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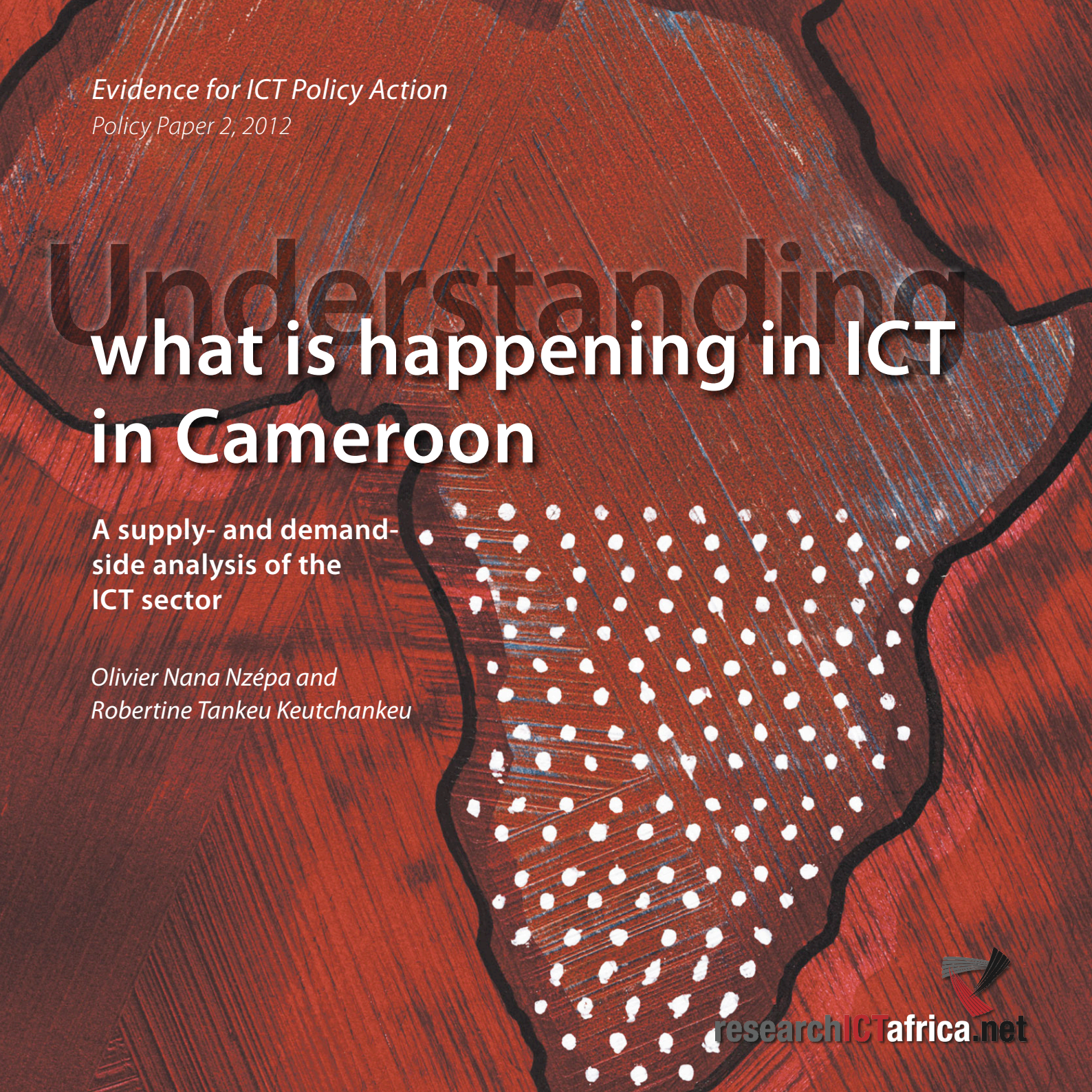
Understanding what is happening in ICT in Cameroon

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

Olivier Nana Nzépa and
Robertine Tankeu Keutchankeu



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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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RIA's Household and Individual ICT Access and Use Surveys and Informal Sector ICT Access and Use Surveys conducted in 12 countries – used to inform the national SPRs of 2012 – were led by Dr. Christoph Stork who, together with Mariama Deen-Swarray, was responsible for preparation of the statistical data and data analysis for the 12 sets of national findings – and the comparative analyses across the 12 countries. The Telecom Regulatory Environment (TRE) assessments, the compilation of supply-side indicators, and the collection and presentation of the pricing data, were coordinated across the 12 study countries by Enrico Calandro and Mpho Moyo. Additional peer-reviewing to that done amongst partners was undertaken by Steve Esselaar and Enrico Calandro.

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Executive summary

This is the third RIA Sector Performance Review (SPR) for the information and communication technology (ICT) sector in Cameroon. The first SPR, published in 2008, generated debates and research relating to RIA's contentions regarding the country's ICT performance. The second set of RIA Cameroon ICT data, captured in 2010 returned to the trends underscored in the first country report. Development of this third SPR, for 2012, took place while Cameroon was gearing, to some extent on the basis of the recommendations put forward by RIA, towards a new phase of ICT sector development. The current Minister, appointed as the head of the Ministry of Posts and Telecommunications (MINPOSTEL) three years ago, has made it a point of honour to bring more competition to the mobile sector and to improve the telecommunications regulatory landscape.

An outsourced professional social research provider collected the RIA ICT Survey data outlined in this report. The general finding after data collection and analysis it is that there has been no significant breaking of new ground in recent years in terms of ICT sector performance in Cameroon. While some sector dimensions have seen some slight improvement, generally the sector has not lived up to expectations in terms of job and wealth creation, and in some respects (e.g. quality of service [QoS]) the sector has deteriorated.

The mobile sector has remained a duopoly held by MTN and Orange, which has affected the dynamism of the whole sector to a great extent and has maintained very high costs for telecommunications services. Meanwhile, the fixed-line service provided by the incumbent CAMTEL is perishing, and the national objective of providing universal and affordable access to a full range of communications services is yet to become a reality.

The average monthly expenditure on telecommunications services in Cameroon stands at around CFAf2 700[1] per month per customer, with no significant difference in average expenditure between users in urban or rural areas. But while the urban-rural divide in access to voice services is decreasing, the divide remains high for internet access.

The overly-freewheeling nature of the mobile sector at present is threatening some of the gains made in the sector's earlier development stages. Loopholes in regulation have enabled mobile operators to enter the gambling industry, thus potentially contributing to poverty and family dysfunction in the country.

This 2012 RIA Cameroon SPR includes findings from the third RIA Telecom Regulatory Environment (TRE) assessment of Cameroon. Cameroon's TRE scores have for the most part declined with each successive TRE exercise, from the 2006 assessment to the 2009 assessment, and from the 2009 assessment to the 2012 assessment outlined in this report.

[1] In 2012, the CFAf has traded in a range between CFAf487 and CFAf543 to USD1.

Table of contents

Acronyms and abbreviations

ACE	African Coast to Europe
AfDB	African Development Bank
ADSL	asymmetric digital subscriber line
ARCEP	Autorité de régulation des communications électroniques et des postes (France)
AU	African Union
BACC	Bureau d'Appui à la Coopération canadienne
BIRD	Banque internationale pour la reconstruction et le développement
CAB	Central African Backbone
CAMTEL	Cameroon Telecommunications
CDMA	code division multiple access
CESIR	Credit Enhancement Servicing and Investor Reporting
CFAf	CFA franc, *or* Coopération financière en Afrique centrale franc
COTCO	Cameroon Oil Transportation Company
DSL	digital subscriber line
GESP	Growth and Employment Strategy Paper
GOVNET	Government Intranet
GSM	global system for mobile communications
HIPC	heavily indebted poor countries
ICT	information and communication technology
IDA	International Development Association
IDB	Islamic Development Bank
IDD	international direct dialing
IMF	International Monetary Fund
ISDN	integrated services digital network
ITU	International Telecommunication Union
MINPOSTEL	Ministry of Posts and Telecommunications, or Ministère des Postes et Télécommunications
MCT	Multipurpose Community Telecentre, *or* Télécentre communautaire polyvalent (TCP)
MVNO	mobile virtual network operator
NAICT	National Agency for Information and Communication Technologies, *or* Agence nationale des technologies de l'information et de la communication (ANTIC)
NIS	National Institute of Statistics, *or* Institut national de la statistique (INS)
NCC	National Communication Council, *or* Conseil national de la communication (CNC)
NGO	non-governmental organisation
PRSD	Poverty Reduction Strategy Document
QoS	quality of service
RIA	Research ICT Africa
SAP	structural adjustment programme
SAT-3/WASC	South Atlantic 3/West Africa Submarine Cable
SME	small and medium enterprise
SMI	small and medium initiative
SPR	Sector Performance Review
TRB	Telecommunications Regulatory Board, *or* Agence de régulation des télécommunications (ART)
TRE	Telecom Regulatory Environment
USD	US dollar
USO	universal service obligations
VANS	value-added network services
WACS	West Africa Cable System
WEF	World Economic Forum
WiMAX	worldwide interoperability for microwave access
WSIS	World Summit on the Information Society
WTO	World Trade Organisation

Introduction

The data currently soothing public decision-makers are inaccurate

The official ICT data available in Cameroon may be soothing to the country's public decision-makers, but the data is not accurate. According to official statistics, Cameroon scores highly for public payphone use and the incumbent CAMTEL is holding its own in terms of the number of households with fixed lines. However, the reality is that the public payphone as a tool for communication is nearly extinct in Cameroon, and as for the statistical data on fixed lines, even the people in charge of compiling these statistics discount their veracity. Accordingly, this 2012 Research ICT Africa (RIA) Cameroon Sector Performance Review (SPR) uses as its core materials the RIA data generated by the 2012 RIA Cameroon Household and Individual ICT Access and Use Survey and the 2012 Informal Sector ICT Access and Use Survey.

This report has six sections:

Section 1 gives an overview of key developments in Cameroon's ICT sector in recent years. Among the recent significant events is the shift in responsibility from the Presidency to the Ministry of Posts and Telecommunications (MINPOSTEL) for oversight of the National Agency for Information and Communication Technologies (NAICT, or Agence nationale des technologies de l'information et de la communication [ANTIC]).

Section 2 describes Cameroon's ICT market structure, its ICT players, the players' market shares, and other financial analysis. Included in this section is a discussion of new pricing strategies – strategies that have been creating increasing confusion about what are the actual costs of services.

Section 3 looks at ICT use and discusses, *inter alia*, how mobile voice telephony is killing off the public payphone sector.

Section 4 delineates the emerging trends in Cameroon's ICT sector, including the mobile operators' highly lucrative provision of gambling services.

Section 5 presents the results of the 2012 Telecom Regulatory Environment (TRE) assessment, and provides comparisons with Cameroon's TRE scores in 2006 and 2009, as well as comparisons between Cameroon's scores and those in other RIA TRE assessment countries.

Section 6 provides the paper's conclusions and recommendations.

Main sector developments

The first phase of Cameroon's ICT sector was characterised by a firm state grip on the sector

In order to frame the current status of Cameroon's ICT sector, it is useful to recall the historical phases of the sector's development. The first phase was characterised by a firm state grip over the sector. Telecommunications were considered a strategic governmental tool and, consequently, MINPOSTEL was one of the most prominent ministries. Between 1960 and 1990, the sector's development took place via a series of five-year plans, which endowed the country with one of the most enviable networks in Africa. In addition to a terrestrial satellite centre in Zamengoe, the country was, in 1989, an early adopter of the GSM mobile platform.

But with those early successes came ill-practice: top-down decision-making and corruption led the sector to the brink of collapse in 1996. A former Minister of Posts and Telecommunications was one of the first top civil servants to serve a jail term for corruption. At the end of 1996, the waiting list for telecommunication services topped 2million customers and the waiting time for a new service was more than two years. The IMF/World Bank structural adjustment then came into play. Under pressure from international partners and in terms of a structural adjustment programme (SAP), the telecommunications sector partially opened up to competition: two mobile operators entered the market, though fixed-line operations remained in the portfolio of the incumbent CAMTEL. A sector regulator, the Telecommunications Regulatory Board (TRB, or Agence de régulation des télécommunications [ART]), was set up in 1998.

Two mobile operators now dominate the ICT sector

In 2005, the NAICT (or ANTIC), which had been created by Presidential Decree in 2001, received appointment of its first Director General. By the end of 2007, two mobile operators, MTN and Orange, overwhelmingly dominated the ICT sector, CAMTEL's fixed-line operation was stumbling, the regulatory landscape was overly complex and inefficient, and quality of service (QoS) was degrading.

The most recent phase is based on a governmental strategy framed by two documents: the Sector Strategy for Telecommunications and Communication Technologies 2005-2015 (MINPOSTEL, 2005), and the Growth and Employment Strategy Paper (GESP) (Republic of Cameroon, 2009). Broadly speaking, the Sector Strategy is three-fold: (1) develop policies aligned with the new environment; (2) adopt and implement those policies; and (3) seek contributions from international cooperation partners and the private sector.

The GESP plans to extend telephony coverage to 45% of the population by 2020

The GESP, for its part, assigns to the ICT sector several goals to be reached by 2020, including:

- landline telephony coverage to 45% of the population, and mobile coverage to 65% of the population;
- provision of modern means of communication to 40 000 villages; and
- multiplication by 50 of the number of direct and indirect employment positions in the ICT sector (Republic of Cameroon, 2009, p. 63).

The Sector Strategy implementation in the ICT sector in Cameroon is to be based on three key areas:

- refining the legal, regulatory, and institutional framework;
- increasing service quantity, quality, and affordability; and
- increasing the use of ICT and fostering ICT enterprises (MINPOSTEL, 2005).

