RIA Nigeria TRE assessment 2012

Source: RIA TRE assessment data 2011-12

The vacuum in fixed services has put tremendous pressure on mobile operators to deliver good quality voice, data and internet services – delivery which could otherwise have been (at least partly) done through fixed networks, if the regulation of that market segment had been effective. The regulator periodically confronts QoS problems (usually following public outcry) by imposing sanctions – either by way of fines or outright, albeit temporary, bans on new promotions and sales.

The fact that tariff regulation is considered modestly ineffective (i.e. less ineffective than four of the other TRE dimensions assessed) is likely partly due to the fact that prices continue to be moderated by operators competing in a highly competitive market. Pricing in Nigeria is gradually approaching commodity levels, and except where an operator is able to exercise dominance over a particular service type (and thus charge a premium), the price differences between operators tend to be slight. The fact that market entry regulation received an “effective” score is likely because the regulator NCC is perceived as having effectively licensed new operators and promoted new services. The NCC has made the market entry process relatively easy for new players, and is perceived, as a general rule, as not overly protecting incumbents. It is felt that new entrants do, however, still face challenges in relation to interconnection, shared facilities and the incumbents’ pricing strategies.

At an international comparative level, if one looks across the results of the 12 TRE assessments conducted in RIA study countries in 2012, Nigeria is the only country where market entry regulation is positively perceived. In the words of one respondent: “The regulator is becoming more effective although there’s still a long way to go. The regulatory environment will benefit a lot with improved quality of personnel and processes.” In terms of its overall RIA TRE assessment score for 2012, Nigeria ranks 6th among the 12 RIA study countries – behind Rwanda, Namibia, Tanzania, Kenya and Ghana but ahead of Uganda, Botswana, Cameroon, Mozambique, South Africa and Ethiopia (see Figure 3). Nigeria had a more positive comparative ranking in the 2007-08 RIA TRE assessments, in which Nigeria and Ivory Coast outperformed all the other study countries in terms of overall TRE score.

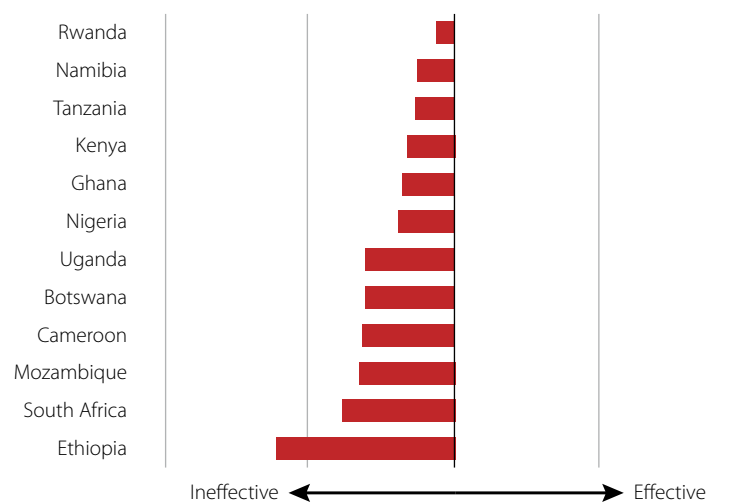


Figure 3: Overall RIA TRE rankings 2012

Source: RIA TRE assessment data 2011-12

Notable in Figure 3 is that, in the 2012 TRE, no country has a positive overall TRE score.

Regulatory Developments

SIM Card Registration

The national SIM card registration database lacks integrity.

In 2010, the Nigerian Parliament approved expenditure of NGN6.1 billion (US\$38.1 million) for the NCC to create a central database of old and new mobile telephone subscribers, in order to strengthen national security, profile telephone owners, and enable the implementation of number portability. In a nationwide exercise that involved 10,000 biometric capture points and lasted over 11 months, the regulator registered 110.43 million SIM cards, a figure that included 14.54 million (or 13%) duplicate or spurious entries which were to be further verified. At the end of the exercise in 2012, the NCC assigned the SIM card database to the National Identity Management Commission (NIMC) (JACITAD, 2012), the agency of government responsible for the National Identity Database containing citizen information such as voter registration, international passports, drivers' licences and tax registrations. However, the high number of reported bad records, the absence of due diligence on registrants, and the seeming ease with which new SIMs can be purchased without registration have cast doubt on the viability and integrity of the mobile phone database. Also questioned has been the prioritisation of this database exercise in the context of the urgent attention that needs to be paid to regulatory bottlenecks constraining affordable access to the full range of communication services.

Operator Sanctions

Regulator sanctions on operators tend to be arbitrary and without empirical justification.

Periodically, the NCC sanctions operators for QoS issues and other regulatory breaches. These sanctions come by way of blanket fines or temporary bans on sales. In May 2012, the regulator fined the mobile GSM operators NGN1.17 billion (US\$7.32 million) for poor delivery of service, based on the NCC's internal performance benchmarks (which, as at April 2012, included a minimum of 98% for call setup success rate (CSSR)) (NCC, 2012). Later in 2012, in November, the NCC issued an executive order banning six telecommunications companies from the continuation of product promotions. The order was based on widespread complaints of network congestion, apparently arising from daily-free-minute promotions, which were said to be affecting the four mobile operators as well as private fixed-line companies Multi-Links, Visafone and Intercellular. The regulator was of the view that these promotions were overloading networks, resulting in a pervasive drop in service quality. The blanket ban included daily fines for infringements.

However, regulator sanctions, while arguably needed to bring operators closer to delivering on their responsibilities to subscribers, have tended to be arbitrary and without clear empirical basis. For example, the NCC has not definitively shown a direct link between promotions and network congestion, and its 2012 decision to impose once-off fines for network performance begs the issue of who truly should be compensated: the regulator or the subscribers who have received poor QoS?

Number Portability

The NCC has appointed a consortium consisting of Interconnect Clearinghouse, Saab Grintek and Telcordia to implement number portability in Nigeria. When concluded, this service will enable mobile phone owners to freely switch operators without losing their numbers. The customer's new network will, however, have to issue a new SIM card on the subscriber's number for the service to work. (Nationwide activation of number portability commenced on 22 April 2013, after the conclusion of the period covered by this report.)

Digital Migration

Nigeria is in the final stages of implementing the migration from analogue to digital transmission of television signals. In April 2012, Cabinet released the White Paper on the recommendations of the Presidential Advisory Committee on Digital Broadcasting (PAC), and has since mandated an executive team led by two ministers to ensure the transition materialises by 1 January 2015 – ahead of the June 2015 switchover deadline agreed by European and African member countries of the International Telecommunication Union (ITU). The state-owned broadcaster, the Nigerian Television Authority (NTA), will be licensed as the public sector digital terrestrial television (DTT) signal distributor. A second DTT signal distributor will be licensed to carry the digital transmissions of private stations. The shift to digital broadcasting will require new laws to be passed so that frequencies which are currently utilised for analogue TV transmissions are freed up, after analogue switch-off, for new services. Additionally, 20 million DTT set-top boxes (STBs) are required for analogue TV sets to receive digital broadcasts. NTA StarTimes, a DTT pay-TV pilot project between NTA and Star Communications of China using DVB-T technology for DTT, is a key vehicle for DTT STB rollout.

Cabinet has mandated a team to oversee completion of the migration to digital terrestrial television by January 2015.

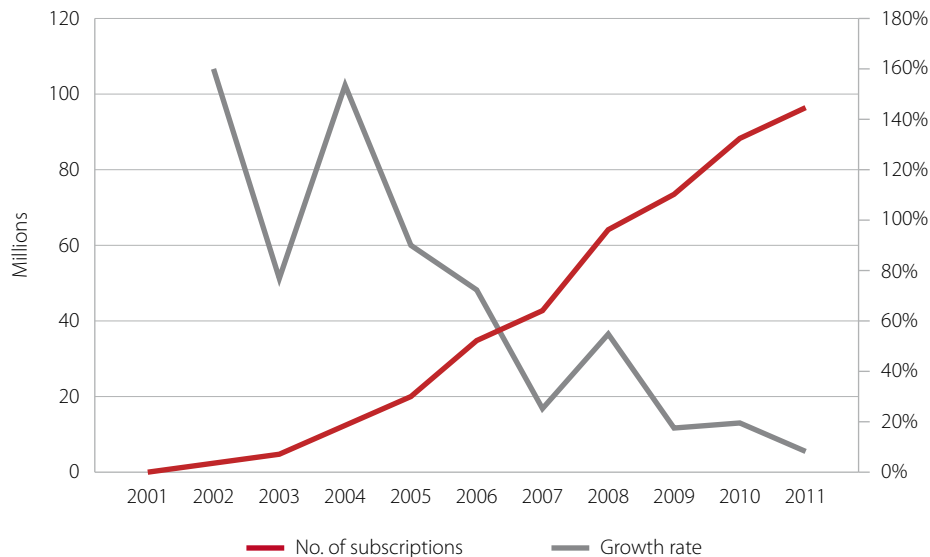
Market Analysis

Since its inception, the NCC has licensed hundreds of private operators to provide a wide range of services and applications across the entire telecommunications value chain. Services presently available in Nigeria include fixed telephony, mobile communications, VSAT satellite transmission, microwave and fibre optic backhaul, and internet services. Though the NCC lists 30 licence categories, the main players can broadly be clustered into four groups:

- mobile;
- fixed;
- fibre optic connectivity, including undersea cables; and
- internet services.

The regulator has successfully created market space for new entrants and subscription growth.

The regulator's market entry initiatives have resulted in an impressive 53% CAGR in overall telephone subscriptions between 2001 and 2011, as shown in Figure 4.



The decline of fixed-line provider NITEL has contributed to the dominance of the GSM mobile operators.

Figure 4: Growth in telephone subscriptions

Source: NCC (n.d.)

Though annual growth rates are beginning to drop year-on-year from their high of 160% in 2002 (as is to be expected after a decade of liberalisation and with nearly two-thirds of the population now able to access a telephone line), the telephony sector was still the country's highest-growing economic sector, recording a 35% annual growth rate in the third quarter (Q3) of 2011 and a lower but still strong rate of 31.57% annual growth in

Q3 2012 (NBS, 2012b, p. 8). With the gradual demise of the state fixed-line carrier NITEL, the telephony market is currently dominated by the mobile GSM operators – MTN, Globacom (Glo), Airtel and Etisalat (NCC, n.d.) – who offer mobile voice and data connections across the entire country. As Figure 5 shows, mobile operators together controlled 96.5% of the market share for telephone subscriptions in Nigeria at the end of September 2012. (A fifth operator, MTEL, is in limbo, with only residual operations on its dwindling network and a reported subscriber base of 258,520, or 0.024% market share, at the end of September 2012, and that is why its market share appears as 0% in Figure 5).

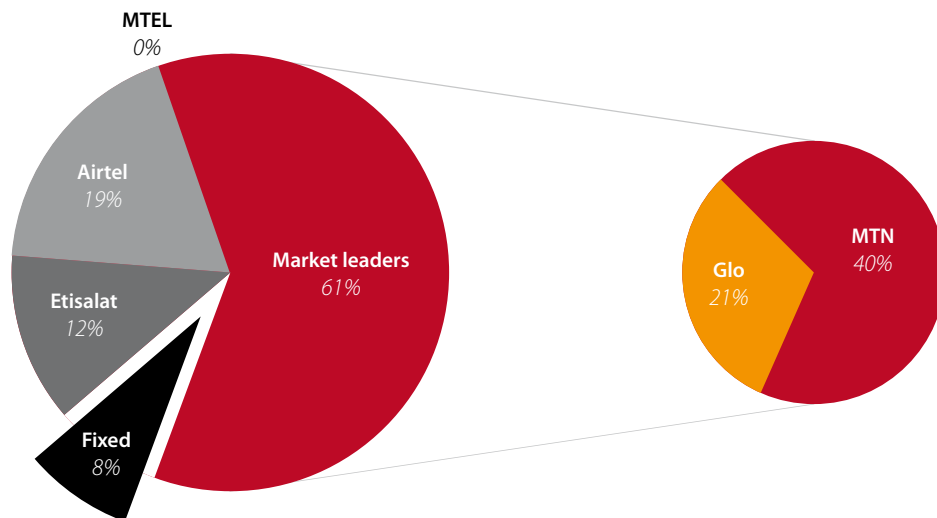


Figure 5: Market distribution of fixed and mobile connections, September 2012

Source: Derived from NCC (n.d.)

New Developments

Submarine Cables

Since 2010, there has been a massive 2,705% increase in the wholesale submarine bandwidth capacity available to Nigerian telecommunications operators, due to the launch of three new undersea cable systems with landing points into Lagos. MainOne (2010), Glo-1 (2011) and WACS (2012), with a combined capacity of 9.54 tbps, have the potential to change the landscape of internet service provisioning and data connectivity in Nigeria through lowered wholesale international bandwidth prices and higher speeds. All three of these submarine systems are promoted by private corporations and are reporting strong post-launch capacity sales. Prior to 2010, Nigerian operators had been heavily dependent on VSAT systems and NITEL's notorious SAT3 for bandwidth. (SAT3 was the *de facto* monopoly submarine cable system, and was generally expensive and unreliable.) Since the introduction of the new systems, there appears to be competition in wholesale international bandwidth pricing for internet services and discernible improvements in bandwidth speeds. There is also increased variety in the range of available internet products/solutions, whether delivered by traditional ISPs or mobile operators.