This 2012 SPR seeks to contribute to the achievement of the goals of the Sector Strategy. The RIA data collected between September and December 2012 make clear the need for:

- improved management of frequency spectrum to ensure its rational use;
- promotion of industrialisation within the ICT sector;
- drawing on the innovative skills of SMEs and informal sectors;
- implementation of programmes extending ICT services to rural and disadvantaged areas; and
- harnessing new trends, such as mobile money.

There is a clear need for improved management of frequency spectrum

In 2011, MINPOSTEL and the TRB published a report entitled Telecommunications and ICTs in Cameroon: A Seven Year Greater Achievement Review (MINPOSTEL and TRB, 2011). The Review seeks to highlight government achievements in the telecommunications sector, and in the document Jean Pierre Biyiti Bi Essam, Minister of Posts and Telecommunications, writes:

- The turnover of the sector increased from CFAF 272.318 billion in December 2005 to more than CFAF 433 billion in late 2010;

- Added value for concession operators valued at CFAF 100 billion in 2005 rose to nearly CFAF 210 billion in late 2010;

- The accumulated volume of investments of concession operators is estimated at more than CFAF 524 billion between January 2005 and December 2010, an average annual investment flow of over CFAF 83 billion;

-The cumulative contribution of the sector to VAT since the introduction of competition is estimated at more than CFAF187 billion in 2009;

- The cumulative contribution of operators to tax revenue between January 2005 and December 2010 is estimated at more than CFAF 417 billion. This contribution is increasing since the reform of the sector;

- About 1 000 direct jobs and over 300,000 indirect jobs were created in the sector between January 2005 and December 2010. Also, since 2009, the number employed in telecommunications and ICT represents more than 50% of the direct total of the tertiary sector;

- The wage bill distributed by concession operators increased from CFAF 24.3 billion in December 2004 to nearly 30 billion CFA francs in December 2010;

- Since 2006, the average annual income per user (ARPU) for operators of fixed and mobile telephony is less than the average per capita income (GDP per capita). This illustrates the fact that today, access to the telephone concerns even people with low-income;

- The number of phone lines for all the services rose from 1,624,010 in December 2004 to nearly 9,223,718 active subscribers at the end of 2010, giving a growth rate of over 568%;

- The number of Internet subscribers increased from 3,000 in 2005 to almost 50,000 in late 2009 and the number of Internet users is more than 400 000;

- The national coverage by mobile operators is situated around 80% in 2010;

- Teledensity which was only 9.8% in late 2004 increased to approximately 47.5 lines per 100 inhabitants in December 2010 (MINPOSTEL and TRB, 2011, pp.12-13).

In 2012, a market survey commissioned by the Ministry from Network Dynamics Associates put the number of telecommunications subscribers at 8 003 844 in 2009 and estimated that 8million more customers could be added by the year 2015 (Network Dynamics Associates, 2012).

ICT infrastructure and services primarily benefit cities and the high-earning bracket of consumers

But the 2012 Network Dynamics Associates study argued that at its current stage of development, the deployment of ICT infrastructure and services in Cameroon primarily benefitted cities and the high-earning bracket of consumers. More than 80% of subscribers were found to be concentrated in cities (Douala, Yaoundé, Bafoussam) and among high-income earners, while people in the middle and lower classes were struggling to be part of the new ICT reality (Network Dynamics Associates, 2012).

Among the 10 RIA ICT Survey countries covered in the World Economic Forum's (WEF's) Networked Readiness Index (NRI) and NRI sub-indices for 2010-11 (see Table 1 below), Cameroon was the lowest-ranked in the overall NRI (in 125th place) (WEF, 2011).

Table 1: RIA Survey country Networked Readiness Index (NRI) and NRI sub-index rankings, 2010-11

Country	NRI ranking	Environment (NRI sub-index)	Readiness (NRI sub-index)	Usage (NRI sub-index)			
				Overall	Government	Business	Individual
Botswana	**91**	74	93	97	84	112	101
Cameroon	**125**	126	128	124	111	113	129
Ghana	**99**	82	80	108	116	102	112
Kenya	**81**	99	55	88	65	67	104
Mozambique	**106**	113	87	107	92	96	125
Namibia	**82**	56	71	109	129	90	107
Nigeria	**104**	105	108	99	123	81	92
South Africa	**61**	38	79	83	76	52	95
Tanzania	**118**	104	124	125	117	120	127
Uganda	**107**	102	105	118	109	111	121

Source: WEF (2011)

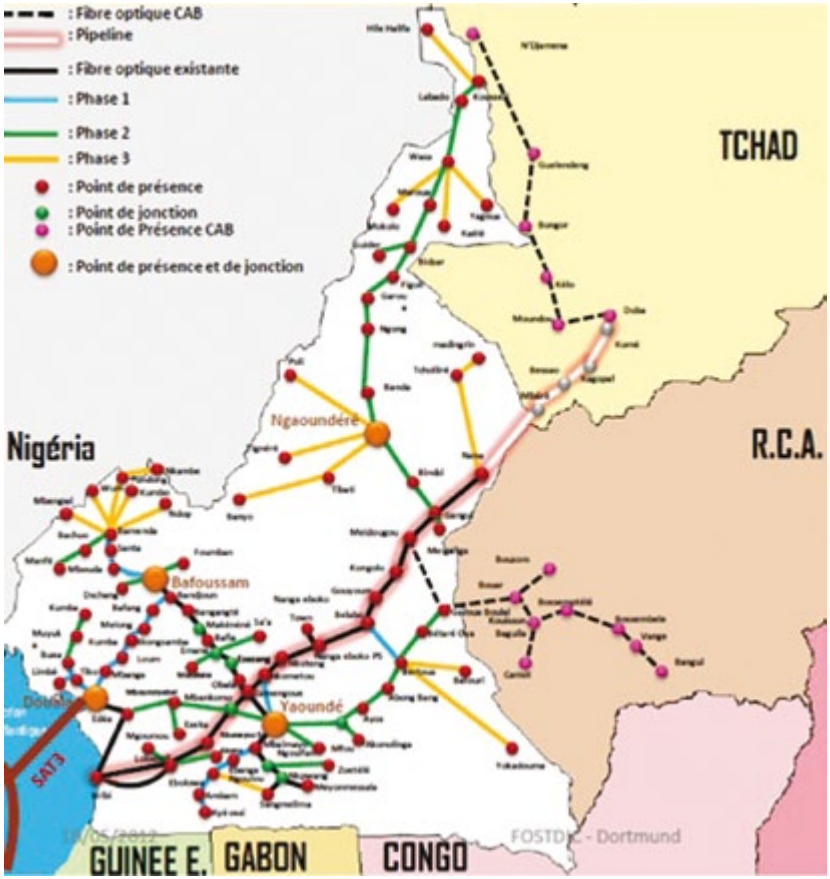
Cameroon ranked 125th in the WEF's NRI ranking

The Economist Intelligence Unit (EIU) did not include Cameroon among the 70 countries accounted for in its 2009 e-readiness rankings (EIU, 2009). (This absence could be seen as a lost opportunity for Cameroon to get accurate input on the country's ICT strengths and weaknesses.) The EIU e-readiness ranking is a tool to measure a population's capacity to use ICTs through looking at how many people have the necessary skills and how ICTs are currently used. The World Economic Forum (WEF) stresses the importance of "technological readiness" in these terms:

> *In today's globalized world, technology has increasingly become an important element for firms to compete and prosper. In particular, information and communication technologies (ICT) have evolved into the "general purpose technology" of our time, given the critical spillovers to the other economic sectors and their role as efficient infrastructure for commercial transactions. Therefore ICT access (including the presence of an ICT-friendly regulatory framework) and usage are […] essential components of economies' overall level of technological readiness (WEF, 2009, p. 6).*

Some recent actions have been taken in an effort to improve Cameroon's ICT sector. In 2010, the Set'Mobile MVNO was given operational authorisation (selling access to Orange's network), and in late 2012 it became clear that a 3G licence granted to Viettel (a Vietnamese-owned mobile operator) would become operational in 2013. Viettel would then become the third mobile operator in the country, along with MTN and Orange. The country is also seeking to position itself favourably in the deployment of fibre-optic technology. Twelve of 18 planned fibre-optic cables have been laid along the Chad/Cameroon oil pipeline and handed over to the country by the American Cameroon Oil Transportation Company (COTCO) consortium. These cables are serving as an embryonic trunk line for the Central African Backbone (CAB) project, which will ultimately link Cameroon, Chad, and the Central African Republic. If completed according to plan, the CAB initiative could result in Cameroon becoming a telecommunications hub for Central Africa.

Viettel became the third licensed mobile operator alongside MTN and Orange



The CAB project will connect Cameroon, Chad and the Central African Republic

Figure1: Existing and projected fibre-optic networks in Cameroon

Source: Tonye (2012)

Note: "RCA" in the map stands for "République centrafricaine" (Central African Republic)

In addition to connecting three countries, the CAB network will extend the global information highway through to the landing points of submarine cables in Cameroon's main port, Douala. The World Bank is participating in the financing of the CAB project through contributions by its International Development Association (IDA) and its Banque internationale pour la reconstruction et le développement (BIRD), with World Bank contributions amounting to USD215million over a period of 10 years. The African Development Bank (AfDB) and the Islamic Development Bank (IDB) are participating in the project and have opened a line of credit amounting to about USD200million. The CAB programme also expects to raise USD97.8million from the private sector.

The CAB project includes construction of a national broadband backbone

The CAB programme also includes construction of a national broadband backbone, but this backbone will only be useful if it connects to international submarine cable networks. Since the SAT-3/WASC submarine cable is becoming saturated, the government is exploring alternatives to reduce SAT-3/WASC traffic and diversify access. The opportunities offered by the West Africa Cable System (WACS), African Coast to Europe (ACE), and MainOne projects are all being explored.

The ACE cable project of which Cameroon is part, initiated by France Telecom, is looking to deploy a 14 000 km fibre-optic submarine cable along the West coast of Africa to provide international connectivity to land-locked countries. Twenty-seven landing points – corresponding to the number of member countries in the ACE consortium – have been identified. The project envisages direct connectivity, avoiding transit between consortium member countries.

The MainOne Initiative aims to deploy a network of submarine cables to Cameroon

Cameroon is also participating in the MainOne initiative, which aims to deploy a network of submarine cables with a capacity of 1.92 Terabits to provide open and low-cost access to international bandwidth. The first phase went operational in June 2011, enabling the linking of Nigeria to Portugal, over a distance of 7 000 km, with a landing point in Ghana. In Portugal, the system is connected to other cable systems linked to Europe, the Americas, and Asia.

Under the umbrella of the African Union (AU) Cameroon has signed (in 2005) a project agreement with India to be part of the Pan African e-Network, which aims to link all 53 African countries via both satellite and fibre-optic cable and to provide services such as e-learning, telemedicine, and diplomatic communications. This network would enable the inter-connection of the countries of the AU as well as connections between these countries and India, which is funding the setup of the project. India is responsible for provision and installation of the equipment, rental fees for bandwidth on satellite links and submarine cables, and the operation and maintenance costs over a period of five years – before leaving network management to African states. To date, 33 African countries have signed onto this project.

GOVNET intends to connect public administration sites via a broadband network

Domestically, the government is engaged in a high-speed government Intranet project (GOVNET) in an effort to interconnect public administration sites via a broadband network. The main network will be supported by a fibre-optic loop, which will be connected to a platform that provides administrative services online. Decentralised administrative services will be connected to the main network nodes, either through a broadband radio relay link using WiMAX technology or through the national backbone network. This GOVNET network will serve as the foundation for e-government in Cameroon.

The government also envisages the interconnection of 20 000 villages through Multipurpose Community Telecentres (MCTs, or Télécentres communautaires polyvalents [TCPs]). This telecentre project's purpose is to involve rural communities in the process of developing an affordable, viable, and replicable ICT access model. The total amount of government investment needed for the project amounts to about CFAf14billion by the year 2015.

Some critics argue that there is too much emphasis and expenditure on the aforementioned network projects, and that other critical ICT sub-sectors are potentially being neglected. Indeed, it would appear that Cameroon is

likely involved in more infrastructure deployment than is necessary for the country's needs, and there is insufficient balancing between competing ICT imperatives.

The government is seeking to simplify the regulatory framework and to refine provision of ICT services to cope with convergence of technologies and greater user demand. Two presidential Decrees were signed in April 2012 with the aim of ending tensions between the TRB and the NAICT over control of ICT regulation in Cameroon. In terms of the Decrees, the two institutions' roles have been clarified.

The institutional roles of the TRB and the NAICT have been clarified in two Presidential Decrees

The first Decree states that the TRB (established in 1998) is now in charge of assuring healthy competition in the ICT sector. As such, its mission has been expanded and reinforced with the TRB now called upon to regulate the activities of network operators and providers of electronic communications services. The Decree thus expands the activities of the TRB well beyond telecommunications to a wide range of ICT matters. The TRB is also expected to ensure operator compliance with the principle of equal treatment of users of electronic communications.

The second Decree strips the National ICT Agency (NAICT) of the privilege of being directly attached to the Presidency. The Agency is now under the tutelage of MINPOSTEL and the Ministry of Finance. The fall from grace is accompanied by the loss of responsibility over ICT activities. The NAICT is now the governmental watchdog for activities related to the security of electronic communication networks in accordance with cyber-security and cybercrime law.

The NAICT is now the keeper of electronic communications security in accordance with cybercrime law

In spite of this attempt to clarify ICT regulatory arrangements, a number of areas of potential regulatory inefficiency remain e.g. the fate of regulating the satellite trunk is not resolved, radio and television spectrum attribution still belongs to the portfolio of MINPOSTEL, and the control of electronic and print media activities is still under the control of the National Communication Council (NCC).

The complexity of the new ICT era requires increasingly complex and flexible regulation in order to cope with the unpredictable nature of new technologies. However, Cameroon's latitude in setting its own agenda has been greatly affected by its admission to the heavily indebted poor countries (HIPCs) initiative in 1996. The initiative imposed upon HIPC countries, *inter alia*, the setup of development targets and adoption of a Poverty Reduction Strategy, with World Bank and International Monetary Fund (IMF) guidance. This one-size-fits-all Strategy process resulted in a structural adjustment programme (SAP) in the 1990s and a Poverty Reduction Strategy Document (PRSD) in 2003.

Admission to the HIPC initiative has constrained Cameroon's self-help policymaking

In 2009, the PRSD became the aforementioned (in Section 1) GESP and, in its "Vision and Goals" section, it states:

> *With the vision, Cameroon is asserting its desire to see the incidence of poverty drop below 1/10, meaning that; only one of every ten Cameroonians would still be poor by 2035. The reduction of income poverty would lead to improved access to healthcare, education, training services, and basic infrastructure, including water supply, roads, and electricity (Republic of Cameroon, 2009, p. 54).*

The GESP document also states Government's resolve to improve Cameroon's socio-political environment, and to restore the confidence of citizens and investors through:

- improving the electoral system;
- improving access to, and the quality of, the justice system;
- consolidating national human rights promotion and protection; and
- reinforcing maintenance of law, order, and security along the country's borders. (Republic of Cameroon, 2009, p. 94)

In terms of the business environment, the GESP commits the government to greater dialogue with the private sector in order to improve the business climate, pursuit of the legal model developed by the Organisation for the Harmonisation of Business Law in Africa (OHADA), and adherence to an Investment Charter (Republic of Cameroon, 2009, p. 94).

The GESP states the Government's resolve to increase teledensity, improve ICT access and increase ICT sector employment

As mentioned in Section 1 above, the GESP's strategic goals in the area of ICT to be achieved by 2020 include increased landline and mobile teledensity, improved ICT access and use for villages, and increased ICT sector employment (Republic of Cameroon, 2009, p. 63).

The document goes on to affirm that:

> *In order to achieve the goals set by the Government in the Telecommunications/ICT field, a certain number of programmes must be executed. They will involve organizing the electronic communications system to have a good visibility and legibility of the sector's activities, to optimize the use [of] telecommunications/ICT so as to have reliable and sufficient infrastructure, to facilitate the development of ICT in order to popularize them and make it possible for all citizens to use them, improve management of the spectrum of frequencies and ensure rational use of this scarce resource, to promote industrialization within the Telecommunications/ICT sector in order to develop procedures for the emergence of Telecom/ICT small SME/SMIs, to implement the programme of extending their services to rural or disadvantaged areas, thus reducing the digital divide between rural and urban areas, to organize the provision of services and the trend of various market components (Republic of Cameroon, 2009, p. 63).*

For public authorities, the implementation of the GESP's overall telecommunications/ICT strategy is underpinned by three key dimensions:

> *[…] (I) adapting and updating the legal, statutory, and institutional […] framework, (II) improving the quantity and quality of services provided and making them affordable, and finally (III) increasing the use of ICT and the industrial fabric of ICT companies (Republic of Cameroon, 2009, p. 63)*

There is some scepticism around the potential of the GESP to provide tangible results

There is scepticism in some quarters regarding the potential of the GESP to provide tangible results, as evidenced by online discussions (see AfCoP, n.d.). The PRSD adopted in 2003 only brought the level of poverty in the country down to 39.9% in 2007 from 40.1% in 2001.

The ICT market

The ICT sector generated gross revenue of CFAf426billion in 2010, a growth of 7.7% over 2009 (ARCEP, 2010). This makes ICT one of the most dynamic branches of the tertiary sector in Cameroon. The industry is driven primarily by the strong mobile sub-sector.

According to the African Development Bank (AfDB), the agricultural sector is no longer the backbone of the country's economy. Agriculture's contribution to GDP has tumbled (standing at 21.3% in 2008) while the tertiary sector (the services sector) has become the largest contributor to national income (46.2% in 2008) (AfDB, 2009).

The tertiary (services) sector has become the largest contributor to national income

The number of fixed telephone subscribers increased at a rate of 14.9% between 2009 and 2010 by virtue of subscriptions to the fixed-wireless CTPhone service provided by the fixed-line incumbent CAMTEL.[1] CDMA subscribers represented 88% of the total 539 504 subscribers claimed on 31 December 2010 by the fixed-line operator.

The average monthly consumption per subscriber for fixed and fixed wireless decreased by 12.1% between December 2009 and December 2010 from 25 minutes to 22 minutes per month (Nana Nzépa *et al*., 2011).

The total number of telephony subscribers (mobile and fixed) stood at 9 176 156 on 31 December 2010, up from 8 473 492 at the end of 2009 (a year-on-year increase of 8.3%) (ARCEP, 2010) (see Table 2).

Table 2: Telephony subscriber numbers, 2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
Fixed lines	99 439	100 331	150 706	169 222	255 306	469 648	539 504
Mobile	1 526 462	1 993 194	3 135 946	4 535 991	6 164 784	8 003 844	8 636 652
Total subscribers	1 625 901	2 093 525	3 286 652	4 705 213	6 420 090	8 473 492	9 176 156
Net increase	451 557	467 624	1 193 127	1 418 561	1 714 877	2 053 402	702 664
Rate of increase	**38.5%**	**28.8%**	**57%**	**43.2%**	**36.4%**	**32%**	**8.3%**

Source: ARCEP (2010)

The rate of increase in telephony subscribers has decreased

In terms of the telephony subscriber breakdown (for both fixed and mobile) between prepaid and postpaid, the percentage split has remained at 99% in favour of prepaid since 2007 (see Table 3 below).

Table 3: Prepaid versus postpaid telephony subscribers (mobile and fixed)

	2004	2005	2006	2007	2008	2009	2010
Prepaid subscribers	1 490 114	1 933 380	3 060 466	4 475 234	6 096 831	7 931 631	8 543 636
Postpaid subscribers	36 348	59 914	75 480	60 757	67 953	72 213	93 015
Total	**1 526 462**	**1 993 194**	**3 135 946**	**4 535 991**	**6 164 764**	**8 003 844**	**8 636 652**

Source: ARCEP (2010)

Prepaid subscription is far more popular than postpaid

[1] The CTPhone service is based on code division multiple access [CDMA] technology.

In 2012, the telecommunications market in Cameroon had three major players: the incumbent CAMTEL with a legislated monopoly over fixed services, and the two mobile operators, Orange and MTN. The contribution to market development of the second-tier telecommunications operators – those providing satellite telephony (Thuraya) and satellite internet – is still marginal.

The contribution of the second-tier telecommunications operators is still marginal.

MTN dominates telephony with a market share of 52.2% of all subscriptions in the country (taking into account both mobile and fixed), followed by Orange (41.90%) and CAMTEL (5.30%). As for employment, CAMTEL is still creating some new jobs (an increase from 2 454 employees in 2009 to 2 512 in 2010), as is MTN to a small extent (from 661 employees in 2009 to 668 in 2010), while Orange's workforce has recently decreased (from 634 employees in 2009 to 629 in 2010). The overall job increase for the telephony sub-sector was 1.9% in 2010 (ARCEP, 2010).

Table 4: Telephony jobs, 2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
CAMTEL	2 235	2 250	No data	2 083	2 190	2 454	2 512
MTN	399	446	485	694	625	661	668
Orange	496	514	577	586	623	629	634
Total	3 130	3 213	N/A	3 363	3 438	3 744	3 814
Rate of increase	**N/A**	**2.7%**	**N/A**	**N/A**	**2.2%**	**8.9%**	**1.9%**

Source: ARCEP (2010)

Investments made by Cameroon's mobile operators totalled CFAf77.3billion in 2010 – a 10.8% decrease from the amount spent in 2009 (ARCEP, 2010).

Table 5: Telecommunications sector investments, 2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
Fixed (CFAf billions)	15.4	18.8	No data	63.1	15.8	36.4	37.6
Mobile (CFAf billions)	47	58.2	65.5	60.0	81.6	86.6	77.3
Total (CFAf billions)	62.4	77.0	No data	123.1	97.4	123.0	114.9
Rate of increase/decrease	**N/A**	**23.9%**	**N/A**	**N/A**	**-20.9%**	**26.3%**	**-6.6%**

Source: ARCEP (2010)

The mobile sub-sector still represents 85% of the telecommunications sector's investment

Though its turnover growth has slowed in recent years, the mobile sub-sector still represents 85% of the telecommunications sector turnover as a whole (ARCEP, 2010).

Internet/broadband is provided in Cameroon through fixed lines by the incumbent CAMTEL, and wirelessly by Orange's, MTN's, and a core of small telecommunications players' mobile networks (Ringo, Douala One, Creolink, Matrix Telecoms, Yoomee, CamNet, Pastel, and Foris Cameroon). The efforts made by the government to build more fibre-optic networks (and thus reduce wholesale bandwidth costs) have yet to translate into lower retail costs or higher QoS.

Cameroon's telephony operators and the TRB have for several years been doing battle over pricing matters. Four years ago, the TRB threatened to set a capped price for mobile services if operators failed to make reductions. Officially, operators did not respond, continuing to officially charge CFAf120 per minute. But in reality, the pricing process has been altered profoundly by an operator price war based on the introduction of bonuses and other incentives. In 2010, after announcement of the bid for a third mobile operator, Orange triggered the war by offering a "timer" option at a cost of CFAf2 (on-network) and CFAf3 (off-network) per second, i.e. between CFAf120 and CFAf150 per minute but with per-second billing. Another Orange incentive programme provides free airtime in response to volume of use, e.g. a customer receives one minute free for every three minutes paid. Roaming free of charge is also offered on some weekends to Orange customers who have chosen the "top joker" option (Orange Cameroon, n.d.). CAMTEL struck back by offering a rate of CFAf35 per minute during weekends (CAMTEL, n.d.).

The pricing process has been altered by an operator price war based on the introduction of bonuses and other incentives

The virtual operator Set'Mobile entered the battle with an offer of CFAf1.5 per second and CFAf40 per minute. MTN responded in December 2012 with two promotional plans with different names but the same offering: MTN Best and MTN Elite. The offer consists of a two-minute cost of CFAf90 per minute, dropping to CFAf50 per minute for the third minute onwards (MTN Cameroon, n.d.). The moves by Orange, CAMTEL, and MTN are intended, *inter alia*, to undermine the business case of the third mobile operator expected to become operational in mid-2013.

ARCEP data show an increase of nearly 11% in mobile voice traffic in 2010 – much lower growth than in previous years but still strong (see Table 6 below).

There has been an increase in mobile voice traffic of nearly 11%

Table 6: Mobile voice traffic, 2004 to 2010 (millions of minutes)

	2004	2005	2006	2007	2008	2009	2010
On-net calls (within a network)	370.2	452	694.2	1 134	1 803	2 240	2 463
Off-net calls (from one network to another)	7.8	8.5	14.5	497	571	1 216	701
International calls	238.7	301.8	389.9	51	62	76	92
International roaming	No data	No data	No data	2.4	1.2	1.4	10
Total mobile traffic	649.1	792.2	1 139.5	1 684.4	2 439.2	2 946.3	3 266.1
Rate of increase	**13.9%**	**22.1%**	**43.8%**	**47.8%**	**44.2%**	**21.3%**	**10.9%**

Source: ARCEP (2010)

Assessment of voice traffic by type shows that on-net calls are the most important share of communication on mobile networks. In 2010, on-net calls made up to 75.4% of outgoing mobile network calls, while off-net calls (to the competitor's network) represented 20.6% of outgoing traffic. Calls to landlines represented 0.9% of total outbound traffic. The remaining 3.1% of mobile calls were distributed between outgoing international calls and roaming calls made by subscribers while outside of the country.

On-net calls are the most important share of communications on mobile networks

As mentioned earlier, telephony operator turnover rose to CFAf426billion in 2010, an increase of 7.7% on 2009, despite the economic downturn (ARCEP, 2010). As Table 7 below shows, this turnover growth was largely supported by growth of the mobile sub-sector.

Telephony operator turnover rose by 7.7% despite the economic downturn

Table 7: Telephony companies' total turnover, 2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
Fixed (CFAf billions)	58.4	50.8	No data	54.6	56.2	60.6	70.4
Mobile (CFAf billions)	195.5	221.8	247.8	295.2	312.4	335	355.6
Total (CFAf billions)	253.9	272.7	No data	349.8	368.6	395.6	426
Rate of increase	**N/A**	**7.4%**	**N/A**	**N/A**	**5.4%**	**7.3%**	**7.7%**

Source: ARCEP (2010)

Mobile operator turnover grew 6.1% in 2010 (see Table 8 below), slightly lower than the 7.3% growth in 2009. Table 8 also shows that mobile sector turnover growth has been in single digits since 2008 after double-digit growth between 2004 and 2007.

Growth in mobile operator turnover has slowed

Table 8: Mobile operator turnover, 2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
Turnover (CFAf millions)	195 496.2	221 804.5	247 787	295 170	312 379.1	335 046	355 637
Rate of increase	**22.8%**	**13.5%**	**11.7%**	**19.1%**	**5.8%**	**7.3%**	**6.1%**

Source: ARCEP (2010)

ICT use

Cameroonian households did not experience significant changes in their use of grid electricity, fixed lines, computers, or internet services between 2008 and 2012, as shown below in Table 9.