Three new undersea cable systems have broken Nigeria's dependence on VSAT and NITEL for international bandwidth.

A 17,000km Africa Coast to Europe fibre optic cable (5.12 tbps) is planned to launch in 2013.

Nigeria launched a new communications satellite, NigcomSat-1R, in 2011.

Table 2: Submarine cable systems with landing points in Nigeria

Submarine cable	Route	Year of launch	Promoter	Capacity	Cost (m = million)
SAT3	South Africa to Spain	2001	Telkom South Africa/ NITEL	340 gbps	US\$600m
MainOne	Nigeria to Portugal	2010	Main Street	1.92 tbps	US\$240m
Glo-1	Nigeria to UK	2011	Globacom	2.5 tbps	US\$800m
WACS	South Africa to UK	2012	MTN	5.12 tbps	US\$650m

Source: Author (data collection from company websites).

SAT3 (<http://www.safe-sat3.co.za/SystemInformation/SystemInformation.asp>),

MainOne (<http://www.mainonecable.com/index.php/network>),

Glo-1 (<http://www.gloworld.com/nigeria/globusiness/broadband/>),

WACS (mtnbusiness.com.ng/services-solutions/wacs)

Another cable launch is planned for 2013: the US\$700 million Africa Coast to Europe (ACE) submarine cable, being promoted by Orange Telecom in a consortium with national carriers of French-speaking West and Central Africa. ACE is a 17,000 km fibre optic cable designed to deliver 5.12 tbps high-speed connectivity to 21 countries between France and South Africa, including Nigeria. However, while there has been a 105% growth in terrestrial fibre in Nigeria since 2008 (NCC, n.d.), with fibre links now stretching for 22,982 km, access to national fibre is still limited and relatively expensive where available. And thus, while it is true that submarine cables have expanded the capacity of overall international bandwidth, inland locations within the country are yet to experience any significant lowering of broadband prices (Opeke, 2012).

Communication Satellites

Nigeria has one communications satellite in orbit, the geostationary NigComSat-1R, which was launched into space in December 2011 to replace NigComSat-1 (which was lost to power failure while in orbit in 2008). The US\$250 million NigComSat-1R is managed by the aforementioned state-owned NIGCOMSAT, and offers, through its 40 transponders, voice, video and data transmissions on a wholesale commercial basis to telecoms operators and broadcast companies across its footprint. NigComSat is currently regulated by the NCC and NBC, and is developing two additional satellites for launch in 2013.

Mobile Money

Mobile money, enabling users to pay for goods and services with their mobile phones, is at an embryonic stage in Nigeria. In August 2011, as part of its Cashless Nigeria programme, the Central Bank licensed 16 private companies to sell mobile money products in the country. Of these new players, only Stanbic IBTC, GTBank, PocketMoni, United Bank of Africa, EcoBank, FirstBank and Pagatech commenced operations during the period, up to the end of 2012, covered by this report. Constraints affecting the remaining licensees include capitalisation, infrastructure, marketing and technology – and perhaps the licence framework, as the buoyant mobile GSM operators were inexplicably excluded from the scheme by the Central Bank. The NCC has announced its intention to develop a mobile money regulatory framework that would include mobile operators, as it is these operators that appear to have the subscribers, platforms and liquidity necessary to successfully deliver mobile money solutions.

Nigeria ranks 9th out of 11 RIA survey countries in Africa with respect to the penetration of mobile money, according to the RIA 2012 ICT Surveys' demand-side findings (as represented in Figure 6). Only 0.5% of individuals aged 15 years or older in Nigeria use mobile money products to transfer cash, even though 30.5% have bank accounts. The continental leader in mobile money is Kenya, and the top three RIA-surveyed mobile money countries are all in East Africa (Kenya, Tanzania, Uganda).

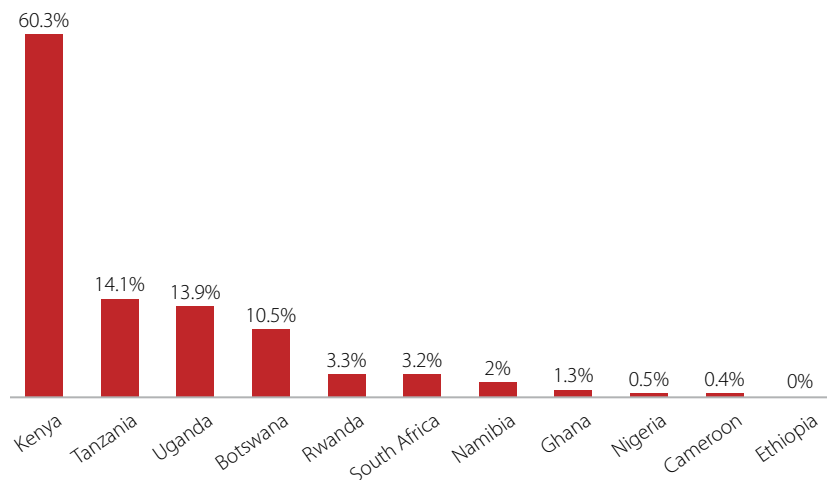


Figure 6: Penetration of mobile money services in RIA study countries, 2012

Source: RIA ICT Survey data 2011-12

E-government Applications

Promoted by NITDA, by the state-owned/mandated public sector ICT provider Galaxy Backbone, and by private vendors, e-government is still in its infancy in Nigeria. In 2008, the government implemented public-sector reforms, in conjunction with the World Bank, in order to increase accountability and transparency, and one such reform was the instituting of electronic payments for all transactions done by the civil service (for salaries, procurements and contracts). Another, and arguably the most successful, application of e-government in Nigeria is the national matriculation examination results release conducted annually by the Joint Admissions and Matriculation Board (JAMB). Prior to the implementation of the e-government website by JAMB, candidates – who often exceed 1 million in number in a single year – did not get their results until several months after the results were released because the results were sent by surface post. Via the online system now in place, candidates can check results, using prepaid scratch cards, within eight days of the examination.

Other notable applications of e-government include the electronic verification of vehicle and drivers' licences by traffic police at the Federal Capital Territory; GIS mapping of land allocations; the Automated System for Customs Data (ASYCUDA) computerisation project of the Nigerian Customs Service; online checking of postings under the National Youth Service Corp Programme; and the Growth Enhancement Support initiative of the Ministry of Agriculture (which aims to distribute 10 million mobile phones to farmers by 2013 so that they can receive fertiliser and seeds). If the Growth Enhancement Support programme succeeds, Nigeria would become the first country in Africa to use electronic wallets to connect farmers with inputs (African Farming and Food Processing, 2012).

Nigeria has a low ranking among RIA ICT Survey countries for mobile money penetration.

E-government is still at an early stage of development.

Penetration

Fixed Telephony

The decline in fixed-service provisioning has been due to several factors: the collapse of the state-owned fixed-line firm NITEL (which up to 2001 had the biggest communications network in the country); mobile telephony's economies of scale and global adoption of mobile GSM as the technology of choice; the deep pockets of GSM operators, giving them strong first mover advantage in the deployment of base stations across the country; reduced vendor support for rival mobile platform CDMA; the initial inability of fixed-wireless lines to roam nationally; the evolution and shift of technology away from traditional fixed systems to mobile systems, driven by consumer expectations of ubiquitous access; and, possibly, the lack of proactive anticipation on the part of the regulator NCC to deal with the unintended effects that the success of mobile has had on fixed.

*Private fixed/
fixed-mobile firms
struggle to take
market share
from the mobile
operators.*

Though Nigeria's fixed market was the first telecoms market segment to be liberalised – when Multi-Links launched a rival service to NITEL in 1997 – private fixed-line companies have found mobile competition difficult to withstand, particularly the competition coming from the GSM operators, and a number of companies have either been acquired or liquidated. Recent proof of this market trend is seen in:

- The sale by Telkom South Africa of its ownership of Multi-Links to Helios Towers Nigeria for US\$10 million (Bloomberg, 2012). (Telkom had originally paid US\$410 million (Reuters, 2012) to acquire the fixed operator and had injected US\$1 billion in capital investments (AllAfrica, 2012b).)
- The merger of CDMA operations of three providers – MTS, Multi-Links and Starcomms into the Capcom consortium. (Under this arrangement, Multi-Links does, however, retain its fixed network business.)
- The collapse of Reltel Wireless (ZOOM), whose fixed-wireless network had only 121,926 subscribers in September 2012, down from a peak of 1.5 million at the height of its operations (NCC, n.d.).

The financial statements of Starcomms, Nigeria's sole publicly traded telecommunications company, reflect the deteriorating fixed-line business landscape. Figure 7 shows that the operator's annual turnover went down from a peak of NGN34.5 billion in 2008 to NGN7.9 billion in 2010, with negative net income between 2005 and 2010.

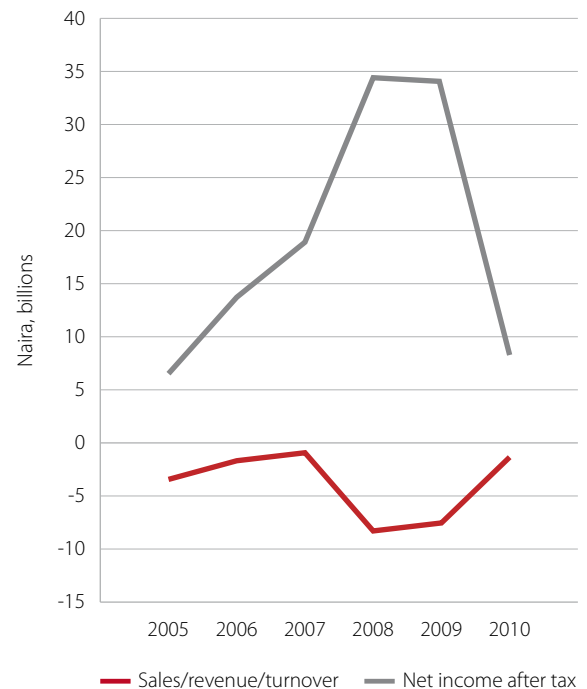


Figure 7: Financial performance of Starcomms

Source: Derived from data in Starcomms (2010)

Mobile (GSM and CDMA)

South African-based GSM operator MTN's Nigerian arm leads Nigeria's mobile market with 48% market share, holding double the subscriptions (and probably revenues) of those of its closest competitor, Glo. MTN's revenues and profits in Nigeria (MTN's biggest market) continue to rise while network investments appear to be either remaining constant or being reduced. (The operator's 2012 market share in South Africa, its home country, is 37% or 25.4 million subscribers – see the 2012 RIA South Africa SPR). MTN Nigeria's financial statements are public, because its parent is listed on the Johannesburg Stock Exchange. All the other mobile operators in Nigeria are private companies under no obligation to publish their financial statements.

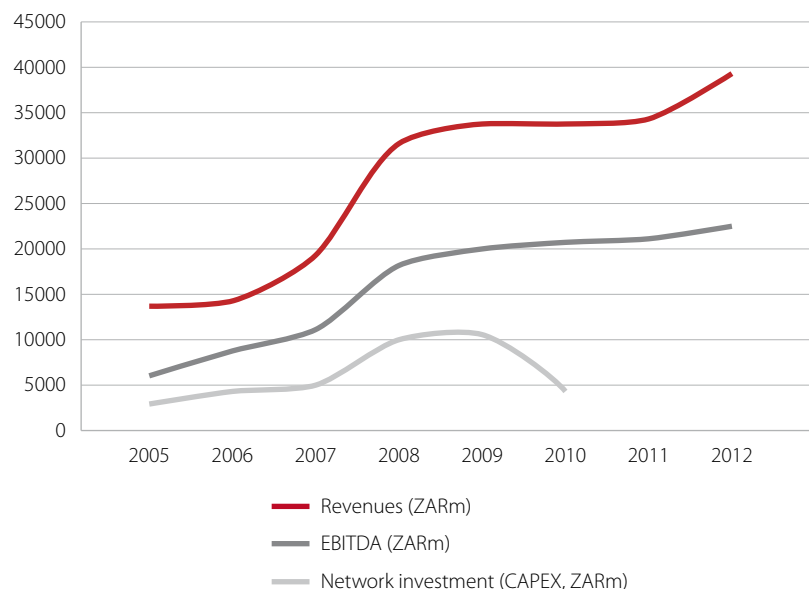


Figure 8: Financial performance of MTN Nigeria (ZAR = South African Rand) ¹

Source: MTN (2012) and previous Annual Reports

MTN's corporate performance in various African markets, as outlined in Table 3, shows that while the company is hugely profitable and draws its second highest country revenue per subscriber (turnover and EBITDA) from its Nigerian operation, the multinational incurs its biggest in-country CAPEX spend per subscriber on its Nigerian network. More than a third, i.e. 35%, of MTN's revenue per subscriber in Nigeria is spent on network expansion. This is proof of how challenging the country's infrastructure situation is in relation to hard forms of infrastructure (such as power and backhaul systems, which have to be provided in the absence or unreliability of underlying and support networks), as well as the soft forms of infrastructure (i.e. the general lack of proactiveness on the part of government agencies in promoting policies, regulations and practices that make it easier to do business in the country).

¹ The US\$ to ZAR exchange rate was roughly US\$1 to ZAR8.5 in December 2012.

MTN Nigeria holds double the subscriptions of its closest rival and almost half of the country's mobile market.

Poor existing infrastructure makes expansion expensive for mobile operators.