Table 9: Household electricity and ICT use in RIA Survey countries, 2012 and 2008

		Electricity from grid	Fixed-line	Computer	Internet
Botswana	2012	60.1%	15.0%	15.7%	8.6%
	2008	47.5%	11.0%	4.5%	0.1%
	Change	12.6%	4.0%	11.2%	8.5%
Cameroon	**2012**	**64.5%**	**2.2%**	**8.6%**	**1.3%**
	2008	**57.1%**	**1.8%**	**4.1%**	**1.2%**
	Change	**7.4%**	**0.4%**	**4.5%**	**0.1%**
Ghana	2012	73.0%	1.8%	8.5%	2.7%
	2008	62.6%	2.6%	5.1%	0.3%
	Change	10.4%	-0.8%	3.4%	2.4%
Kenya	2012	60.1%	0.6%	12.7%	12.7%
	2008	46.6%	2.3%	5.5%	2.2%
	Change	13.5%	-1.7%	7.2%	10.5%
Namibia	2012	41.8%	11.5%	14.7%	11.5%
	2008	44.6%	17.4%	11.2%	3.3%
	Change	-2.8%	-5.9%	3.5%	8.2%
Rwanda	2012	15.6%	0.2%	2.0%	0.7%
	2008	4.7%	0.1%	0.3%	0.0%
	Change	10.9%	0.1%	1.7%	0.7%
South Africa	2012	89.2%	18.0%	24.5%	19.7%
	2008	77.2%	18.2%	14.8%	4.8%
	Change	12.0%	-0.2%	9.7%	14.9%

		Electricity from grid	Fixed-line	Computer	Internet
Tanzania	2012	19.4%	0.4%	1.6%	0.8%
	2008	13.4%	0.9%	1.0%	0.0%
	Change	6.0%	-0.5%	0.6%	0.8%
Uganda	2012	13.4%	1.5%	2.2%	0.9%
	2008	9.5%	0.3%	1.2%	0.0%
	Change	3.9%	1.2%	1.0%	0.9%
Nigeria	2012	58.4%	0.3%	6.6%	3.4%
Ethiopia	2012	18.1%	4.0%	0.7%	0.5%

Source: RIA ICT Survey data 2011-12 and 2007-08

The average monthly consumption per subscriber for mobile services diminished

The average monthly invoice – the average amount a subscriber is charged by an operator – was CFAf2 701 per month per mobile subscriber in 2010. The average revenue per minute across fixed and mobile telecommunications networks was CFAf85.7 per minute in the same year and the average monthly use per subscriber was 31.5 minutes per subscriber per month, an increase of 2.7% compared to 30.7 minutes per subscriber per month in 2009. The average monthly consumption per subscriber for mobile is diminishing over time and sat at around 30 minutes in 2010. The average monthly use per subscriber for fixed services was 22 minutes in 2010, a decrease of 12.1% compared to 2009 when people were spending close to 24 minutes per month on the phone (ARCEP, 2010).

Fixed telephony (fixed-line and fixed-wireless)

The subscriber base of fixed telephony continues to swell

The number of subscribers to fixed services was 539 504 in 2010, a 17.7% increase compared to 2009. In absolute terms, however, the increase reflects a setback for fixed-line connections. As seen below in Table 10, the vast majority of subscriptions to fixed services are for fixed wireless – CDMA wireless technology. CDMA technology has enabled the incumbent CAMTEL to increase its annual turnover since 2007. Turnover increased from CFAf60.6billion in 2009 to CFAf70.4billion in 2010.

Table 10: Subscriber numbers for fixed telephony services, 2004 to 2011

	2004	2005	2006	2007	2008	2009	2010
Total fixed subscribers	**99 439**	**100 331**	**150 706**	**169 222**	**255 306**	**469 648**	**539 504**
Net increase	2 046	892	50 375	18 516	86 084	214 342	69 856
Rate of increase	2.1%	0.9&	50.2%	12.3&	50.9%	84%	14.9%
Teledensity	0.59%	0.57%	0.84%	0.92%	1.35%	2.43%	2.72%
Fixed-line subscribers	**99 439**	**100 331**	**12 318**	**73 348**	**71 898**	**66 332**	**65 808**
Net increase	2 046	892	11 987	-38 970	-1 450	-5 566	-524
Rate of increase/ decrease	2.1%	0.9%	11.9%	-34.7%	-2%	-7.7%	-0.8%
Fixed-wireless CDMA subscribers	**N/A**	**N/A**	**38 388**	**95 874**	**183 408**	**403 316**	**473 696**
Net increase	N/A	N/A	N/A	57 486	87 534	219 908	70 380
Rate of increase	N/A	N/A	N/A	149.7%	91.3%	119.9%	17.7%

Source: ARCEP (2010)

Investment in the fixed sector was CFAf36.4billion in 2009 and CFAf37.6billion in 2010. Nonetheless, the fate of the classic fixed line is an issue of concern. Its contribution to telecommunications services continues to diminish with many potential consequences including high costs and loss of technological opportunities (such as the use of ADSL and ISDN to provide multi-play services).

Mobile telephony

As seen above, mobile services are the dominant ones in the telecommunications sector. The mobile market is still a duopoly, consisting of MTN and Orange. Viettel, a 3G mobile provider, is to become operational in mid-2013. Viettel is a Vietnamese operator already present in Vietnam, Laos, Cambodia, Haiti, Peru, and Mozambique.

The new player in 2012, Set'Mobile, is a virtual MVNO owned by Cameroonian football star Samuel Eto'o. The entrance of Set initially generated confusion over the real nature of its services. Set was presented as a full mobile operator, compelling the regulator TRB to clarify the virtual status of the newcomer (an MVNO selling products operating on the Orange network).

Half the surveyed population were owners of a mobile phone or an active SIM card

According to the findings of the 2012 RIA Cameroon ICT Survey, 50.6% of people aged 15 years and older[2] were owners of a mobile phone or an active SIM card in 2012, a significant increase over the 36.5% figure in the 2008 RIA Cameroon Survey.

Among 11 RIA countries surveyed in the 2012 RIA ICT Surveys, Cameroon ranks eighth in terms of the percentage of phone or active SIM ownership (see Figure 2 below) – a low ranking given that Cameroon was one of Africa's pioneering countries in terms of deployment of mobile GSM technology.

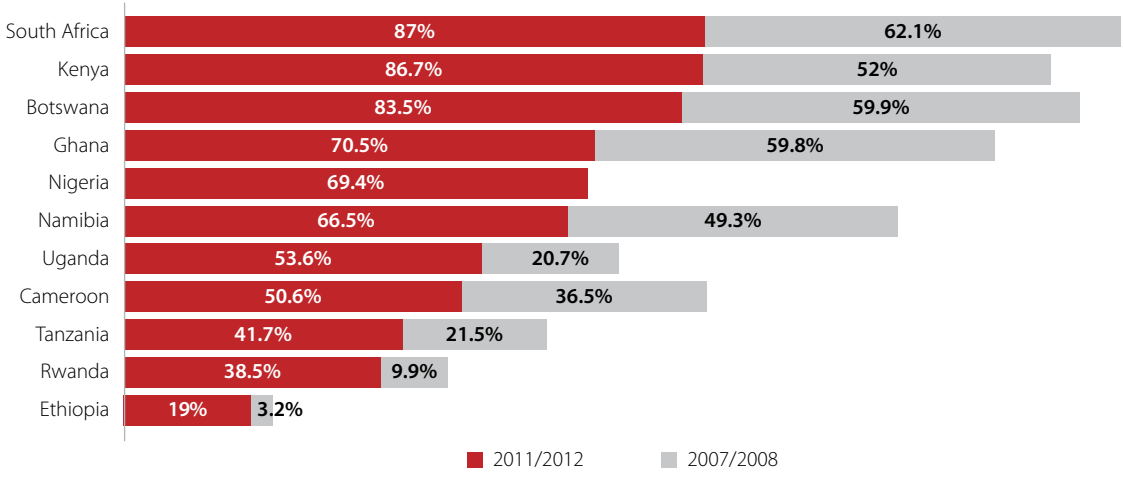


Figure 2: Ownership (%) of a mobile phone or active SIM in RIA Survey countries, 2012 and 2008

Source: RIA ICT Survey data 2011-12 and 2007-08

Today price asymmetries between MTN and Orange are no longer significant

The 2012 RIA Cameroon Survey found that among mobile users in Cameroon, only 22.6% have more than one active SIM (see Figure 3 below). This would appear to be a shift from years past (the percentage was 51% in the 2008 RIA survey) when multiple-SIM ownership was quite common due to price asymmetries between the two mobile firms. Today, price differences between MTN and Orange are no longer significant.

[2] For the 2012 RIA ICT Surveys, the sample was drawn from people aged 15 years or older. The 2008 RIA Survey samples were aged 16 years and older.

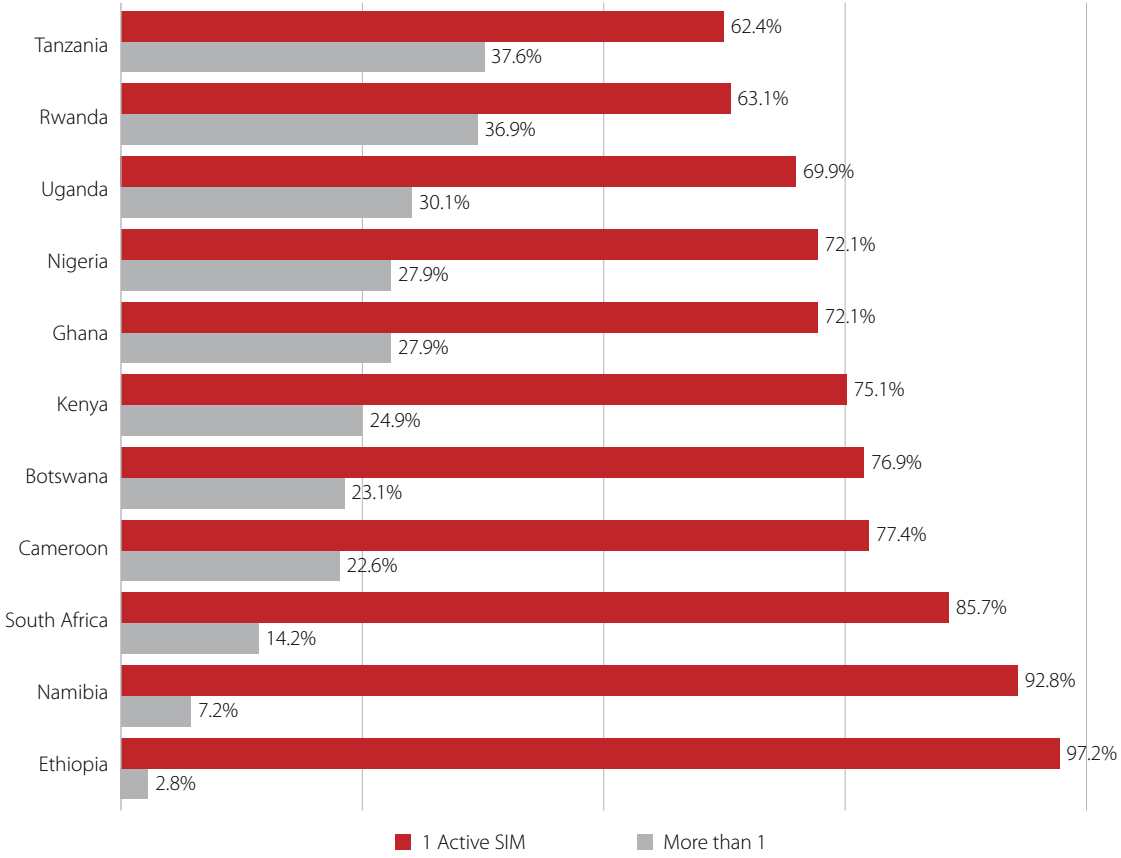


Figure 3: Single-SIM versus multi-SIM ownership in RIA Survey countries, 2012

Source: RIA ICT Survey data 2011-12

Cameroon ranks fourth highest among RIA survey countries in terms of its percentage (77.4%) of single-SIM subscribers, behind only Ethiopia, Namibia, and South Africa. In addition to the fact that the cost of services is almost the same between the two mobile operators, the mandatory SIM card registration exercise imposed by MINPOSTEL since 2008 might also be a factor discouraging multiple-SIM use.

As for payment methods, the 2012 RIA Survey confirms what has been revealed by other sources: more than 99% of the mobile users in Cameroon are prepaid. As shown in Figure 4 below, all 2012 RIA ICT Survey countries except South Africa have 90% or greater prepaid use, with eight of the RIA countries, including Cameroon, having more than 97% prepaid use. Looking at the payment pattern of African users, it is clear that the prepaid payment tool has been central to the growth and success of mobile in Africa.

It is clear that the prepaid payment tool has been central to the growth and success of the mobile sector

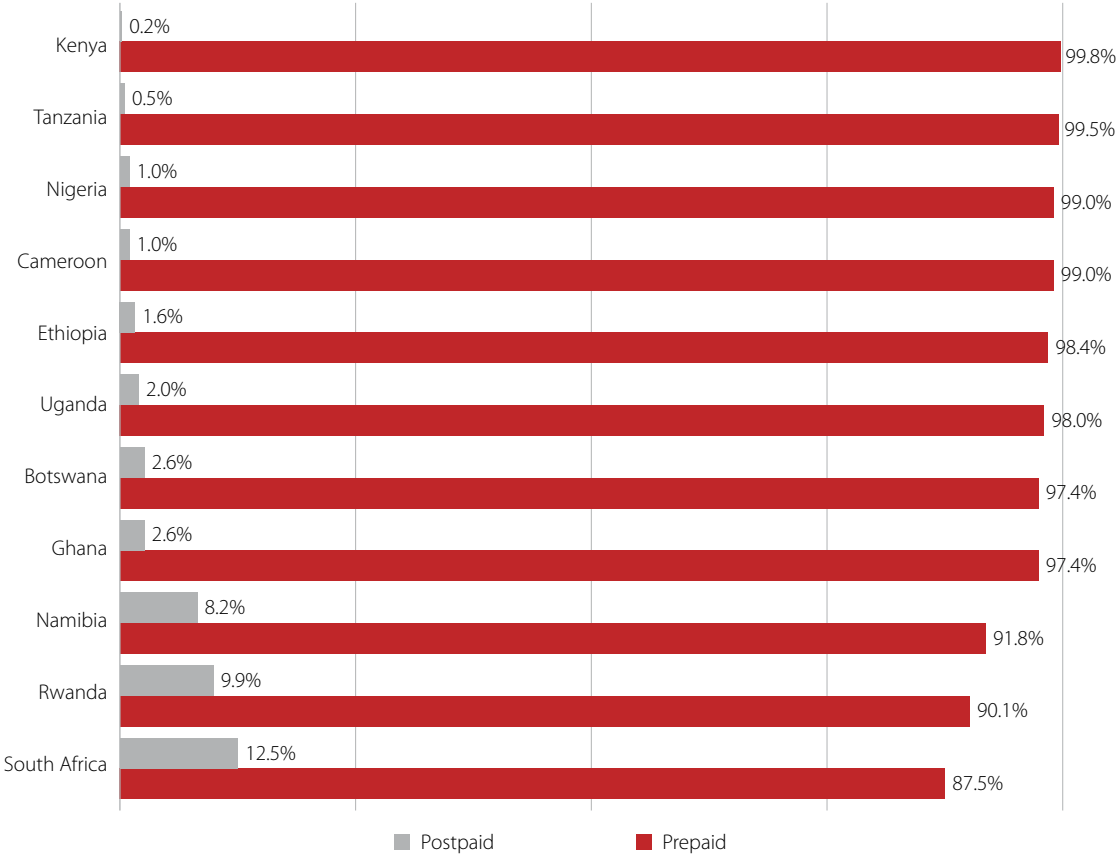


Figure 4: Prepaid versus postpaid mobile subscribers in RIA Survey countries, 2012

Source: RIA ICT Survey data 2011-12

Demand for more affordable airtime has increased significantly as telecommunications costs restrain market growth.

The responses to the 2012 RIA Survey questions related to price sensitivity showed that in the hypothetical case of a price decrease of 50%, 47.9% of respondents would double their use of telephony services (and another 2.7% would more than double their use). In contrast, it was found in the 2008 Survey that only 27.1% would double phone use if costs came down by 50%. These findings suggest that pent-up demand has increased significantly since 2008, that telecommunications costs are restraining market growth, and that the mobile duopoly has not served user needs.

Table 11: Predicted shift in telephony use if costs decreased 50% in RIA Survey countries, 2012 and 2008

Country	Survey	Unchanged phone use	Slight increase	Double my phone use	More than double my phone use
Kenya	2012	17.9%	44.5%	31.1%	6.5%
	2008	13.4%	45.8%	27.3%	13.5%
Tanzania	2012	31.3%	52.8%	13.0%	2.9%
	2008	27.9%	35.5%	23.7%	12.9%
Rwanda	2012	24.5%	53.1%	21.0%	1.4%
	2008	22.9%	40.8%	11.1%	25.1%
Ethiopia	2012	10.7%	70.2%	16.7%	2.3%
	2008	30.1%	45.2%	21.3%	3.4%
Ghana	2012	22.8%	45.8%	24.9%	6.5%
	2008	18.7%	49.2%	21.3%	10.9%
Cameroon	**2012**	**16.9%**	**32.6%**	**47.9%**	**2.7%**
	2008	**14.3%**	**52.2%**	**27.1%**	**6.4%**
Nigeria	2012	15.9%	27.7%	48.4%	8.0%
	2007/2008				
Namibia	2012	13.4%	48.0%	29.9%	8.7%
	2008	20.6%	20.7%	26.7%	32.0%
South Africa	2012	27.5%	33.5%	33.5%	5.5%
	2008	27.6%	38.4%	18.5%	15.5%
Botswana	2012	25.1%	30.8%	36.5%	7.6%
	2008	31.8%	42.4%	21.7%	4.0%

Source: RIA ICT Survey data 2011-12 and 2007-08

Internet/broadband

QoS and retail charges have remained the same, rendering little change in daily internet use

The internet/broadband penetration rate is much lower than for voice telephony in Cameroon. Officially, by working to harness the potential of optical fibre, Cameroon is entering the broadband era. But in reality, things have not yet significantly changed for the daily user. QoS has not improved, and retail charges have not dropped. As Figure 5 shows, internet use in Cameroon sits at only 1.3%.

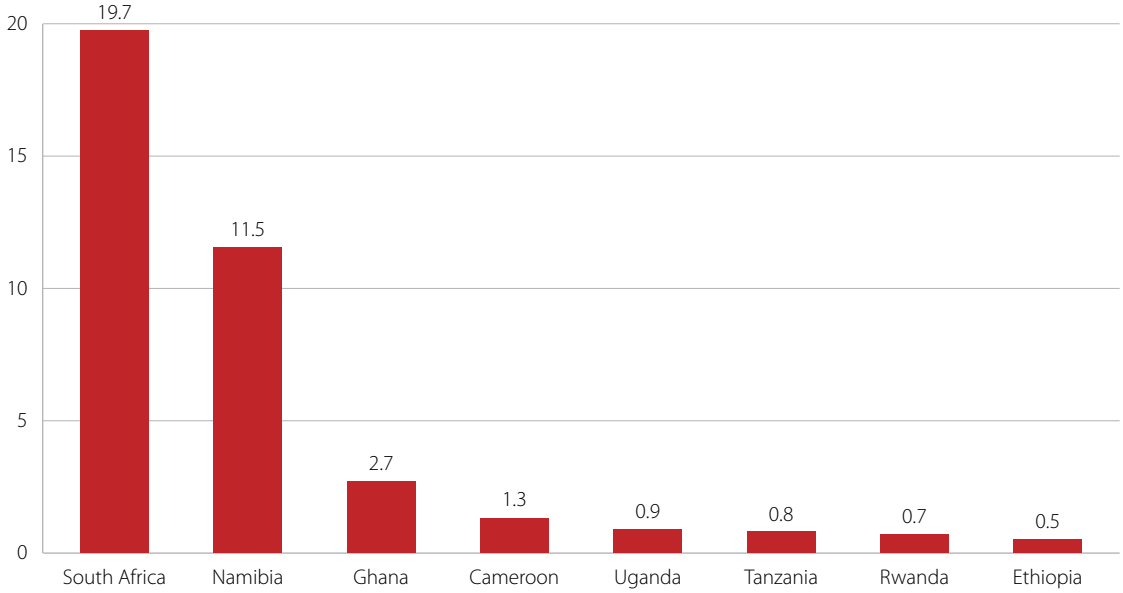


Figure 5: Internet users in RIA countries, 2012 (%)

Source: RIA ICT Survey data 2011-12

Affordability is the main obstacle to internet connection in Cameroon

In the 2012 RIA Survey, 49% of respondents cited affordability as the main reason for not having an internet connection, as demonstrated in Figure 6 below, which signifies the presence of a potential broadband market that has yet to be satisfied.

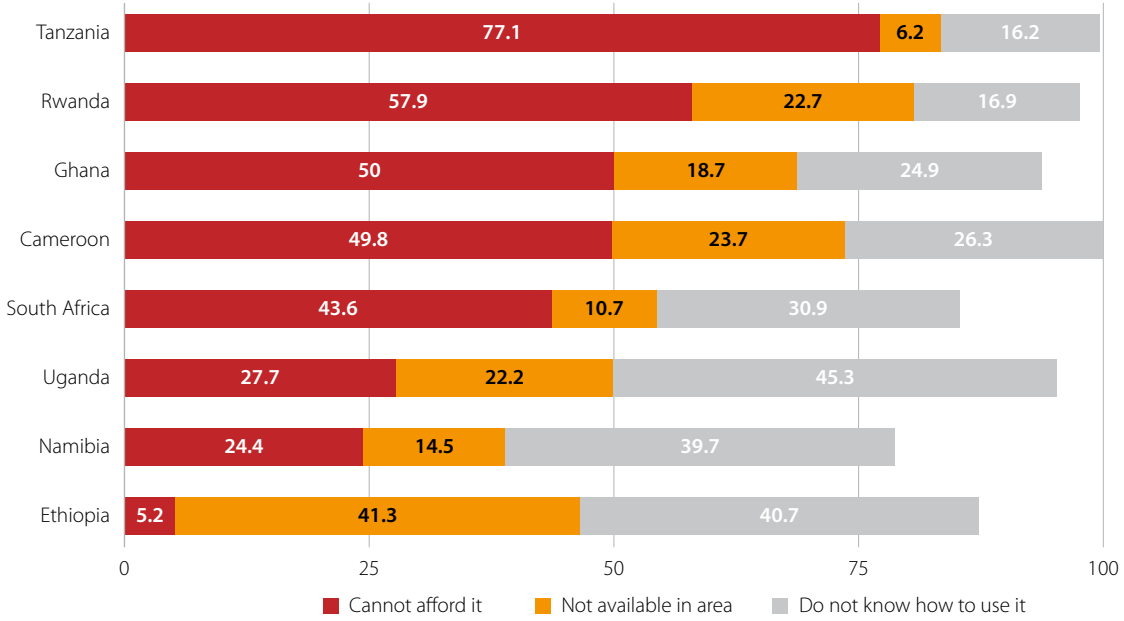


Figure 6: Main reason for not having an internet connection

Source: RIA ICT Survey data 2011-12

Among the eight countries covered in Figure 6, Cameroon (49.8%) trails only Tanzania (77.1%) and Rwanda (57.9%) when it comes to the percentage of people citing affordability as the main reason for not having an internet connection.

Providers are supplying various technologies and offering a range of packages – sometimes bundled together with voice services. These offerings, in tandem with the increasing number of data-enabled and smart devices (phones, phablets, and tablets), can be expected to drive internet take-up in the coming years.

The 2012 RIA Cameroon Survey found that radio and television continue to play an important role in the country's ICT sector. However, the radio audience was found to be small, with the percentage of people reporting that they listen to radio shrinking to 30.4% in 2012, down from 61.9% in 2008 and the lowest level of any of the 2012 RIA ICT Survey countries. This is a strange survey finding considering radio's connection to the strong oral communication tradition in Cameroon and the growth in radio services in the last five years. More than 200 stations are now competing for the 19million potential listeners, and the prices of radio sets have fallen sharply. Thus, this RIA Survey finding is either erroneous (e.g. a result of respondent misunderstanding of the question) or signals a paradigm shift we the authors are not aware of and are thus unable to explain in this report.

Cameroon has the lowest percentage of radio listeners of all study countries

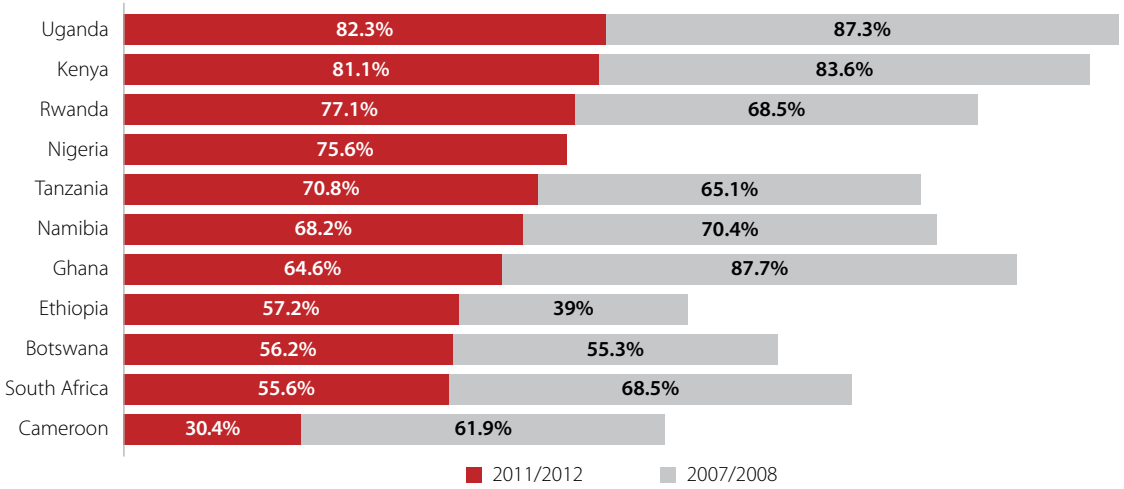


Figure 7: Radio listeners (%) in RIA countries, 2012 v. 2008

Source: RIA ICT Survey data, 2007-08 and 2011-12

There has been almost no change in TV viewership

Meanwhile, the percentage of individuals who claimed to watch TV was found to be 53% in the 2012 RIA Survey, a nearly identical finding to the 53.6% score in the 2008 Survey (see Figure 8), that puts Cameroon in sixth place among RIA Survey countries.