Table 3: MTN's subscriber indicators – selected African markets (in US\$)

2012	Revenue per subscriber	OPEX per subscriber	CAPEX per subscriber	EBITDA per subscriber	EBIT per subscriber	OPEX per subscriber growth	EBITDA per subscriber growth	CAPEX per subscriber growth
South Africa	1,622.6	1,054.6	251.8	568	414.1	-7.1%	-7.9%	35.1%
Nigeria	811	338.5	287.8	472.5	343	5.4%	-8.6%	89.1%
Iran	302.3	168.5	27.9	133.8	105.3	-8%	-1.2%	-17.2%
Cameroon	523.1	283	99.4	240.2	158.9	-12.6%	-4.2%	76.8%
Ivory Coast	678.4	405	148.5	273.4	190.8	30.4%	23.5%	130.5%
Sudan	270.2	195.4	167.3	74.9	23	-22.4%	3.3%	5.4%

Source: MTN (2012) (Figures for Ghana and Uganda are omitted as their data were distorted by one-off effects arising from asset sales during the years under consideration.)

GSM mobile companies are pushing out fixed/fixed-wireless operators.

There has been virtually no effective fixed-line competition to the GSM companies, and attempts to compete by private fixed and fixed-wireless companies – such as Multi-Links, Visafone and Starcomms – have been at great cost. The fixed telephone sector has experienced a massive slump with its CDMA mobile and fixed/fixed-wireless lines shrinking by 11% and 13% respectively between Q3 2011 and Q3 2012 (see Table 4).

Table 4: Telecommunications market share by technology and type of service

Technology	Active operators	Growth rate (subscriptions)			Average growth	% Share
		Q1 2012	Q2 2012	Q3 2012		
Mobile (GSM)	5	4%	4%	5%	5%	96.5%
Mobile (CDMA)	4	-13%	-12%	-9%	-11%	3%
Fixed/fixed-wireless	16	-17%	-14%	-8%	-13%	0.4%

Source: NCC (n.d.)

In addition, in spite of the fact that the Nigerian mobile market has grown exponentially over the past decade (owing largely to the successful market entry policies of the regulator), the country nevertheless ranks only 4th among 2012 RIA Africa ICT Survey countries with respect to mobile ownership penetration, as shown in Figure 9. Mobile phone ownership is still greater in South Africa (84.2%), Botswana (80%) and Kenya (74%), with Nigeria's percentage sitting at 66.4%.

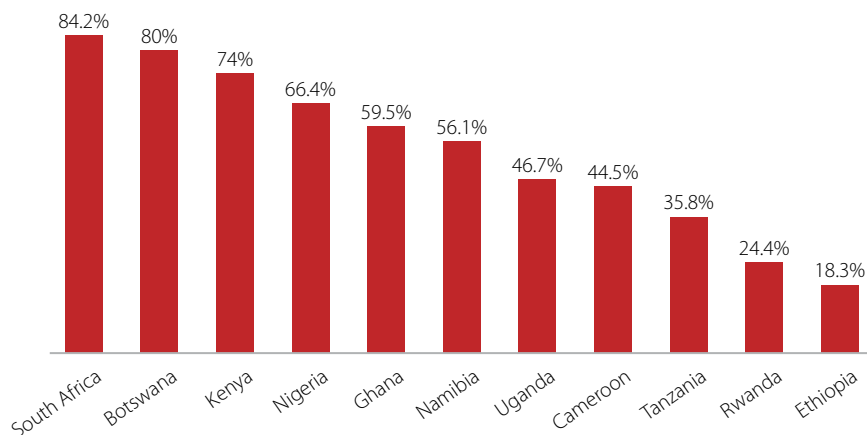


Figure 9: Ownership of mobile phones in RIA study countries, 2012

Source: RIA ICT Survey data 2011-12

Internet/Broadband

In mid-2012, Nigeria was reported to have the highest total number of internet users of any country in Africa, with 48.4 million users, leading Egypt (29.8 million), Morocco (16.5 million), Kenya (12 million) and South Africa (8.5 million) (Internet World Stats, 2012)². Advertised broadband speeds range from 300 kbps to 800 kbps, priced at between NGN5.86 and NGN7.81 per MB, though these speeds are rarely achieved and there is no universal agreement as to what constitutes broadband. Nigeria relies heavily on wireless technologies for delivery of internet, because of the decrepit state of the national fixed-line infrastructure. Mobile operators, which have the advantage of scale and coverage, are the main providers of broadband connections, with networks based on GPRS, EDGE, UMTS and LTE technologies. Internet solutions and services are also provided by fixed-wireless operators which offer EVDO and HSPA products, and ISPs which utilise, in the main, WiMAX and fibre optic solutions.

Due to the growth in mobile internet usage, the mobile handset has become the primary medium for accessing the internet in Nigeria, with 58.1% of web traffic originating from handsets and other mobile devices (StatCounter Global Stats, 2012). This statistic may at first appear to flatter the country with an appearance of being on the cutting edge. The reality, however, appears to be that the low penetration of computers, poor electricity supply, and the proprietary or limited nature of terrestrial networks have made the mobile a convenient and portable economic necessity, in spite of its limitations in terms of screen size and applications.

As mentioned earlier, Nigeria did not, in the period of study for this report, have a single, approved, high-level ICT policy document outlining the national strategies upon which the growth of broadband so critically depends. (A Presidential Committee on Broadband was formed in 2012, but its National Broadband Plan 2013-2018 was only made public in mid-2013, after the period of study which is the subject of this report – see below for more on the National Broadband Plan.)

² The definition of who is an internet user varies widely in the ICT industry, and thus caution should be applied towards these figures.

Decrepit infrastructure has limited Nigeria's fixed internet penetration. Mobile phones have become the dominant means of internet access.

Broadband activity is thus primarily market-led and disparate, with minimal regulatory input. There are initiatives being implemented by the NCC and the USPF to promote broadband diffusion, as outlined in Table 5 below, but with little success.

Table 5: Official broadband initiatives in Nigeria

Agency	NCC		Universal Service Provision Fund	
Programme	Wire Nigeria (WIN)	State Accelerated Broadband Initiative (SABI)	Rural Broadband Internet Access (RUBI)	Backbone Telecommunication Infrastructures Project (BTRAIN)
Objective	Rollout of national fibre optic cable infrastructure	Affordable residential broadband	Wholesale bandwidth to rural areas	Voice and data access projects by local governments
Status	Subsidies were to be given to winning bids, received from private operators, towards construction of a national fibre optic network. Winners were MTN and Multi-Links, but both companies have pulled out. Future outlook is uncertain.	Subsidies were designated for the private-sector rollout of broadband-enabled customer premise equipment in all the 36 states of the country. Though winners were announced, the programme appears to have been abandoned.	This is a USPF subsidy programme with a package of incentives given to private operators to provide wholesale bandwidth to designated locations in rural areas. Only 18 of 774 Local Government Areas (LGAs) had been installed by August 2012.	This is a USPF initiative to add 1,000 km of fibre to the national network. USPF says it has achieved 50% of set target.

Source: Author, derived from the NCC & USPF websites (ncc.gov.ng and uspf.gov.ng)

By its own admission, the NCC accepts that the programmes just outlined (as well as related regulations) have not had the desired effect of catalysing the growth of broadband in Nigeria (Balancing Act, 2011), and the NCC says it intends to consolidate the initiatives into a new programme called Open Access Model. The NCC also plans to award 4G licences in 2015, and to assign frequencies in the 2.5GHz spectrum, to drive mobile broadband penetration. However, for broadband to succeed, policy and regulations need to simultaneously encourage the penetration of devices (both PCs and mobile devices), bandwidth and applications – all the while bearing in mind the need for stable public power supply. The establishment of the 14-person Presidential Committee on Broadband in September 2012 to draw up a broadband roadmap for the country, while welcome no one level, to some extent further exacerbates the confusion surrounding the various regulatory initiatives and pronouncements on broadband – and to some extent undermines the value of the process around the draft National ICT Policy of 2012 and the legitimacy of the regulator’s role in charting a future path for the market.

It is not clear how the multiple objectives of the National Broadband Plan of 2013 are to be realised.

The Presidential Committee on Broadband submitted its report, entitled Nigeria's National Broadband Plan 2013-2018, to the President on 30 May 2013 (as this RIA Nigeria report for 2012 was being finalised) (THISDAY, 2013). The 105-page Plan calls for extension of broadband coverage to 20% of the population by 2017 and defines Nigeria's broadband vision as that of transforming into "a society of connected communities with high speed internet and broadband access that facilitate faster socioeconomic advancement of the nation and its people" (MCT, 2013, p. 12). Broadband is currently defined in Nigeria as a data speed of 1.5 mbps or greater, and the Plan details steps that the government says it intends to undertake in order to achieve this minimum speed target that it has set for itself. Those steps relate to:

- reviewing, revising and establishing policies that treat ICT networks as critical national infrastructure;
- promoting rapid rollout of broadband networks;
- reducing operator costs and increasing pricing transparency of services, through increased levels of infrastructure-sharing and market intervention as necessary;
- releasing spectrum for new broadband technologies including for LTE; and
- creating an attractive investment climate to stimulate demand by providing concessions, tax incentives, grants and other forms of state support.

The MCT subsequently set up a National Broadband Council consisting of 19 members to take forward the Plan (The Guardian, 2013). But while the Broadband Plan lists a number of tactical and strategic activities that are to be embarked upon within set deadlines by different levels of government, it was still highly uncertain, as this RIA Nigeria report for 2012 was being finalised in mid-2013, how the Plan's myriad objectives were to be realised.

Pricing

Interconnection Termination Rates

Regulatory intervention has forced down interconnection rates since 2009.

Arising from regulatory intervention, interconnection rates in Nigeria have been dropping annually since 2009, by an average of 7.9% for mobile calls and 6.7% for fixed. Reductions in SMS rates have been even greater, falling at an annual average of 19.2% since 2010. Following a study and industry consultations based on the study, the NCC in 2009 issued a Determination (NCC, 2009) on voice and SMS interconnection rates up to 2013, applicable to old and new operators. The determination was based on the enhanced long run incremental cost (LRIC) pricing model, which was initially adopted in 2006 and sought to address the wide gap between old and new operators (especially in the pricing of on-net and off-net calls, which favour networks with larger volumes of subscriptions and calls). The new framework also addressed the silence of the NCC's 2006 Determination (NCC, 2006) regarding which national SMS interconnection rate would be applicable to the industry. (This loophole had apparently been exploited by incumbents to the detriment of new entrants.) New entrants were defined in the 2009 Determination as companies which had obtained a licence after 1 January 2006 and did not have a network running prior to this date, and the Determination created an asymmetric interconnection system whereby new operators enjoyed higher (annually scaled-back) termination rates than older operators.

In terms of the 2009 Determination, up to 31 December 2010 there was a disparity of at least 5% between mobile and fixed termination pricing and between old and new players. Near-end fixed termination moved from a rate of NGN10.80 in 2009 to NGN8.84 in 2012, while existing networks were terminating fixed calls among themselves at a rate of NGN8.20 in 2012 (also down from the 2009 figure of NGN10.80). Similarly, new-entrant mobile termination was reduced from NGN11.40 in 2009 to NGN8.84 in 2012, while the rate for older operators went from NGN11.40 in 2009 to NGN8.20 in 2012. SMS termination for new players was scaled down to NGN1.32 by 2012, while existing operators were to terminate SMSs at NGN1.02 (which then became the effective rate for all operators on 31 December 2012).

Table 6: NCC-mandated interconnection rates for new entrants, in NGN

	2009	2010	2011	2012
Fixed termination (near-end)	10.80	10.12	9.48	8.84
Fixed termination (far-end)	9.10	10.12	9.48	8.84
Mobile termination	11.40	10.12	9.48	8.84
International termination	10.80	10.12	9.48	
SMS termination		1.94	1.63	1.32

Source: (NCC, 2009)

The interconnection regime since 2009 has not led to improved fortunes for fixed services.

While the interconnection regime between 2009 and 2012 was put in place to encourage development of fixed services, it appears to have had the opposite effect, as the fixed market is in decline, with a number of operators facing collapse. In the light of this, the NCC contracted the consultancy PricewaterhouseCoopers (PwC) in 2012 to develop a model for voice-based interconnection, based on current estimates and operator realities, in order to address pricing imbalances within the industry.

(In March 2013, after the conclusion of the period covered by this RIA report, the NCC used the PwC exercise, which included stakeholder consultations, as the basis for announcement of termination rate for voice services provided by new entrants and small operators in Nigeria at NGN6.40 effective 1 April 2013 (NCC, 2013). New entrants are operators who have been in the market three years or less, while small operators are those with less than 7.5% subscriber

market share. This new rate will then drop to NGN5.20 in April 2014 and NGN3.90 April 2015. The termination rate for voice services provided by older operators was determined at N4.90 from 1 April 2013. The rate will be reduced by NGN0.50 every 12 months until 2015.)