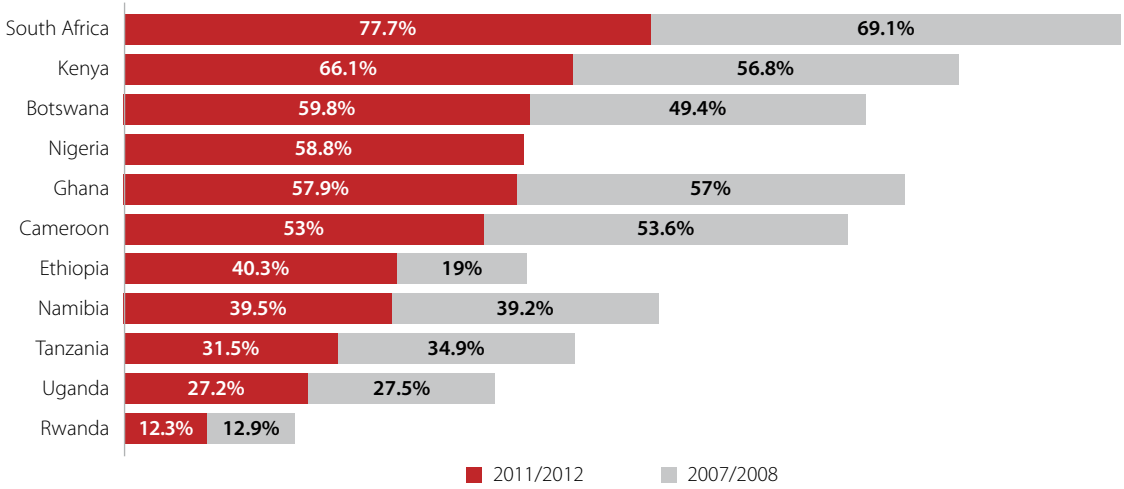


Figure 8: TV watchers (%) in RIA countries, 2012 and 2008

Source: RIA ICT Survey data, 2007-08 and 2011-12

The 2012 RIA Survey findings thus suggest that there is a significant number of Cameroonians that consume neither radio nor TV. Notwithstanding the seeming unreliability (mentioned above) of the 2012 radio audience finding, it is not clear from the Survey how people who consume neither radio nor TV keep themselves informed. The answer is almost certainly traditional means of communication (not accounted for in the Survey questionnaire) based on word-of-mouth.

There is a significant number of Cameroonians who rely on traditional means of communication

In terms of computers, Cameroon ranks third among 2012 RIA ICT Survey countries for individual use of a computer (PC or laptop), with an individual use percentage of 15.1%, behind only South Africa and Kenya (see Table 12 below). However, the findings on "place of use" suggest computer ownership is still quite low, as only 20.7% of computer users use a computer at home, while 63.5% use cyber cafes, 34.4% use one at school/university, 20.7% at work, and 7.7% at a library.

Table 12: Individual computer (PC or laptop) use in RIA countries

Country	Individuals who use a computer (15 yrs+)	Location where the computer is used (multiple response)					
		Work	School, university	Library	Home	Internet café	A friend's place
South Africa	29.1%	40.2%	22.8%	6.1%	61.1%	29.0%	20.7%
Kenya	21.2%	36.8%	40.2%	16.9%	56.0%	68.8%	45.9%
Cameroon	**15.1%**	**20.7%**	**33.4%**	**7.7%**	**38.0%**	**63.5%**	**35.9%**
Namibia	13.0%	60.6%	36.7%	28.5%	73.1%	28.4%	45.5%
Ghana	10.0%	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%	25.0%	35.7%	57.0%	60.9%
Rwanda	3.5%	54.5%	35.3%	18.9%	59.4%	45.2%	25.1%
Ethiopia	2.0%	34.1%	48.4%	9.2%	23.9%	28.5%	5.3%
Tanzania	1.9%	41.0%	23.6%	8.5%	47.7%	65.8%	27.8%

Source: RIA ICT Survey data 2011-12

Emerging trends

The current development of ICTs in Cameroon is characterised by a number of emerging trends. Some appear to be healthy for a sector in search of new models while others are less promising.

Decline of fixed-line connections

According to ARCEP data, fixed-line subscribers had fallen to around 60 000 by 2010 (ARCEP, 2010). This trend is a representation of the fate of the existing copper network as well as opportunities not properly capitalised on by fixed-line technology improvements such as ISDN and ADSL. Allowing fixed-line networks to become completely extinct would potentially mean accepting high communication costs, poor QoS, and a degree of communication insecurity for the foreseeable future.

Extinction of public payphones

The success of mobile telephony is killing off public payphones

The success of mobile telephony is killing off public payphones as well, which are now looked upon as antiques.

According to the 2012 RIA Survey, many people (44.7%) still use public phones at least once a month. These are typically public phones operated by umbrella operators connected to mobile networks (which account for 81.1% of all public phone interaction, according to RIA data). And many (38.9%) of these already-infrequent public phone users say that increased penetration would not make them increase their use. The declining costs of mobile phone handsets and of making voice calls have made individual mobile phone ownership/use increasingly accessible, thereby undermining the need for public phone services.

The small entrepreneurs who operate the umbrella phones on mobile networks have had to diversify into selling airtime and becoming mobile money agents in order to survive.

Mobile internet access

Mobile operators have been active in the internet market since 2006, the year of MTN Cameroon's takeover of SACONETS, a major internet provider. The move attracted outcries from Orange and CAMTEL, and as a compensational measure the government decided to allow mobile operators to provide internet services and has granted a mobile licence to the incumbent CAMTEL.

If the CAMTEL mobile licence and the anticipated third mobile operator (Viettel) become operational, there would be four operators competing for a share of the promising mobile internet market, potentially driving down prices and increasing penetration.

Cameroon ranks last in mobile internet use among study countries

But the expected new operator Viettel will face difficulties getting into the market. In addition to new pricing strategies deployed by Orange, MTN, and CAMTEL, there are infrastructural and administrative hurdles for the Vietnamese-owned operator. At present, according to the 2012 RIA Survey, Cameroon ranks last among RIA Survey countries in the use of mobile internet (at 9.8% penetration). Among the users, 69.4% of household users claimed to access the internet via mobile 3G services. However, the respondent statements were not truly accurate, since 3G technology has not yet been introduced in Cameroon. In fact, they use 2G technologies to access the internet. This is one of the reasons why mobile internet is struggling to take off in Cameroon: not only is it too expensive, but 2G is also too slow and too unstable. Viettel would be Cameroon's first 3G operator.

Mobile financial services

Mobile operators are viewing mobile money as the next frontier for their development and, according to the 2012 RIA Survey, this is becoming a reality in more and more RIA countries. But Cameroon's mobile money take-up is very low with only 0.4% of respondents claiming to use the service – a marked contrast to the high levels of use in Kenya and Kenya's East African neighbours.

Mobile operators are viewing mobile money as the next frontier for development

There are several possible reasons for the limited use of mobile money in Cameroon. To start, the country is already served by a very efficient network of money transfer organisations, such as MoneyGram. Additionally, the banking sector is quite diversified, with hundreds of micro financial institutions coexisting alongside the traditional banks of the country. Another reason may be related to the cash nature of business transactions. According to one account: "Cameroon's economy is heavily cash dependent. Business executives and government officials alike carry large amounts of cash when they travel to settle transactions" (Know Your Country, n.d.).

Nigeria's mobile money take-up is also low at 0.5%, according to the 2012 RIA ICT Survey data, but that can be partially explained by the fact that in Nigeria, a relatively large number (30.5%) of RIA respondents claim to own a bank account (mobile money is seen as particularly attractive to people without bank accounts). In Cameroon, only 10.8% of RIA respondents say they have a bank account, suggesting that mobile money still presents a potential trend for the future.

Cameroon's economy relies mostly on cash - only 10.8% of respondents claimed to have a bank account

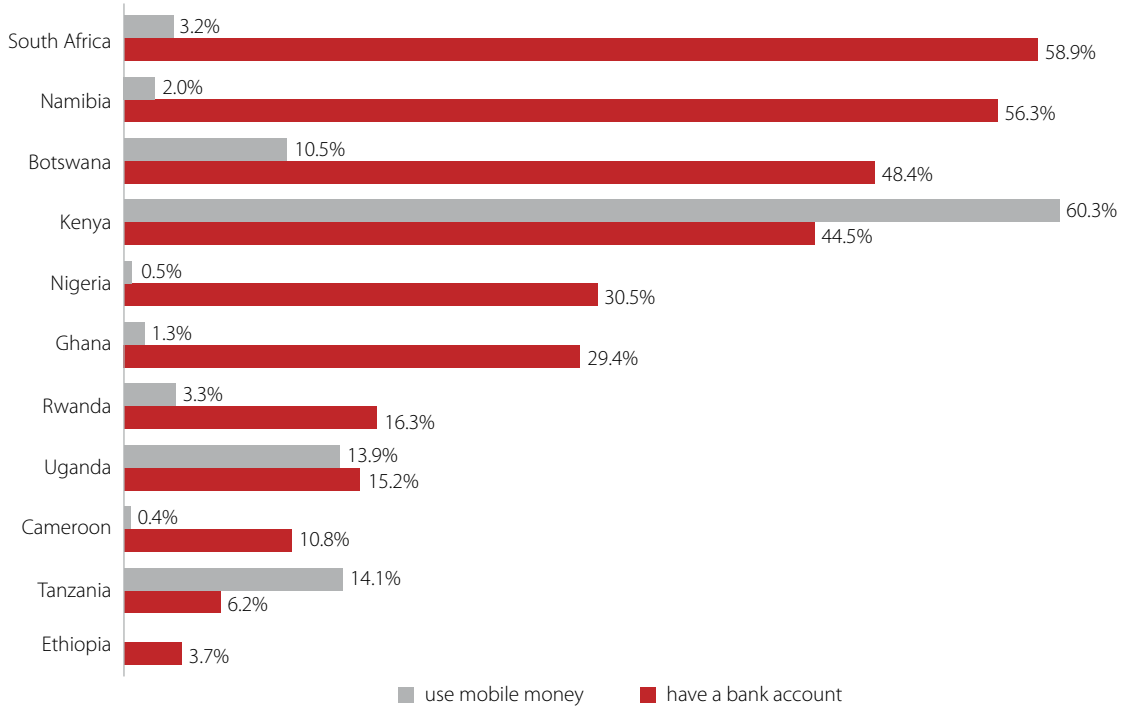


Figure 9: Bank account ownership and mobile money use in RIA Survey countries, 2012

Source: RIA ICT Survey data 2011-12

Mandatory SIM registration

SIM card registration has become mandatory under sector regulation

Since 2008, MINPOSTEL has made mandatory the registration of all mobile subscribers' SIM cards. After several years of confusion and resistance, the registration process has now become effective on the different networks with all non-registered SIMs deactivated by the end of 2012. The current mobile phone users are thus only those registered with their operator. Among other things, SIM registration can be expected to help improve the accuracy of data on the real number of subscribers, and to limit the ease with which subscribers can acquire additional SIMs.

Mobile gambling

Seldom does a day go by without a mobile subscriber being offered an online gambling opportunity

Letting the mobile telephony operators enter the gambling industry is viewed by most Cameroonians as proof of regulatory *laissez-faire*. Seldom does a day go by without a mobile subscriber being offered a gambling opportunity, such is the pervasiveness of the mobile operators' marketing of such services. Since no direct exchange of money takes place, players can easily get the false impression that their participation is not overly harmful to their finances.

The typical scheme is as follows: a prize is proposed to the user (generally money, but sometimes a car, a motorcycle, or another product) via SMS. In order to be eligible to win, the user must send back a specified answer by SMS e.g. a single word such as "yes", "continue", or "accept". The cost of submitting the answer typically varies between CFAf150 and CFAf250 (i.e. three to five times the cost of an ordinary SMS of up to 180 characters). A typical cycle for one of these games takes a week, but sometimes a month, and a game cycle can require a player to submit as many as 50 SMSs. At CFAf150 per SMS, the resultant expenditure is large given the low disposable income of the average Cameroonian.

There has not yet been a study yet to assess the impact of this gambling trend, but there is little doubt that the consequences for gamblers lured into these processes can be devastating. For people with tendencies towards pathological or "problem" gambling, access to gambling via their mobile handset can lead to considerable social, economic, and psychological consequences.

Informal sector ICT use

One of the components of the 2012 RIA Survey was a nine-country survey of informal sector ICT use, which analysed three dimensions: (1) ownership, (2) access, and (3) use. The dynamism of informal business people in Cameroon has been acknowledged by various sources. A report published by the World Bank in 2012 finds that in Cameroon "almost all members of the work force (90 per cent) earn their living in the informal sector" (World Bank, 2012).

Informal businesses are more or less equally owned between the two sexes

The 2012 RIA Survey found that Cameroonian informal businesses scored fairly well in terms of the gender balance of their ownership, with 41% female ownership and 43% male ownership (see Figure 10). These findings are supported by other studies carried out to assess the gender divide in the informal sector of the country's economy (Réseau genre et TIC, 2005).

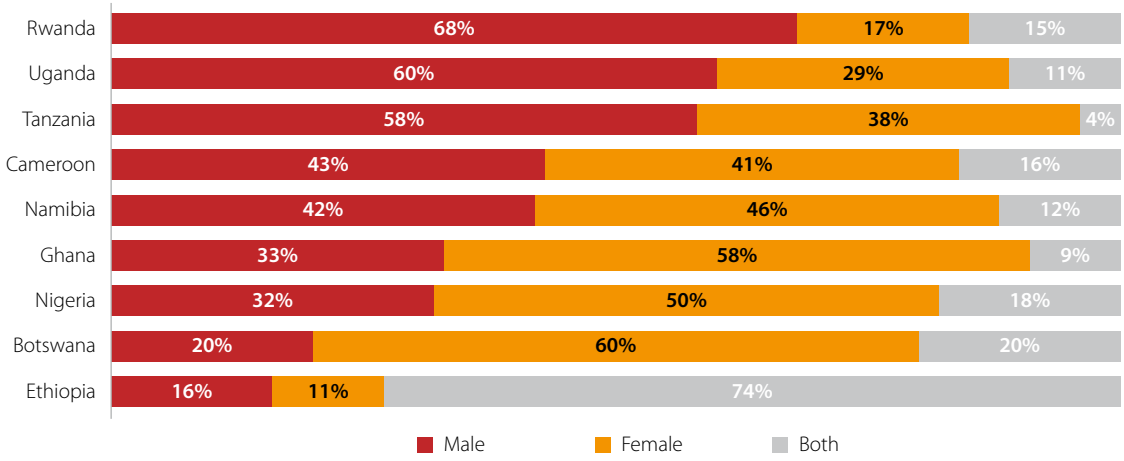


Figure 10: Gender of informal business owners in RIA Survey countries, 2012

Source: Deen-Swarray et al. (2013)

In terms of use, only 1.3% of informal sector businesses surveyed in Cameroon reported ICT use (Figure 11).

Very few informal businesses use ICT services

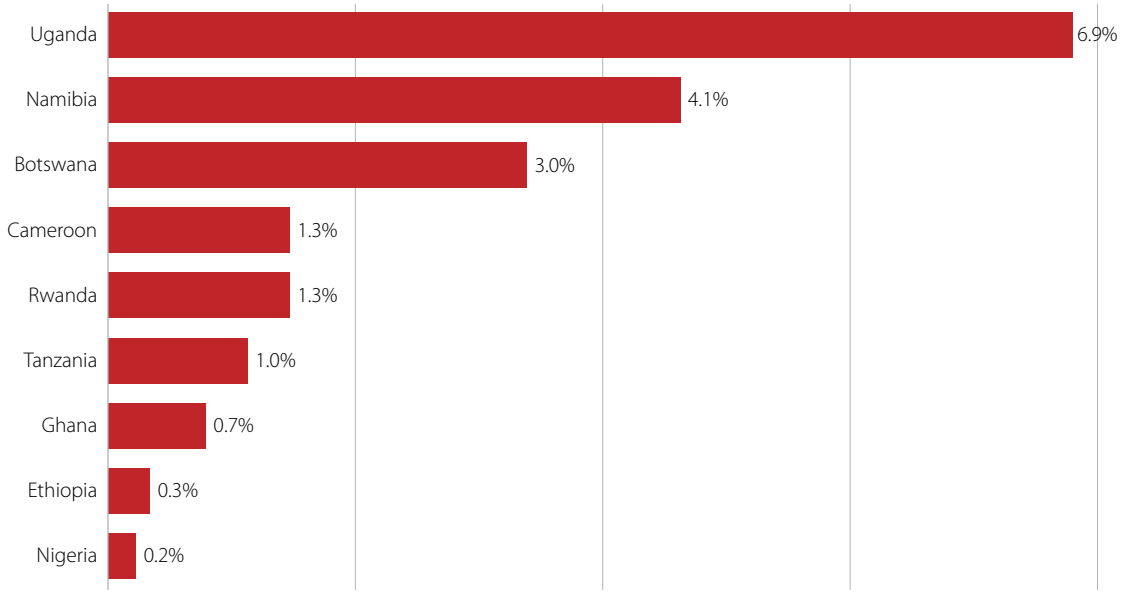


Figure 11: Informal business ICT use in RIA Survey Countries, 2012

Source: RIA ICT Survey data 2011-12

Computers and the internet are the ICT tools preferred by informal businesses

The ICTs deployed most among the small number of Cameroonian informal sector businesses that use ICTs are computers and the internet (Figure 12), with mobile use not as prevalent (likely due to the still-high cost of mobile services in the country).

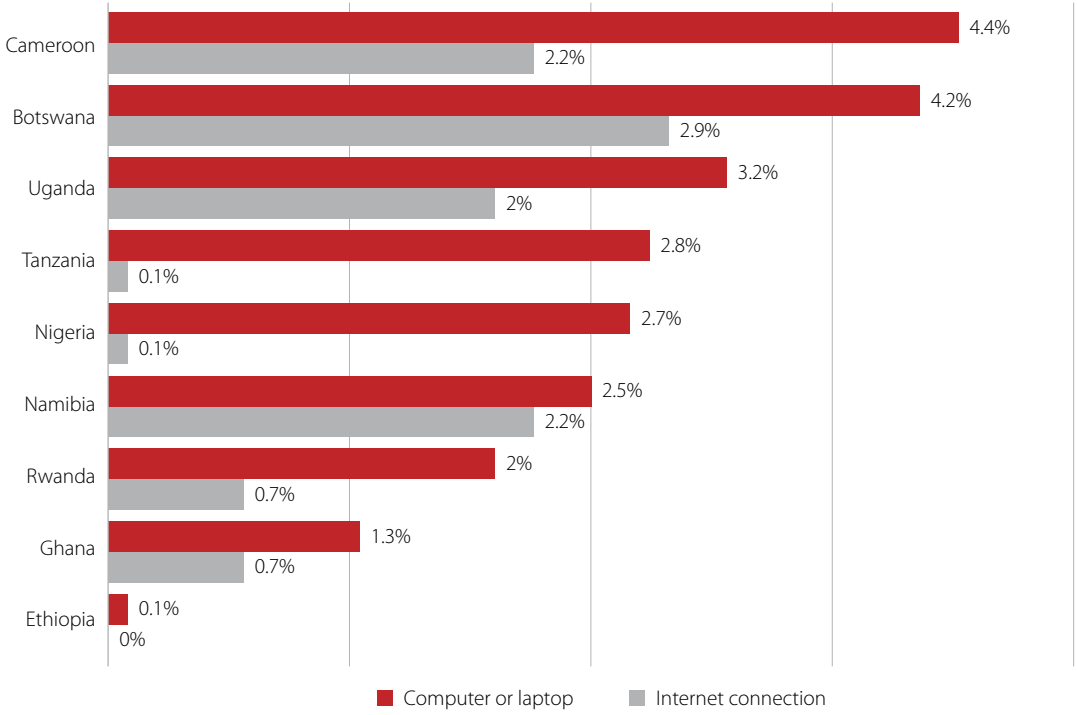


Figure 12: Informal business use of computer and internet services in RIA Survey countries, 2012

Source: RIA ICT Survey data 2011-12

Telecom Regulatory Environment (TRE) assessment

Using the TRE research method developed by LIRNEasia (see LIRNEasia, 2008), a TRE assessment aims to provide insight into current perceptions of a country's telecommunications regulation. The 2012 RIA Cameroon TRE assessment was the third conducted by RIA in the country, following the TRE exercises of 2006 and 2009. Ninety-five of the 150 telecommunications stakeholders targetted by the Cameroon TRE assessment responded to the questionnaires sent out between February and March 2012. In line with the TRE methodology, three categories of stakeholders were targetted:

- **Category 1:** Stakeholders directly affected by telecommunications sector regulation, e.g. operators, associations, equipment suppliers, and investors;
- **Category 2:** Stakeholders who analyse the sector with broader interest, e.g. financial institutions, equity research analysts, credit rating agencies, telecommunications consultants, and law firms; and
- **Category 3:** Stakeholders with an interest in improving the sector to help the public, e.g. academics, research organisations, journalists, telecommunications user groups, civil society, former members of regulatory and other government agencies, donors, and current government employees from organisations related to the telecommunications sector – excluding government employees in the telecommunications regulatory and policy hierarchy (i.e. excluding anyone from the regulatory agency [e.g. the TRB in Cameroon], the policymaking bodies [e.g. MINPOSTEL in Cameroon], the responsible Minister).

Seven regulatory dimensions are covered in the TRE method, as summarised in Table 13 below drawn from LIRNEasia (2008).

Table 13: Regulatory dimensions covered by a TRE assessment

Dimensions	Aspects covered
Market entry	Transparency of licensing. Applicants should know the terms, conditions, criteria, and length of time needed to reach a decision on their application. Licence conditions. Exclusivity issues.
Access to scarce resources	Timely, transparent, and non-discriminatory access to spectrum allocation. Numbering and rights of way: frequency allocation, telephone number allocation, tower location rights.
Interconnection	Interconnection with a major operator should be ensured at any technically feasible point in the network. Quality of interconnection comparable to similar services offered by own network. Reasonable rates for interconnection. Unbundling of interconnection. Interconnection offered without delay. Sharing of incoming and outgoing international direct dialling (IDD) revenue. Payment for cost of interconnection links and switch interface. Payment for cost of technical disruption of interconnection.
Tariff regulation	Regulation of tariffs charged from consumers.

Dimensions	Aspects covered
Anti-competitive practices	Anti-competitive cross subsidisation. Using information obtained from competitors with anti-competitive results. Not making technical information about essential facilities and commercially relevant information available to competitors on a timely basis. Excessive prices. Price discrimination and predatory low pricing. Refusal to deal with operators and other parties. Vertical restraints. Technical disruption of interconnection. Sharing of towers and facilities by parent company and subsidiaries in different segments of the market.
Universal service obligations (USO)	Administration of the universal service programme/fund in a transparent, non-discriminatory and competitively neutral manner, and programme/ fund not more burdensome than necessary for the kind of universal service defined by the policymakers.
Quality of service (QoS)	The actual performance of a service with respect to what is promised, depending upon the network traffic control mechanisms. Specific criteria may be call quality (for mobile and fixed), connection speeds or throughput (for broadband).

Source: LIRNEasia (2008)

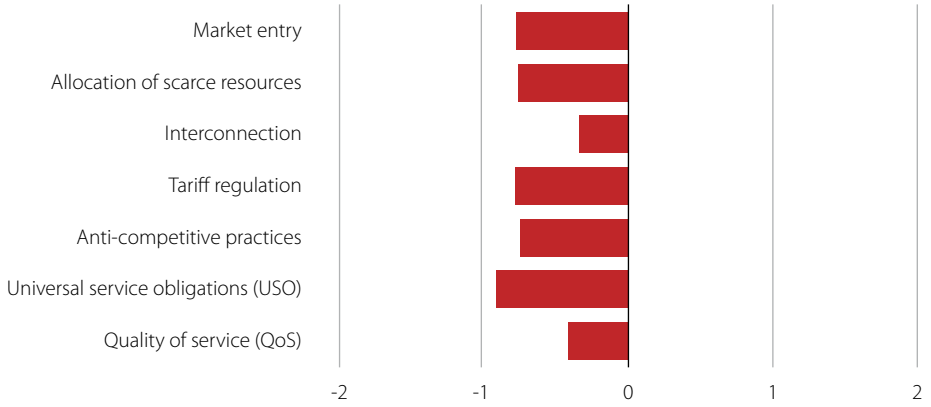
Each of the seven TRE dimensions is surveyed across three service sectors: fixed, mobile, and broadband. Within each of the three sectors, responding stakeholders' perceptions of each of the seven dimensions are sought using a Likert scale:

- highly ineffective (-2);
- ineffective (-1);
- neutral (0);
- effective (1);
- highly effective (2); or
- I don't have sufficient information to answer this question.

The seven dimensions are listed all on the same page, allowing respondents to easily make comparisons across the dimensions. In addition, a box is provided for extra feedback or comments on each of the three sectors. (The Cameroon team deployed the online SurveyMonkey platform as one of the respondent options, but only a very small number of respondents chose to use the platform.)

Regulation of fixed sector

The general finding in the 2012 RIA Cameroon TRE regarding regulation of the fixed sector was that respondents considered regulation of this sector to be ineffective across all dimensions, as shown in Figure 13.



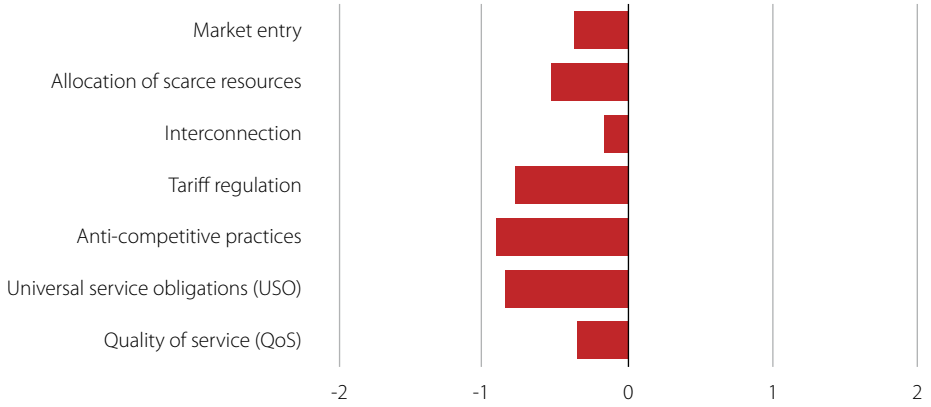
Regulation of the fixed sector is perceived as poor

Figure 13: Perception of regulation of fixed sector

Source: RIA TRE assessment data 2011-12

Regulation of mobile sector

Perception of regulation of the mobile sector (Figure 14), while negative, was found to be to generally less negative than that of the regulation of the fixed sector.



Regulation of the mobile sector is perceived generally as less ineffective than that of fixed

Figure 14: Perception of regulation of mobile sector

Source: RIA TRE assessment data 2011-12

Regulation of the broadband VANS sector

The fact that few users are concerned with VANS may explain the poor perception of the sector's regulation

Broadband value-added network services (VANS) include internet service provision and hosted service offerings between business partners sharing proprietary data. The nature of the services and the fact that few users are concerned may explain the poor perception of regulation of this service sector (Figure 15).