Mobile Retail³

Compared to other countries in Africa, Nigeria is an average performer on mobile pricing, ranking 17th out of 46 countries in terms of the affordability of prepaid mobile products from the dominant operator, according to the 2012 RIA Pricing Transparency Index: Prepaid Mobile (RIA, n.d.). The cheapest product from a dominant operator (MTN Nigeria), for the OECD low-user basket (see OECD, 2010) based on 40 calls per month, had a price of US\$5.9 in the 2012 RIA Pricing Transparency Index, compared to the cheapest product of a dominant operator in Mauritius (the top-ranked country according to this measure), which stood at US\$2.4. Meanwhile, for the cheapest prepaid product in the country across all operators, Nigerian prepaid mobile ranked in 13th position in affordability, with Nigeria's cheapest product being Glo's Flexi offering, which in September 2012 had a dynamic zone tariff of NGN8.40 on-net and NGN12.76 off-net. Table 7 shows the September 2012 price comparison for the 20 top-ranked (for prepaid mobile) African countries covered by the RIA Pricing Transparency Index.

Nigeria ranks 17th out of 46 African countries in terms of the cost of its cheapest mobile prepaid product from a dominant operator.

Table 7: Monthly prepaid mobile costs (OECD low-user basket) in US\$, September 2012

Country	Cheapest product from dominant operator		Cheapest product in country	
	Rank	US\$	Rank	US\$
Mauritius	1	2.39	6	2.39
Kenya	2	2.61	3	1.90
Namibia	3	2.74	7	2.74
Egypt	4	2.85	8	2.85
Sudan	5	3.08	1	1.17
Ethiopia	6	3.33	10	3.33
Ghana	7	3.38	9	3.28
Libya	8	3.90	14	3.90
Rwanda	9	4.28	15	4.28
Tunisia	10	4.30	2	1.81
Guinea	11	4.62	4	1.93
Sierra Leone	12	5.04	12	3.88
Benin	13	5.21	17	5.21
Tanzania	14	5.40	11	3.75
Uganda	15	5.51	16	4.51
Congo Brazzaville	16	5.63	18	5.63
Nigeria	17	5.85	13	3.89
Algeria	18	6.21	5	2.28
Mozambique	19	7.20	20	7.20
Mauritania	20	8.02	23	7.77

Source: RIA Pricing Transparency Index data 2011-12
US\$FX rate = average in 2012

³ This sub-section on mobile retail was authored by RIA's Enrico Calandro.

Among MTN's countries of operation – its entire network in 16 African countries and Iran – mobile prices in Nigeria are the 5th most expensive, as shown in Table 8.

Table 8: MTN implied price ARPU/MOU (in US\$ cents per minute)

Country	2011	2012
Sudan	3.6290	2.1774
Uganda	5.2239	5.5224
Rwanda	5.7576	6.0656
Iran	12.7419	6.2903
Guinea-Conakry	6.4865	6.3953
Liberia	14.5588	10
Ghana	12.7273	11.0909
Botswana	12.9870	11.9481
Ivory Coast	12	12.8000
Benin	13.5385	13.1148
Cameroon	17.3810	13.3333
Zambia	15.2941	14.5455
Nigeria	17.6364	14.7273
G-Bissau	28.2609	16
Congo-B	15.8055	17.5410
South Africa	27.1014	20.1449
Swaziland	26.6667	23.1915

Source: RIA Pricing Transparency Index data 2012, derived from corporate reports

Pricing competition has forced GSM call pricing down.

Due to price pressure, there has been a general downward trend with respect to the pricing of GSM calls in Nigeria in recent years. MTN Nigeria reduced its tariffs in February 2011 via introduction of a new tariff plan based on three tariffs: MTN PAYGO, MTN TalkOn and MTN XtraValue. These plans differentiated MTN's offerings based on on-net and off-net tariff periods. MTN then effectively increased its pricing in March 2011 when it eliminated the XtraValue tariff, which had been the cheapest of the three new plans. Glo, the cheapest operator in the country, reduced its tariffs in October 2011 with the introduction of Yan-Me-More, which provided the country's lowest on-net price (NGN9 per minute) and lowest off-net price (NGN15 per minute), and with the introduction of Glo flexi, a zone tariff. In response, MTN slashed its prepaid on-net, off-peak prices by introducing the Super Saver Tariff Plan and FunLink Reloaded, priced from NGN30 to NGN18 per minute (including free voice calls during off-off-peak periods). However, MTN did not reduce off-net prices, revealing a dominant market position (and the regulator's failure to reduce interconnection pricing down to cost-based mobile termination rates). In February 2012, Airtel reduced its tariffs with the introduction of Steady Steady! at a flat rate of NGN24 per minute. Between June 2012 and September 2012, in a new attempt at gaining market share, Glo introduced the Glo Gista tariff and reduced SMS prices from NGN8 to NGN3 on-net and NGN5 off-net. Apparently threatened by this aggressive price reduction, MTN also significantly reduced its off-net prices, with new tariffs (to match Glo Gista off-net tariffs) of as low as NGN18 per minute via introduction of MTN PayGo, MTN Pulse and MTN Smooth.

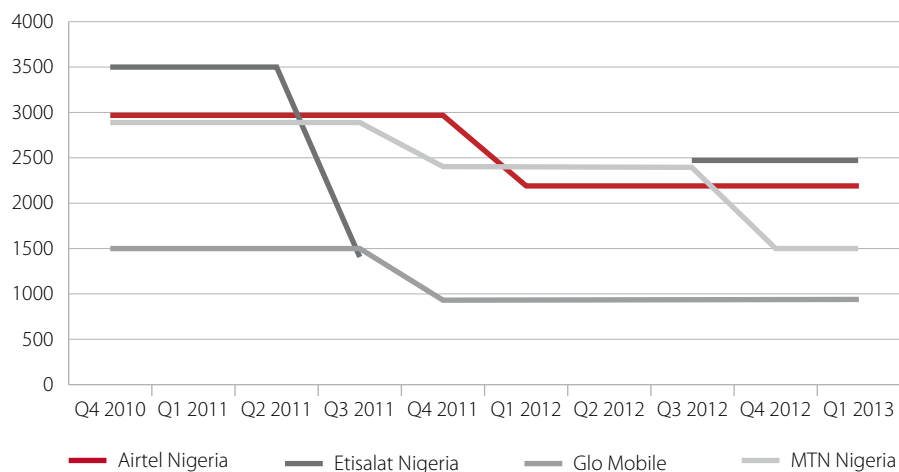


Figure 10: Nigerian monthly prepaid mobile costs (OECD low-user basket) in NGN

Source: RIA Pricing Transparency Index data 2010-12

Broadband

After years of massive undersupply of bandwidth, the aforementioned arrival in Lagos of three new submarine cable systems in as many years has provided competition to SAT3 and resulted in cuts in wholesale international data prices. The launches of MainOne, Glo-1 and WACS have reportedly brought the price of wholesale data down from US\$2,000-US\$3,000 per MB at STM1 (or below) to US\$100 per MB on average (Gross, 2011). The main drivers of broadband demand are corporates, who need to connect their branches, and mobile phone users.

However, while the country has a fledgling internal network consisting of radio backhaul, VSAT and fibre optics, there is still a significant cost to moving data inland from the international submarine cable landing points. While ISPs are reporting good savings, of up to 50%, in wholesale international bandwidth tariffs, these savings do not appear to have been passed through to end-users, with retail prices remaining high. And while the quality and speed of domestic internet connectivity is improving, broadband speeds in the order of the government's self-imposed target of 1.5 mbps are still not common.

Three new competitors to SAT3 introduced wholesale international data price cuts.

There is still a significant cost to moving data inland from the submarine cables.

Part Two - Understanding Demand

This section draws on the nationally representative RIA Household and Individual ICT Access and Usage Survey conducted in Nigeria in 2012. The only demand-side survey of its kind, it provides insights into not only the levels of access to ICTs but also the nature of usage and the amounts users are spending on ICTs. Importantly, the RIA 2012 ICT Survey also provides data on those marginalised from services, the reasons for their non-usage, and the willingness of individuals to pay for services they would like to access. Because the RIA ICT Survey gathered extensive additional household information, including income and expenditure, through a method that was nationally representative, the findings can be disaggregated into rural and urban settings, on gender lines, and between users at different income levels – information that is simply not available from national supply-side data or demand-side surveys that are not nationally representative (see RIA (2012) for more on the Survey methodology).

Access

Household Access

The results of the demand-side RIA Household and Individual ICT Access and Usage Survey for 2012 show that the majority of households in Nigeria continue to be excluded from the full range of communication services. Radio (69.5%) and TV (53%) have the greatest penetration at household level in Nigeria, and fixed telephony (0.3%) and dedicated household internet (3.4%) are the least-accessed ICT tools, as Table 9 shows. The extremely low penetration of fixed phones in Nigeria is evidenced by the fact that a meagre 65,914 households are equipped with this service, proof of the dire state of that sector.

Subscription television has double the household penetration of computers.

Table 9: Nigerian household access to ICT

	Number of households	% of households
Radio	15,270,063	69.5
TV (free-to-air)	11,644,796	53
Satellite/cable TV decoder (subscription)	2,834,299	12.9
Desktop PCs and laptops	1,450,107	6.6
Mobile telephone	1,054,623	4.8
Fixed household internet	747,025	3.4
Fixed telephone	65,914	0.3

Source: RIA ICT Survey data 2011-12

Several aspects of the results in Table 9 are striking. It is notable that the penetrations of both subscription TV and computers, while low, exceed fixed household telephones (further evidence of the poor situation in that sector). The strong profile of satellite/cable television (12.9% of households) is clear, in that it has twice the household penetration

of desktop PCs and laptops (6.6%). Subscription television is being massively promoted via the DSTV and GOTV products of Multichoice Nigeria (a branch of South Africa's Multichoice Africa), and the StarTimes digital terrestrial pay-TV product offered by NTA StarTimes (the aforementioned joint venture between state TV broadcaster NTA and Star Communications of China). Together, these companies offer over 120 channels, including British Premier League soccer, local and foreign movies, and international news channels.

Also notable is that, to the extent that fixed telephones were ever used in Nigeria, the mobile has clearly replaced fixed as a means of dedicated household telephony, confirming the failure of fixed operators to fill the latent demand for telephone usage at household level. The main providers of dedicated telephones used in households are indeed mobile operators, as shown in Figure 11. MTN and Etisalat have a household telephone market share of 33% and 9% respectively (based on RIA Nigeria ICT Survey data), while the main private fixed-wireless companies, Multi-Links, Visafone and Starcomms, all have the same market share statistic of 0.1% each. From this it is obvious that there has been an evolution of mobile operators into the primary providers of telephone services to households – though it is yet to be seen whether these mobile companies can (or will) develop the products and solutions necessary to maximise the potential of this market segment.

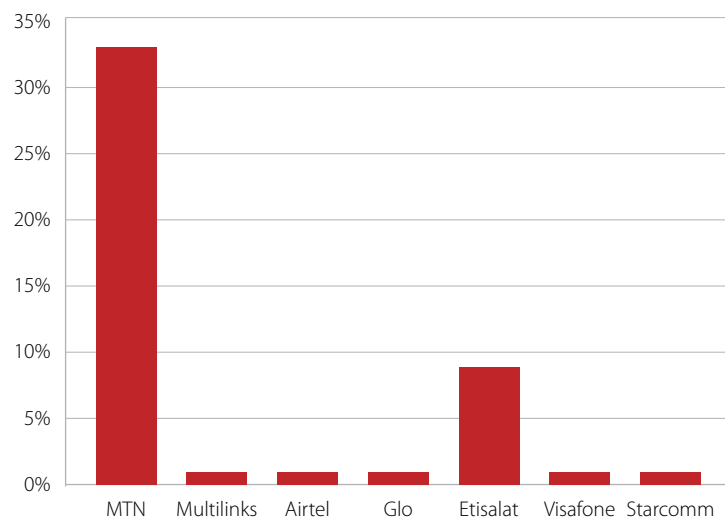


Figure 11: Main providers of Nigerian households phones (% of households)

Source: RIA ICT Survey data 2011-12

The RIA Nigeria 2012 ICT Survey found that 63% of individuals surveyed own a personal mobile phone, which, when coupled with the paucity of fixed-lines, explains why most households do not have a dedicated phone, as shown in Figure 12. In other words, even where fixed service is available, since a member of the household has a mobile phone, the need to acquire a fixed phone for the household is not strong. Other reasons given for the extremely low penetration of household fixed-service phones are: affordability; irregular income; non-availability of a connection (arising from the collapse of the state-owned carrier NITEL and the poor geographic penetration of the private fixed operators); and the long wait for a fixed connection.

Mobile is the predominant mode of household telephony access.

Though fixed telephone penetration is marginal, demand for fixed-line services is not dead.

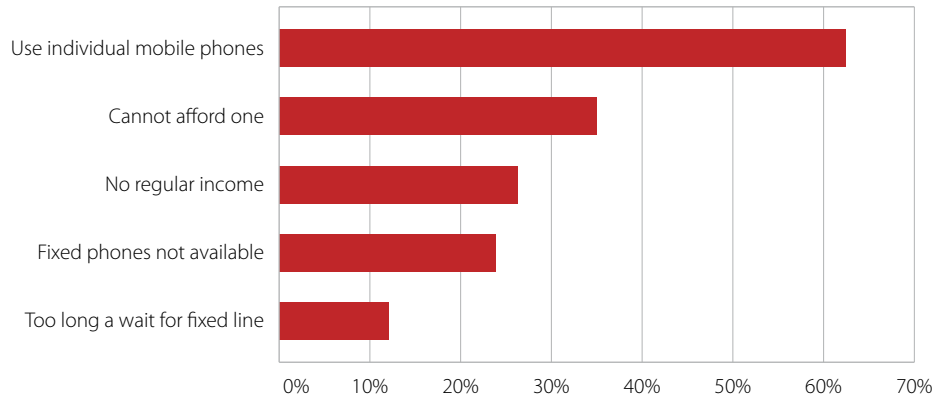


Figure 12: Households' reasons for not having a fixed phone

Source: RIA ICT Survey data 2011-12

Among RIA Nigeria ICT Survey households that do have a fixed phone, the primary motivations cited are cheaper calls (62%) and availability (50%), which suggests continuing household demand for fixed telephony as a communications solution (see Figure 13).

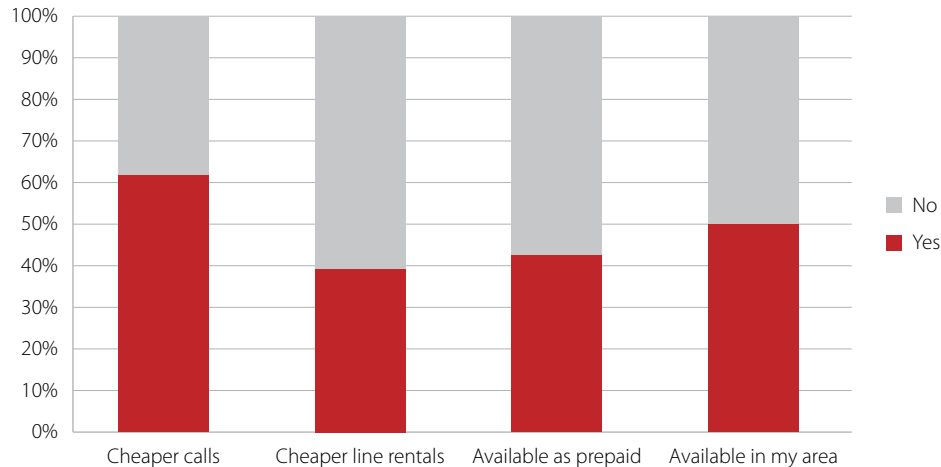


Figure 13: Motivation for acquiring fixed household telephone

Source: RIA ICT Survey data 2011-12

According to the RIA Survey findings, average household expenditure on fixed telephones and fixed internet in Nigeria is US\$24.51 per month and US\$39.59 per month respectively⁴. (Fixed-line expenditure is how much was spent by the

4 All expenditure figures are based on PPP.

household for calls and line rentals in the month preceding the RIA survey, while internet expenses are how much was spent in the same month on fixed subscription and usage.) Meanwhile, individual respondents said they spend on average US\$20.15 per month on mobile subscriptions and airtime.

When asked how their actions would change if calls were cheaper, households said they would in general either make more calls (42.6%), or use the saved cash for other expenses (29.7%), or a combination of both (17.5%), as shown in Figure 14.

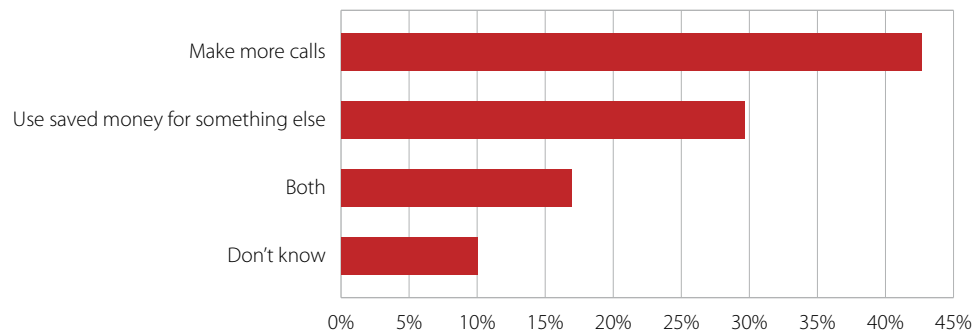


Figure 14: Expenditure sensitivity (what households would do if calls were cheaper)

Source: RIA ICT Survey data 2011-12

For households that have an internet connection, the mobile networks were found to be the primary medium of access, with 63.4% of households with an internet connection using the mobile phone to connect. All the mobile operators (GSM and CDMA) offer mobile internet directly to the mobile handset. In addition 56.9% of households use wireless mobile modems (dongles), which are offered by mobile operators, fixed-wireless companies and some ISPs, for dedicated internet connections. Nearly half (46.6%) of households with dedicated internet connectivity connect via fixed wireless broadband products (see Figure 15).

Even in the home, mobile internet via a mobile phone or dongle still trumps fixed-line internet access.

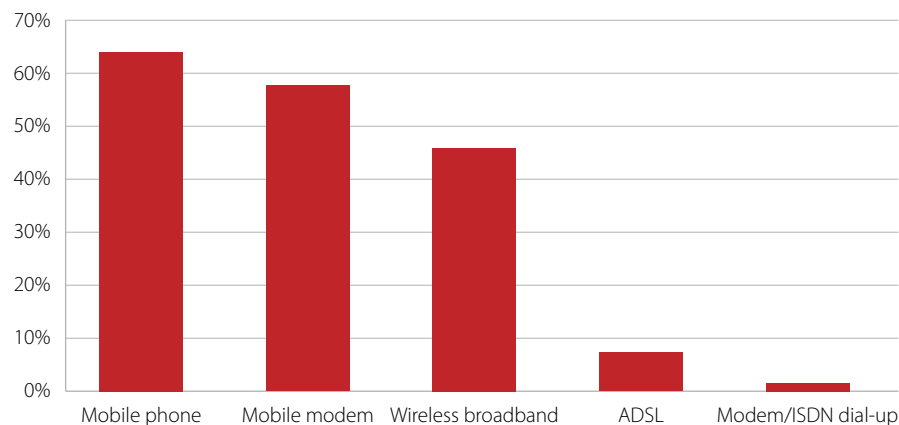


Figure 15: Type of dedicated household internet connection (multiple responses)

Source: RIA ICT Survey data 2011-12

The RIA Survey found only 7.6% of households with dedicated internet using wired ADSL for access. (ADSL is offered by NITEL, whose liquidation has been set in motion by the national government.) The trend towards dedicated household use of mobile internet is not peculiar to Nigeria. Individuals across the continent are turning to mobile phones and other mobile devices for internet usage. This phenomenon is pervasive in all the African countries surveyed by RIA, except in Tanzania, where there is a functional national carrier, and in South Africa, where ADSL penetration, riding on Telkom's wireline infrastructure, is somewhat popular (see Figure 16).

The absence of fixed telephone lines in Nigeria, which deliver ADSL products, has severely limited broadband penetration.

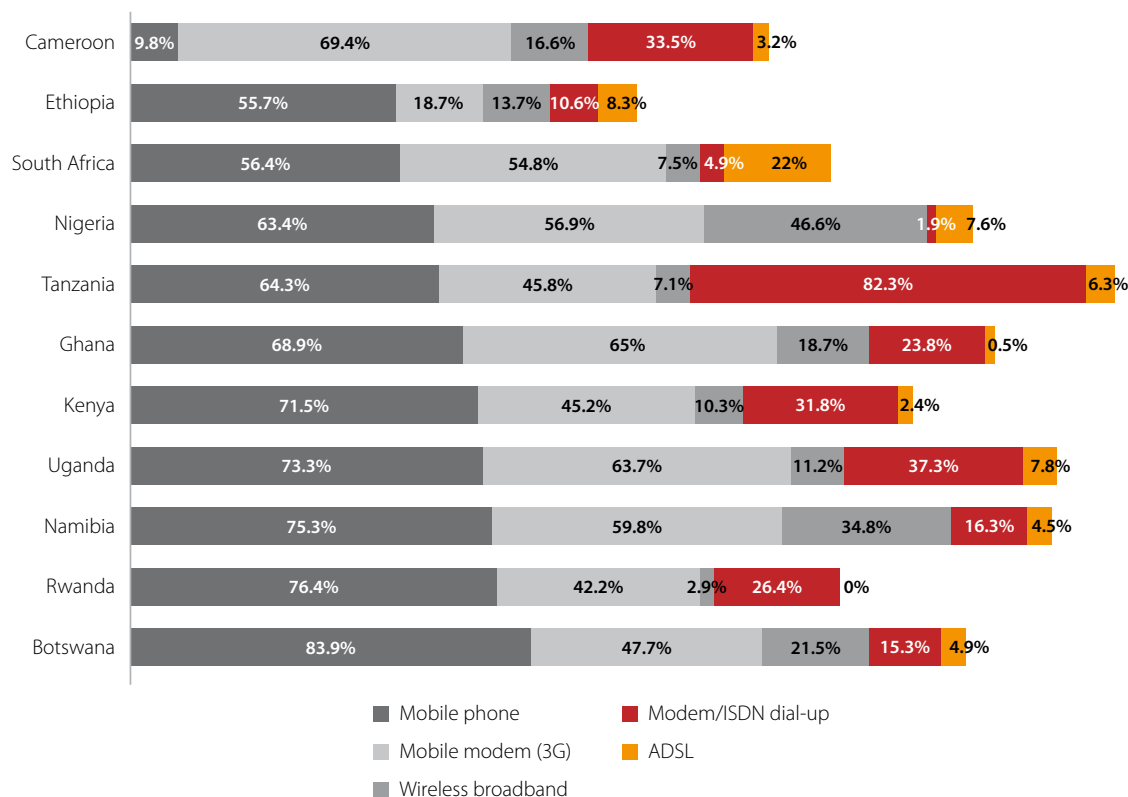


Figure 16: Comparative RIA findings on modes of household dedicated internet access (multiple responses, from internet-using households)

Source: RIA ICT Survey data 2011-12

There is still generally poor penetration of dedicated household internet connections across Africa, primarily due to: the absence of fixed telephone lines over which household internet access products (e.g. ADSL, ISDN) are typically delivered; the substitution of fixed telephones with mobiles; the low penetration of computers; and inadequate power supply. On this last point, nearly a third of the households surveyed by RIA in Nigeria are not connected to the national electricity grid, as shown in Figure 17, and a connection to the grid does not even guarantee regular power supply. Eleven per cent of households surveyed depend primarily on generators for power.

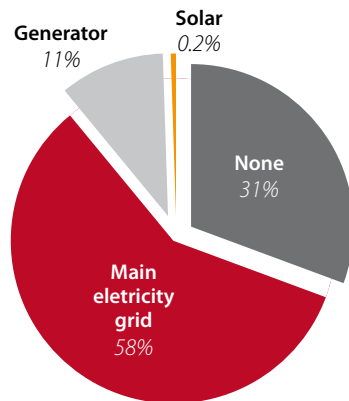


Figure 17: Household electricity access in Nigeria

Source: RIA ICT Survey data 2011-12

Key factors listed by Nigerian respondents as barriers to possession of dedicated household internet connection include:

- ignorance regarding use (given as the main reason by 87% of respondents not using the internet, with 57% saying they do not know what the internet is);
- lack of a computer or internet connection (74% of those not online);
- cost (67% of those not online say access products are simply too expensive); and
- slow or limited bandwidth (cited by 14% of non-internet users).

Ignorance regarding how to use the internet was the barrier to internet penetration most-cited by RIA Nigeria Survey respondents.

Low computer and fixed-line penetration undermines internet usage.

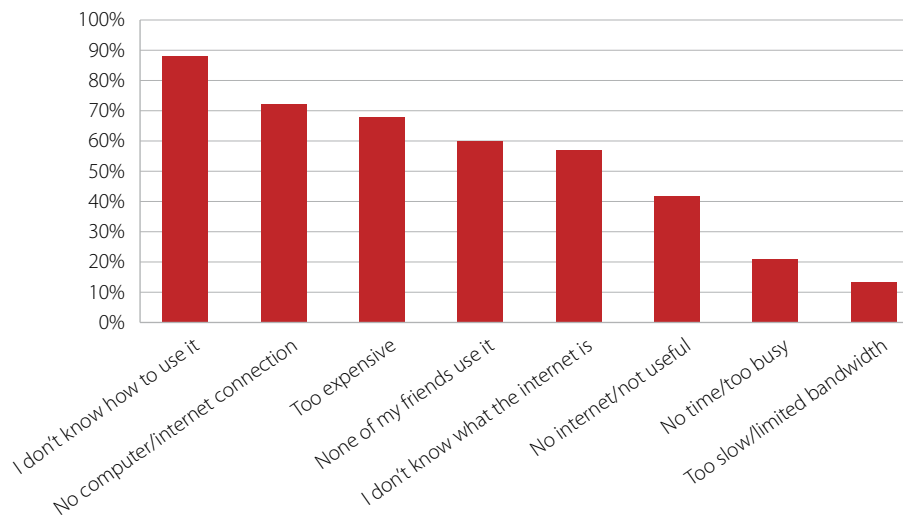


Figure 18: Reasons for not using the internet (multiple responses)

Source: RIA ICT Survey data 2011-12

Despite the many barriers to dedicated household internet connectivity in Nigeria, monthly expenditure on internet by connected households is relatively strong, as Table 10 shows. The RIA Survey data show that 16.1% of households with dedicated internet spend roughly NGN1,500 (US\$9.38) on it every month, while almost an equal number (15.4%) spend roughly NGN3,000 (US\$18.75).

Table 10: Nigerian household monthly expenditure on dedicated internet (subscription and usage)

% of connected households	Monthly expenditure (NGN)	Monthly expenditure (US\$)
16.1	1,500	9.38
15.4	3,000	18.75
7.6	6,000	37.50
6.6	10,000	62.50
6.2	4,000	25
4.8	3,400	21.25
4.5	15,000	93.75
3.5	1,000	6.25
3.1	2,000	12.50
3.1	600	3.75

Source: RIA ICT Survey data 2011-12

Furthermore, 62% of Nigerian households without dedicated Internet connectivity say they are eager to use the internet if it can be made available within 30 minutes from where they reside. And 14% of non-internet-households say they are willing and able to spend roughly NGN500 (US\$3.12) per month on internet usage, while 12% would pay NGN1,000 (US\$6.25) per month, and 5% would pay NGN2,000 (US\$12.5) per month. The minimum amount that would be paid is NGN10 (US\$0.06) per month, while the maximum is NGN40,000 (US\$250) per month. Altogether, new subscriber households would be willing to pay, on average, the relatively high amount of NGN1,493 (US\$9.3) per month for dedicated household internet usage.

These findings on household demand for dedicated internet services suggest a market opportunity, if operators can design and implement optimal business models. It may be safe to infer that more Nigerian households, if the affordability levels cited by the RIA ICT Survey respondents are considered, will make use of dedicated household internet. To widen household broadband uptake, policy measures are clearly needed to promote market awareness by operators and to build accessibility, affordability and high-speed provision for consumer households.

Desktop Computers and Laptops

As with fixed telephony and the dedicated household internet, household computer penetration in Nigeria is very low. Only 8% of individuals interviewed in the RIA Nigeria ICT Survey of 2012 said they use a desktop PC or laptop computer, and of these, 73% said they use the computer at home, 58% at a friend's place, and 46% at work, as shown in Figure 19.

Willingness exists among non-internet-connected households to pay, on average, roughly US\$9 per month on internet if they were to get access.

The RIA Survey found that only 8% of Nigerians use computers.

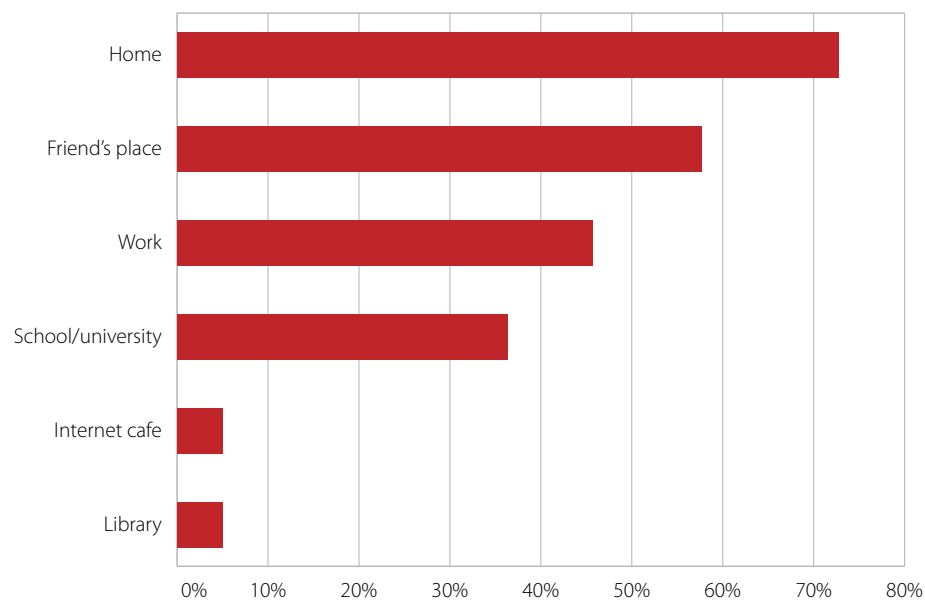


Figure 19: Location of computer usage (multiple responses)

Source: RIA ICT Survey data 2011-12

The laptop is the dominant computer device (cited by 59% of computer users), compared with 12% for the desktop PC, further highlighting the prominence of mobility.

Individual Use

Mobile Communications

Mobile adoption and penetration continue to be strong in Nigeria. Available statistics show that 107.85 million Nigerians have at least one active mobile phone, with virtually all connections (99%, according to the RIA Nigeria 2012 ICT Survey) being prepaid. This mobile phone ownership figure represents 66.4% of the 2011 population of 162.5 million (World Bank, n.d.), and seems to correspond with the official figure for registered SIMs of 110.4 million (NCC, n.d.). (However, a quarter of the Nigerian mobile phone owners surveyed by RIA say they own more than one active SIM, suggesting that the actual number of SIMs is probably around 130 million.)

Among individuals who do not currently have a mobile phone, affordability is the main reason cited (by 76%), followed by power supply – with 57% of non-mobile-owners saying that they do not have electricity with which to charge a phone even if they were to get one (see Figure 20). Other reasons given for not having a mobile phone are that a lack of people to call (17%), a lack mobile coverage where the individual presently resides (15%), a phone breakdown (14%), or theft of the phone (7%). (It must be noted that it seems arguable whether 17% of non-mobile-owners saying they do not have anyone to call represents a candid response.)

About two-thirds of Nigerians own a mobile phone, and a quarter have more than one SIM, meaning that there are probably roughly 130 million active SIMs in the country.

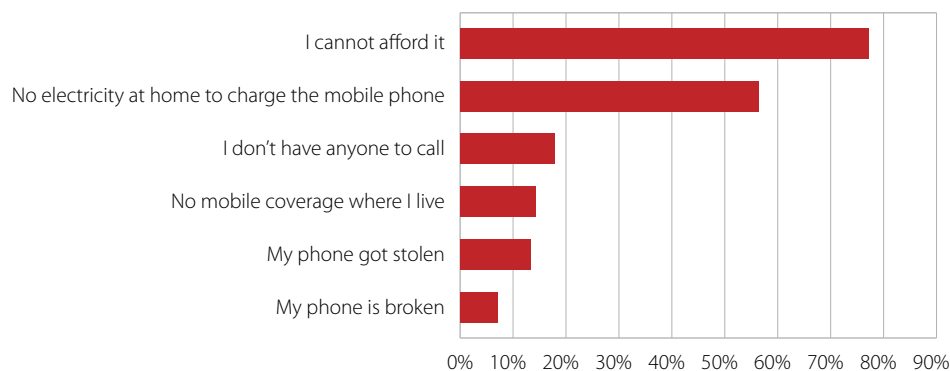


Figure 20: Reasons for non-ownership of a mobile phone (multiple responses)

Source: RIA ICT Survey data 2011-12

The RIA Nigeria 2012 CT Survey data suggest that nearly 20 million new subscribers would join the mobile networks within 12 months if affordability concerns and electricity problems could be addressed – that’s 35.9% of non-mobile owners (see Table 11), who currently number around 54.6 million people.

Table 11: Intention, among non-mobile-owners, to acquire a mobile

Response	%
No	27.5
Within the next year	35.9
Within the next 6 months	22.6
Within the next 2 years	13.9

Source: RIA ICT Survey data 2011-12

Mobile subscribers are loyal to their providers in spite of at-times-poor quality of service (QoS).

The RIA Nigeria ICT Survey also found that 92% of mobile subscribers say they are happy with their current mobile operator, and only 21% would consider changing their provider even if they could keep their number. From this finding, it appears that mobile owners are loyal to their operator despite the general perception of poor network provisioning – highlighted by the aforementioned NCC sanctions against mobile companies – and that the impact of number portability (begun in late April 2013, as mentioned above) may be limited.

Internet/Broadband

As stated earlier, penetration of dedicated household internet is low in Nigeria. Only 3.4% of households (747,025 homes) have a fixed internet connection. The low levels of PC diffusion and fixed lines have created a scenario whereby the mobile handset is now the principal device for accessing the internet, and mobile internet is usually an individual access method rather than a shared household access method. RIA found that 62% of internet users go online primarily with a personal mobile phone. Commercial internet locations (cyber cafes) are the second most popular (45%) means, followed by shared desktop computers, laptops or other mobile devices including tablets (see Figure 21).

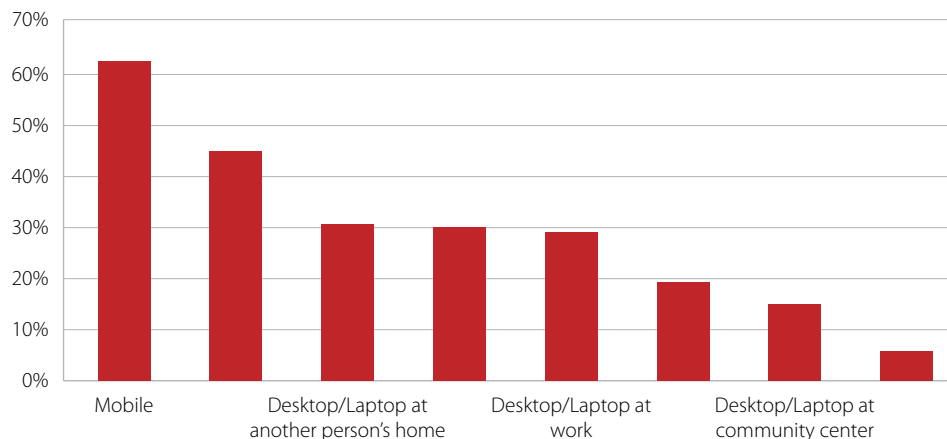


Figure 21: Primary individual user means of access to the internet in the last 12 months (multiple responses, among internet users)

Source: RIA ICT Survey data 2011-12

Public Payphones

Public payphones include phone booths and call boxes (typically via fixed-line connections) and umbrella phone stand operators (typically using one of the mobile networks). The RIA Nigeria 2012 ICT Survey results show that 79% of the individual respondents do not use payphones at all. The apparently waning interest in public payphones seems to be occurring in tandem with the decline of the national fixed telephone network. Over 70% of respondents not using public payphones cite ownership of a mobile phone as the principal reason why they do not use public phones. Privacy, convenience, and safety concerns are also highlighted by non-payphone-users as reasons for non-use (see Figure 22).

The vast majority (79%) of Nigerians do not use public payphones, with ownership of a mobile phone the most frequently cited reason for non-use of payphones.

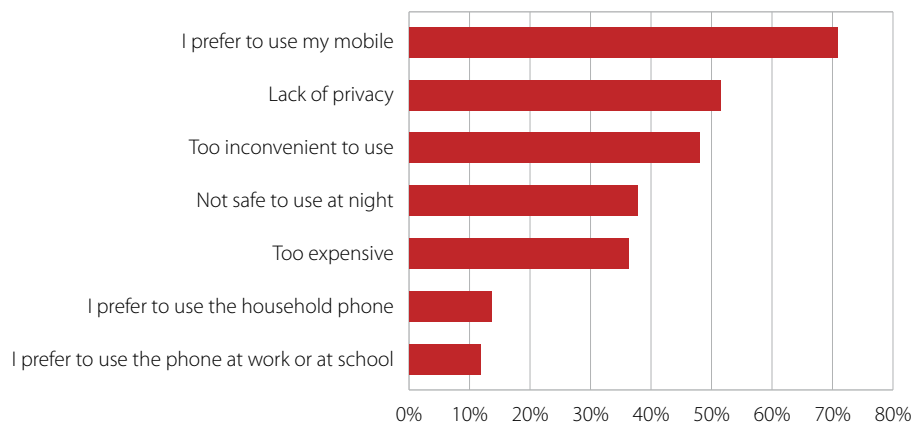


Figure 22: Reasons for not using a public payphone (multiple responses)

Source: RIA ICT Survey data 2011-12

Over 90% of individuals surveyed who use public phones make their calls at an umbrella point. And among those who use public phones, the main drivers are lower cost and lack of ownership of a personal mobile phone. Some people (20%) who do have a mobile cite irregular electricity with which to charge their mobiles as a reason they use payphones (see Table 12).

Table 12: Main motivation for using public payphones

Reason	%
Cheaper than mobile	26%
Do not have a mobile phone	24%
Difficulties charging the battery of mobile	20%
Easier than having to recharge mobile airtime	17%
When I don't have enough credit on my mobile	6%

Source: RIA ICT Survey data 2011-12

Proximity is mentioned by 67% of people as the main reason for choosing one particular payphone over another. The ideal public payphone, as highlighted by users, is close to home (78%) or close to work (17%). The other influence on choice is the price of calls (mentioned by 27% of the individuals who use payphones). On average, public payphone users spend NGN1,136 (US\$7.10) every month on calls. The median spend is NGN575 (US\$3.59), while the maximum is NGN10,000 (US\$62.5) a month, according to the RIA Survey findings.

Use

Mobile Communications

According to the RIA Nigeria 2012 ICT Survey, the two principal activities conducted with the mobile handset by individuals are voice calls (99.2%) and “flashing” (81%). (Flashing is when a user initiates and ends a call prior to it being answered or sends a “please call me” message.) Figure 23 below highlights other common individual activities with the mobile handset, including sending and receiving SMSs, playing games, listening to the radio or music, taking photos or videos, and transferring airtime.

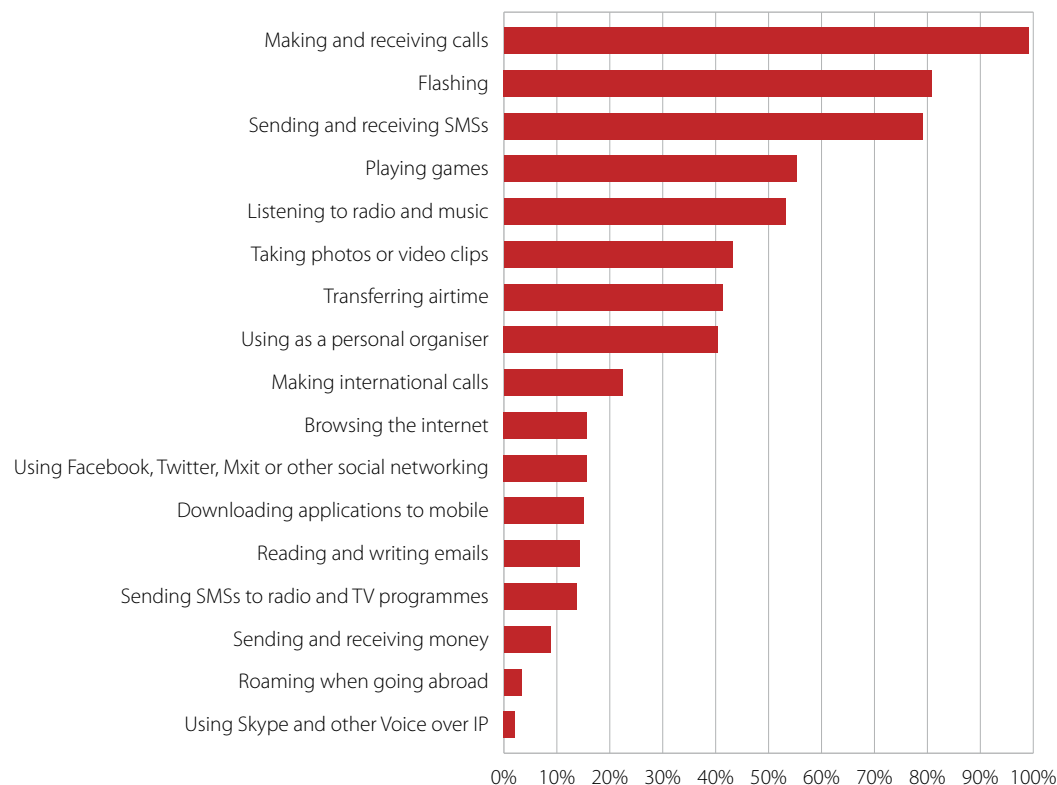


Figure 23: Uses of the mobile phone handset (multiple responses)

Source: RIA ICT Survey data 2011-12

Individual motivations for using mobile phones cover a wide spectrum of motivations, as outlined in Figure 24. The most pervasive motivation (76% of individual users) is to check on the day-to-day safety and well-being of loved ones, while 62% say their phone makes them feel more secure. This highlights the security risks within Nigeria, and the perception of the mobile as a tool to help in enhancing personal safety and support for friends and family.

The mobile phone is mostly used to check on the well-being and safety of loved ones.

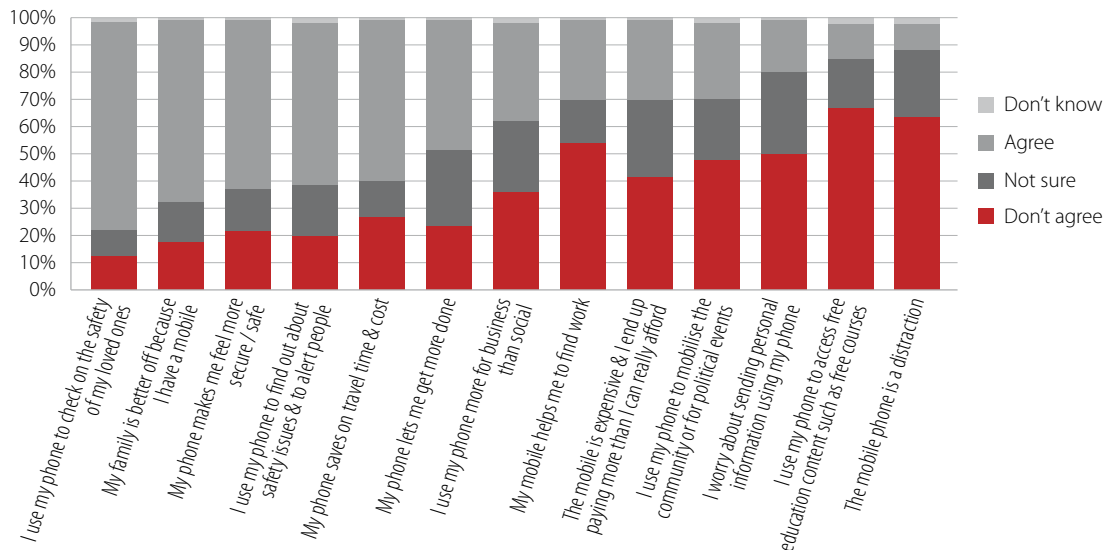


Figure 24: Motivations for using mobile phone handset (multiple responses)

Source: RIA ICT Survey data 2011-12

It was found that a large number (66%) of mobile owners in Nigeria believe they and their families have been better off since they began using mobile telephony, and that the mobile is a device that helps with personal efficiency. Cost is cited by many mobile subscribers (50%) as the main limitation on their calling activity (see Figure 25). Coverage (9%) is no longer a primary reason preventing an increase in calls by individual mobile users – apparently due to the 85% population coverage of the GSM networks at present (Analysys Mason, 2011).

The main constraint on mobile usage cited by users is cost.

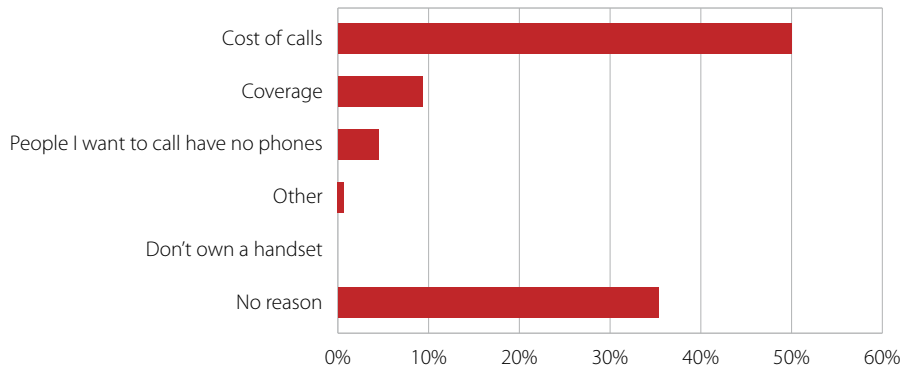


Figure 25: Reasons why more calls are not made

Source: RIA ICT Survey data 2011-12

If calls were somewhat cheaper, 60% of mobile subscribers say they would make more calls; 21% would use the saved money for something else; and 20% would do both. If the cost of calls was reduced by 50%, nearly half of all individual mobile owners would double their usage.

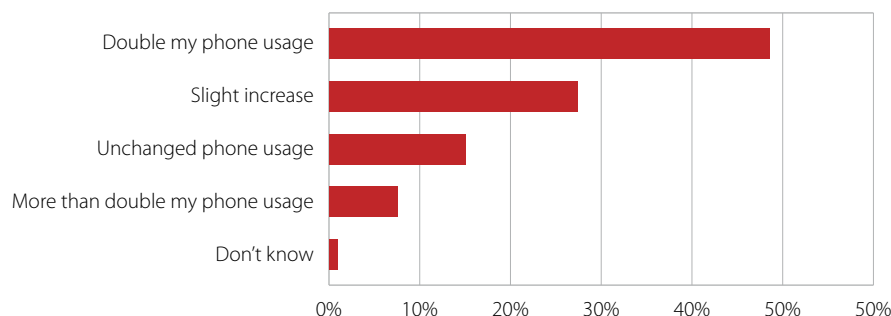


Figure 26: What mobile subscribers would do if costs were reduced 50%

Source: RIA ICT Survey data 2011-12

Meanwhile, if the cost of mobile calls was doubled, 62% of subscribers would reduce phone usage by at least half.

Internet/Broadband and Personal Computers

Table 13 below shows that Nigerian individual computer (desktop or laptop) penetration (at 7.5% of individuals aged 15 and above) is poor in the African context, as Nigeria lags behind the following five other RIA study countries: South Africa, Kenya, Cameroon, Namibia and Ghana.

Table 13: Comparative RIA findings on individual computer access

	15+ who use a computer	Location where the computer is used (multiple responses)					
		Work	School, university	Library	At home	Internet cafe	At a friend's place
South Africa	29.1%	40.2%	22.8%	6.1%	61.1%	29%	20.7%
Kenya	21.2%	36.8%	40.2%	16.9%	56%	68.8%	45.9%
Cameroon	15.1%	20.7%	33.4%	7.7%	38%	63.5%	35.9%
Namibia	13%	60.6%	36.7%	28.5%	73.1%	28.4%	45.5%
Ghana	10%	42.9%	44.5%	6.2%	72.6%	54.4%	24.9%
Nigeria	7.5%	45.9%	36.1%	4.5%	73.1%	61.8%	58.3%
Uganda	4.8%	45.5%	51.4%	25%	35.7%	57%	60.9%
Rwanda	3.5%	54.5%	35.3%	18.9%	59.4%	45.2%	25.1%
Ethiopia	2%	34.1%	48.4%	9.2%	23.9%	28.5%	5.3%
Tanzania	1.9%	41%	23.6%	8.5%	47.7%	65.8%	27.8%

Source: RIA ICT Survey data 20112

The share of individuals 15 years of age or older who use a personal computer was further disaggregated to locate any gender disparities. As shown in Table 14, female usage of a computer in Nigeria is between one-third and one-quarter that of their male counterparts, while female ownership of laptops is about half that of males. The poor level of female usage of computers requires further investigation and possible policy intervention.

Table 14: RIA comparative data – distribution of computer ownership and usage by gender

	Share of individuals (15+) who use a computer			Share of computer users (15+) who own a personal desktop			Share of computer users (15+) who own a personal laptop		
	All	Male	Female	All	Male	Female	All	Male	Female
Cameroon	15.1%	15.6%	14.6%	30.2%	35.2%	25.3%	13.2%	21.2%	5.2%
Ethiopia	2%	2%	2%	12.1%	10.7%	13.8%	15.7%	18.7%	11.8%
Ghana	10%	14.2%	6.6%	48%	39.8%	62.5%	41.1%	55.1%	16.3%
Kenya	21.2%	29.3%	16.2%	35.7%	34.4%	37.1%	23.8%	25.7%	21.7%
Namibia	13%	15.9%	10.8%	30.8%	39.8%	22.7%	57.6%	58.5%	56.6%
Nigeria	7.5%	11.2%	3.3%	12.2%	12.4%	11.7%	58.6%	65.1%	33.9%
Rwanda	3.5%	2.5%	4.5%	45.3%	14.6%	62.4%	7.8%	16.5%	3%
South Africa	29.1%	36.2%	23.1%	44.4%	42.8%	46.4%	34.6%	39.4%	28.8%
Tanzania	1.9%	1.7%	2%	18.6%	24.2%	14.8%	43.2%	77.1%	20.1%
Uganda	4.8%	5.6%	3.7%	33.8%	31.7%	37.7%	19%	19.3%	18.5%

Source: RIA ICT Survey data 2011-12

Female computer usage is less than a third of the usage level for males.

More than half (58%) of Nigerian internet users have been online for three years or more.

Among Nigerian individual internet users, 58% have been online for three years or more, while 16% have been introduced to the internet only in the past 12 months (the 5th lowest recent adoption rate among the 11 RIA survey countries shown in Figure 27).

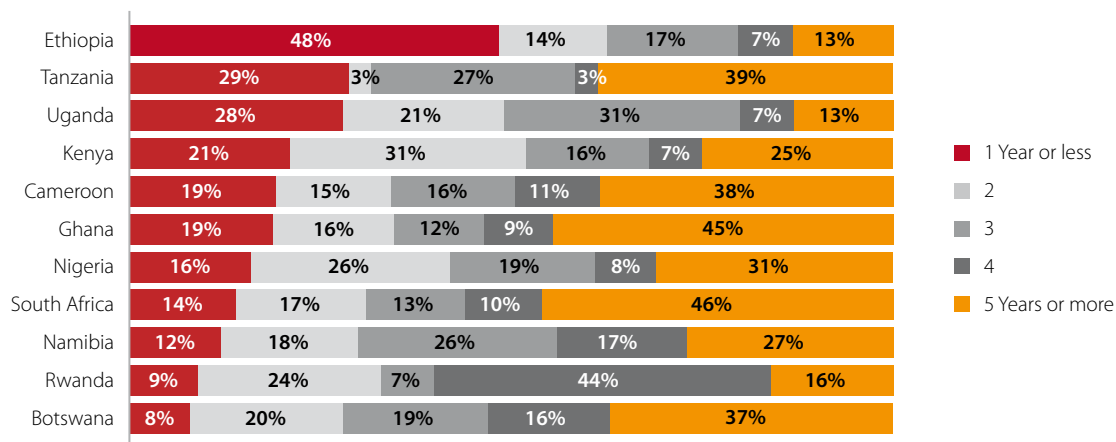


Figure 27: Period since first use of internet

Source: RIA ICT Survey data 2011-12

The primary use of the computer by individuals in Nigeria is for browsing the internet, with 76% of respondents highlighting this as the principal activity (see Figure 28). Tech-savvy individuals extend the use of the computer beyond browsing by engaging in spreadsheet analysis (49%) and programming (49%) respectively. The computer is also used for remixing online content such as music and video clips (25%), writing letters and editing documents (6%), and playing games (5%).

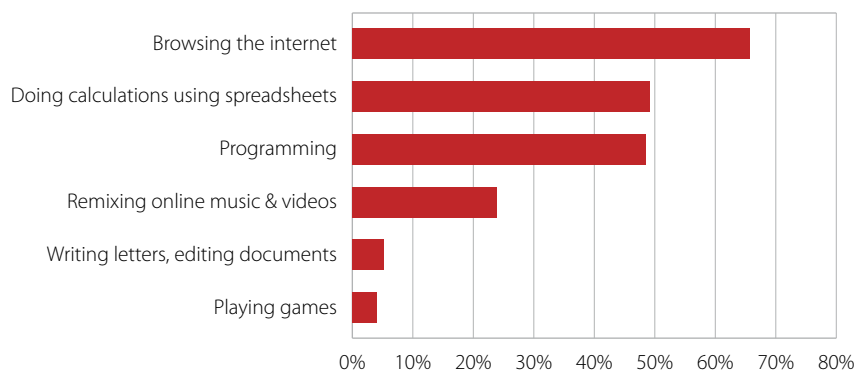


Figure 28: Uses of the computer (multiple responses)

Source: RIA ICT Survey data 2011-12

In terms of location of computer usage, the main places are at home (73%), at a cyber cafe (62%) or at a friend's place (58%).

In terms of online activity, Nigerian internet users can be found engaging in the entire spectrum of online communication, though social networking and email represent the most frequent activities – with 57% using social networking daily or weekly and 48% using email daily or weekly (see Figure 29). Meanwhile, 43% regularly post information or instant messages.

Nigerians' main activity with computers is browsing the internet.

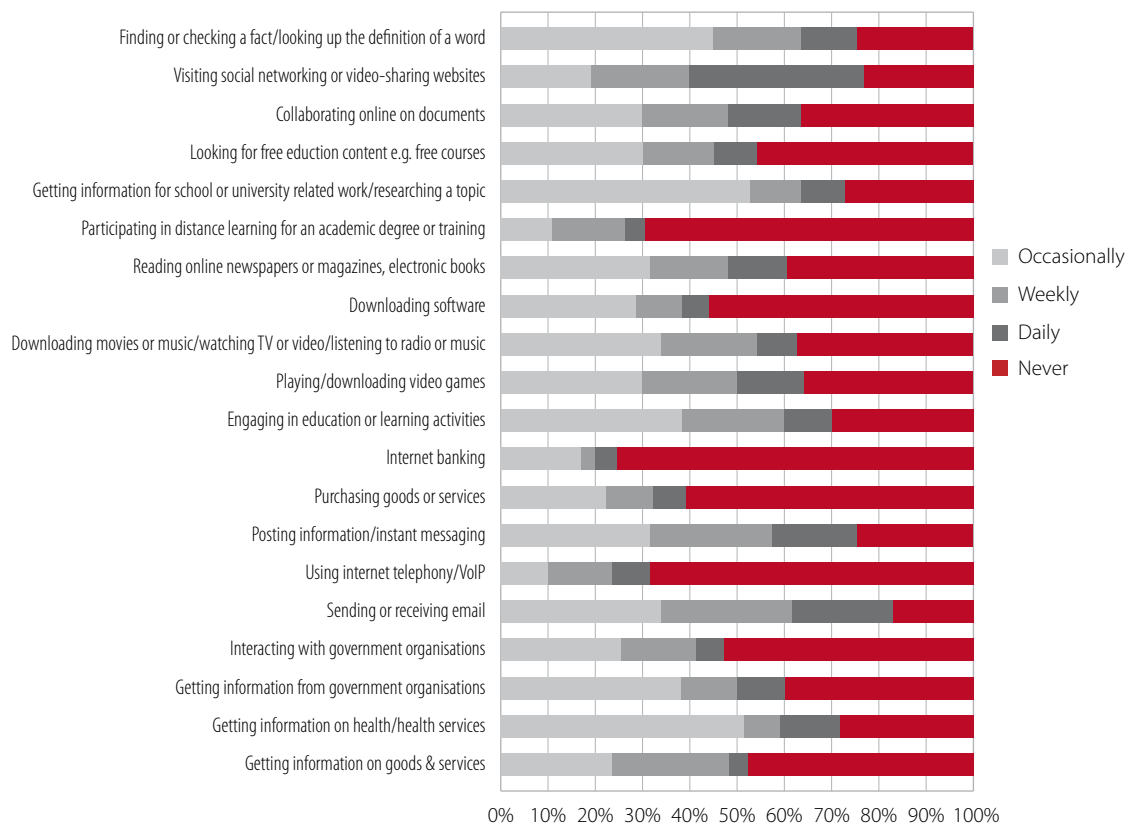
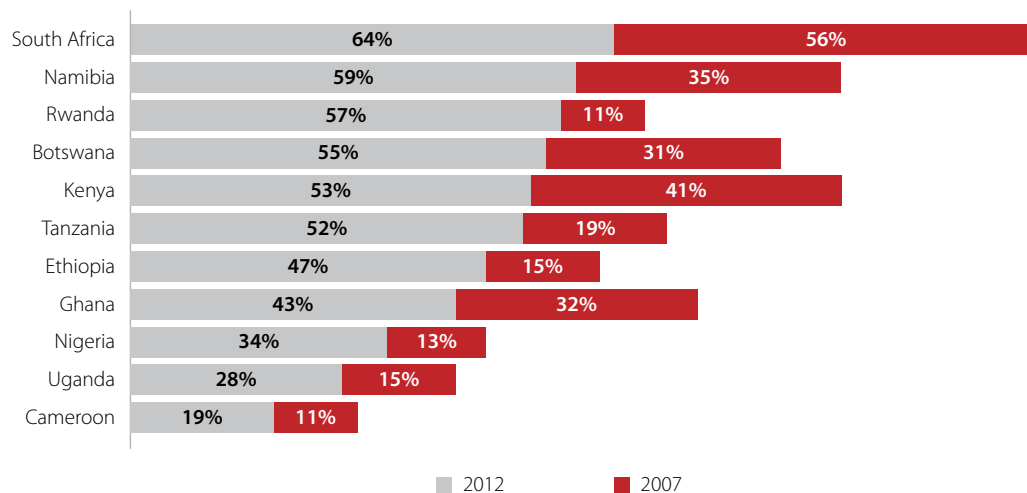


Figure 29: Distribution of online activities (multiple responses)

Source: RIA ICT Survey data 2011-12

The most common occasional usage activities cited by individual internet users are: getting information on health or health services (51%), getting information for school-related activities or researching a topic (52%), and checking a fact or the definition or a word (45%). Other occasional activities are: getting information from government organisations (39%), engaging in education and learning activities (38%), and downloading or listening to music, videos or TV (34%). Meanwhile, only 25% of respondent internet users have ever used internet banking, and only 30% have ever participated in formalised distance learning for an academic degree or job. Other non-prevalent online activities include telephoning over the internet (i.e. VoIP services like Skype and Google Talk (32%)) and ordering or purchasing goods online (40%). It is likely to some extent a product of the relative absence of electronic payment platforms and merchant authentication systems (which are only now being put in place by banks and other local providers of financial services).

Among internet users in Nigeria, there has been a growth in the proportion of daily users, from 13% in the RIA Survey of 2007 to 34% in RIA Survey 2012, but even with this growth it is still a low proportion of daily users compared to most other RIA study countries (see Figure 30).



Nigerian daily internet usage is low compared to daily usage levels in most other RIA study countries.

Figure 30: Daily internet usage for the last 3 months, users aged 15+

Source: RIA ICT Survey data 2011-12 and 2006-07

It was found that 81% of Nigerian internet users surveyed have at least one email address. And penetration of social networking in Nigeria is strong, with 50% of all internet users signed up to at least one of Facebook, Mxit, Badoo or Twitter (see Figure 31).

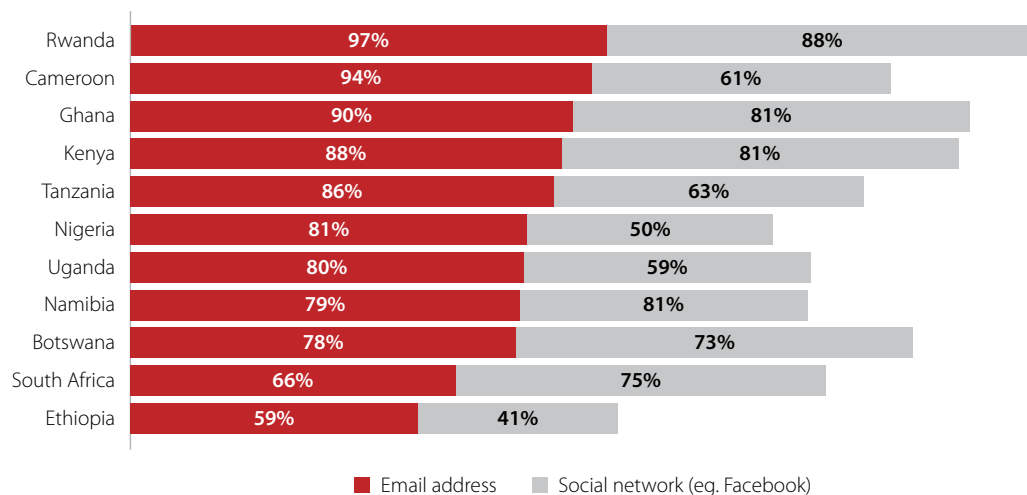


Figure 31: Share of internet users: with an email address; signed up for social networking

Source: RIA ICT Survey data 2011-12

Conclusions

This RIA Nigeria ICT Sector Performance Review for 2012 shows that while Nigeria has made significant strides in recent times with respect to access and usage of communication services, and mobile has grown to become a dominant ICT tool, the evidence is that, nevertheless, much more needs to be done for the country to achieve satisfactory benchmarks. Though market entry is generous, policy has simply not caught up with the pace of market developments, and regulation has generally been ineffective. Thus, it appears that the market is developing by itself, in a rather staccato way, with many apparently unintended outcomes.

One of the unintended outcomes is the decimation of fixed services. The success of mobile ICTs appears to have negatively impacted on fixed ICTs, which are now practically dead as a service sector. The collapse of fixed communications is evidenced by the failed attempts at privatisation of the incumbent NITEL – which, up to the beginning of the new millennium, had the biggest telecoms network in Nigeria – and the rapidly diminishing fortunes of private fixed-wireless companies. There is little evidence of any concerted effort by policymakers to arrest the decline of the much-needed fixed sector. If mobile services were not so successful in Nigeria, policymakers and the regulator NCC would perhaps have applied more urgency to address the problems of fixed ICTs. The failure of fixed has a particularly significant negative impact on access to, and usage of, high-speed broadband access. It is possible to infer that the similarly poor performance of traditional ISPs is probably tied to the absence of fixed networks, which typically form the foundational building block for internet infrastructure in developed economies. Also mitigating against fixed-internet usage is the finding that the majority of the Nigerian population does not have a personal computer at household level.

Thus, for a variety of factors, those who have a desire or need to be online typically end up with their mobile phone handset as a primary means for gaining access to the internet, browsing websites, sending emails and engaging in social media interactions. There is a growing evolution of the mobile operators into both traditional and mobile internet service provisioning, but in an effective ICT market, mobile cannot be the sole winner. And even mobile communication, in spite of its successes, still has some way to go in Nigeria, as the country currently does not rank among the top three RIA Africa survey countries in terms of mobile penetration. Moreover, mobile services in Nigeria are essentially very basic, and prepaid affordability is weak, and mobile broadband exists primarily in theory, not practice.

Of late, the government, through the MCT, has made some attempt to address market imbalances –via release of a draft National ICT Policy January 2012 and, later in the same year, establishment of a Presidential Committee on Broadband (which submitted its National Broadband Plan to the Minister in mid-2013). It remains to be seen what effect these initiatives will yield.

In summary, the ICT market in Nigeria can be much more successful and effective than it is at present with respect to broadband services, fixed telephony, computer penetration and household ICT access. Measures are required to address these gaps, and programmes are also required to promote mobile money, greater affordability of all services, consumer protection, and e-applications. It seems clear that with positive policies and regulatory intervention – potentially required by each deficient ICT sub-sector – the market will further develop, especially in the areas where the deficiencies are particularly significant. To be effective, the policy and regulatory improvements will have to be intensive, multi-dimensional and multi-sectoral, and accompanied by follow-through for maximum impact.

Recommendations

The following are recommendations to Nigerian policymakers, based on this Sector Performance Review, for facilitation of greater competition, access and efficiency in the Nigerian ICT sector:

- Conduct a holistic review of the issues affecting fixed telephone companies and ISPs, towards (1) gaining a deeper understanding of the problems faced, and (2) designing policies that can be implemented to reverse negative trends.
- Conclude the harmonisation of the policy framework and regulatory environment, but without undermining the principle of regulatory independence.
- Secure stakeholder input on, revise where necessary, and then implement the National ICT Policy and the National Broadband Plan.
- Encourage and support policies and solutions that will urgently resolve the infrastructure crisis as it relates to power supply and inter-city broadband data transmission networks. This would include:
 - removing bottlenecks that prevent fibre optic cabling companies from freely securing rights-of-way; and
 - licensing new operators to deliver broadband services using the latest technologies.

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