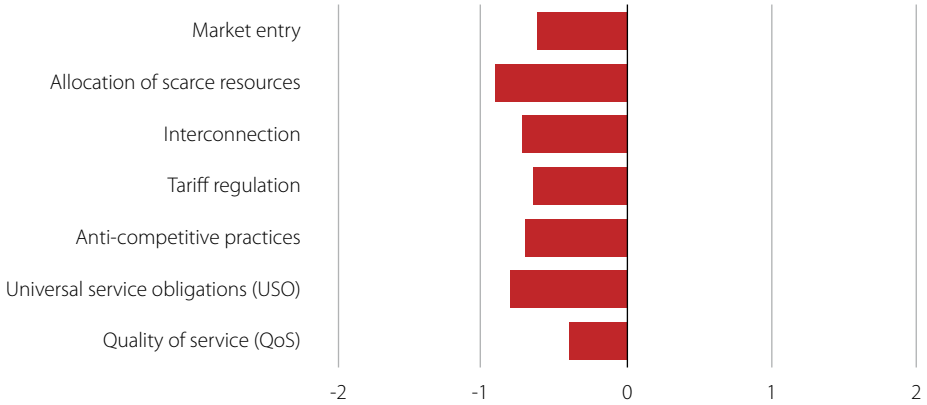
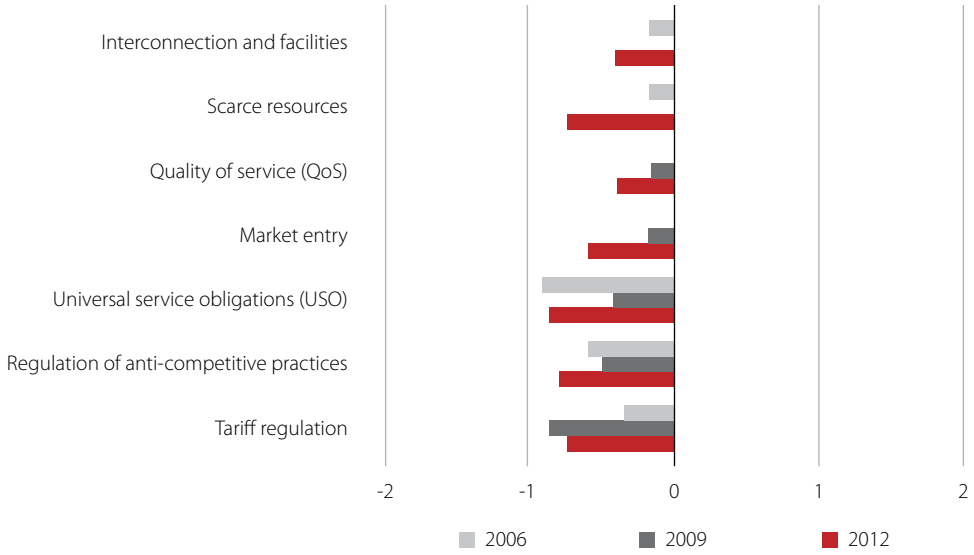


Figure 15: Perception of broadband VANS regulation

Source: RIA TRE assessment data 2011-12

Overall TRE perceptions across the TRE dimensions in Cameroon have deteriorated with each successive survey (see Figure 16).



Cameroon's overall TRE dimensions have steadily deteriorated

Figure 16: Overall Cameroon TRE scores 2006 to 2012

Source: RIA TRE assessment data 2006 to 2012

Note: the 2006 Cameroon TRE assessment only covered six of the seven TRE dimensions.

All RIA TRE assessment countries score negatively in 2012. Rwanda scores best, but still negatively. Cameroon ranks ninth out of the 12 RIA TRE assessment countries.

Figure 17 below shows trends, across the three TRE assessments – 2006, 2009, and 2012 – in RIA countries. Overall TRE scores in Namibia and Kenya have been improving over time, while several countries, including Cameroon, have poorer overall TRE ratings in 2012 than then they did in 2006.

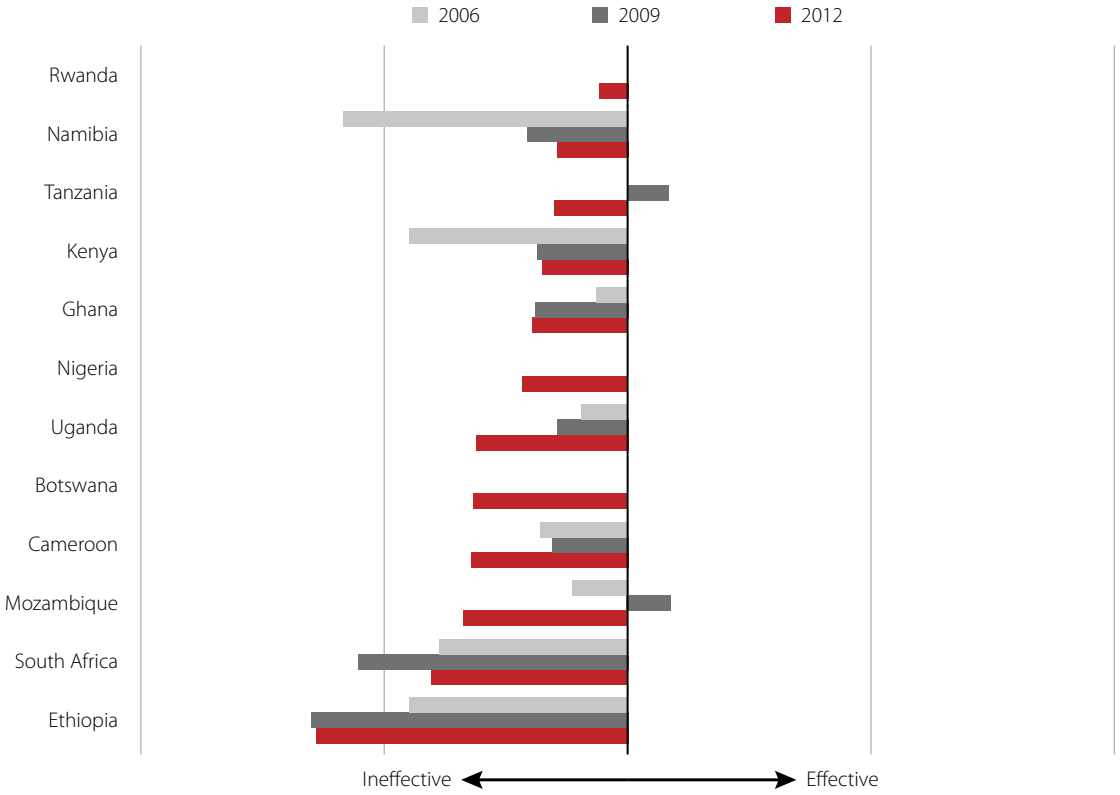


Figure 17: Overall TRE scores (2006, 2009 and 2012) in RIA TRE assessment countries

Source: RIA TRE assessment data 2006 to 2012

Regulation of interconnection

Cameroon ranks ninth among RIA TRE assessment countries for the interconnection dimension in 2012 (Figure 18).

Cameroon ranks ninth in the overall TRE scores

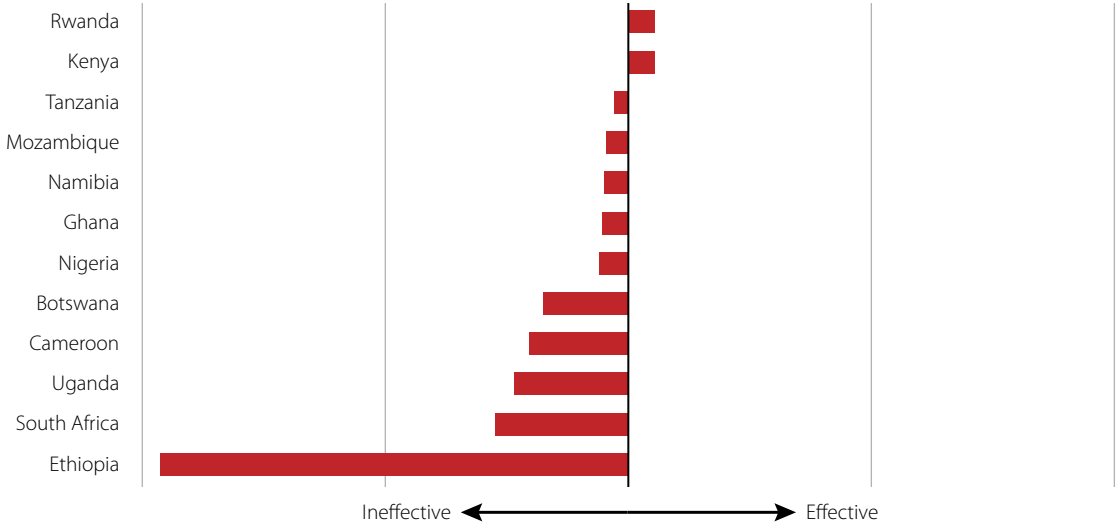


Figure 18: Regulation of interconnection in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Regulation of market entry

Cameroon's ranking on the market entry dimension is only better than Ethiopia's, a country where the state still holds a monopoly on the telecommunications sector. Being 11th among 12 countries surveyed tells a lot about the perception of the government's efforts to make the telecommunications market, still characterised by an MTN-Orange duopoly in mobile, truly competitive. Cameroon's regulation of the market structure faces two main challenges: (1) a lack of policy-regulatory credibility, and (2) a lack of skilled human resources. Recent shifts in policy, including the new separation of roles between the TRB and NAICT, seem not to have convinced stakeholders that these two challenges are being satisfactorily addressed.

Cameroon's regulation of market entry is perceived to only be better than Ethiopia's

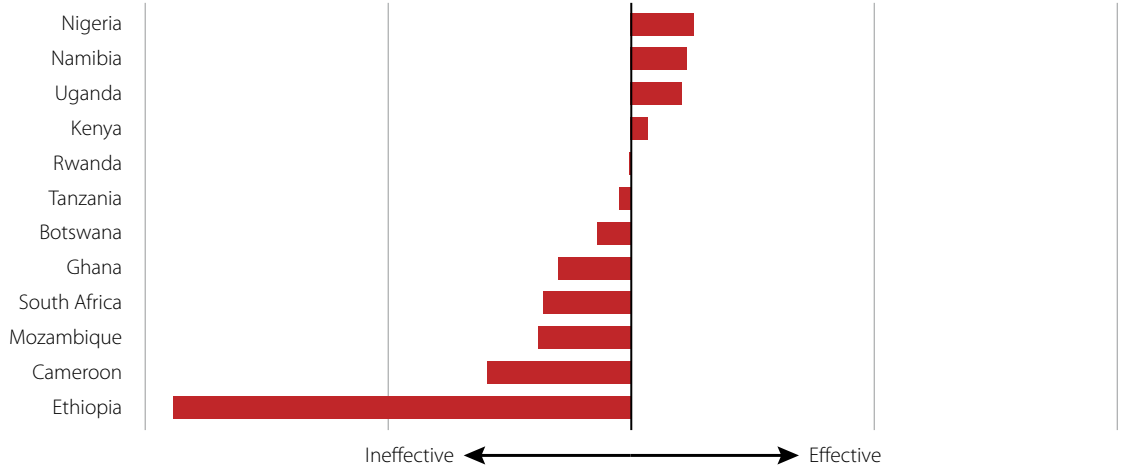
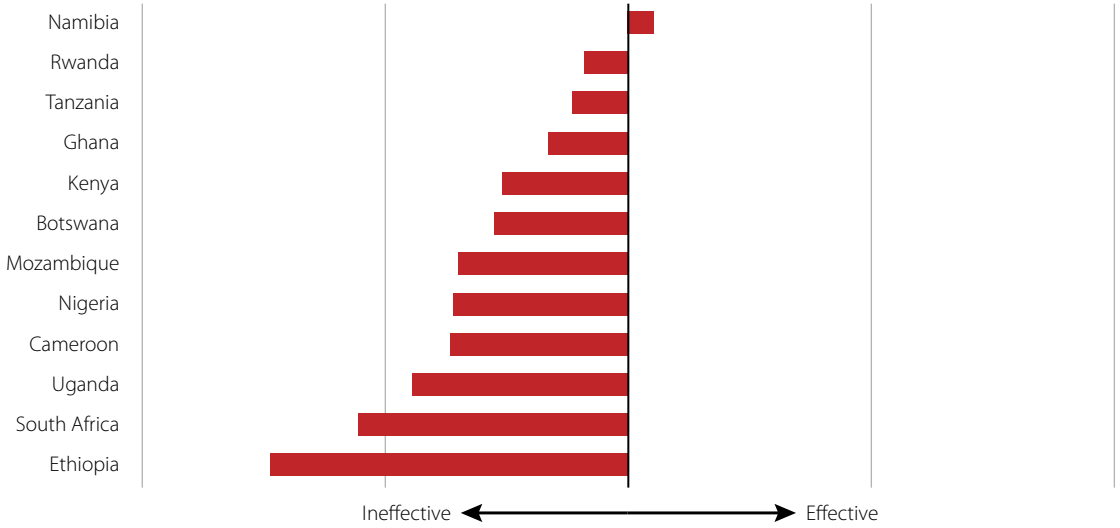


Figure 19: Regulation of market entry in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Regulation of access to scarce resources

Cameroon's ranking among RIA TRE assessment countries for management of scarce resources – such as spectrum, rights of way, and numbering – has fallen from its fifth position in 2009 to ninth in 2012 (Figure 20), and thus whatever stakeholder positivity may have been achieved by a new numbering process in 2008 appears to have dissipated.



Cameroon's regulation of access to scarce resources is perceived to only be better than Ethiopia

Figure 20: Regulation of access to scarce resources in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Regulation of USO

The term "universal" includes both affordability and accessibility aspects. The focus of universal service obligation policies is to deliver services to those segments of society that are least able to attract commercial interest. Countries that participated in the World Summit on the Information Society (WSIS) processes of 2003 and 2005 set the ambitious goal of connecting all villages of the world to ICTs by 2015 through establishing community access points and connecting universities, schools, libraries, post offices, health centres, and local governments.

Of the 2 000 telecentres promised by 2010, the Government has set up only 400

Widespread access to ICTs is important to social and economic development, and, therefore, ensuring the country's full participation in the information society is a major policy goal. Cameroon's low ranking among RIA TRE assessment countries for regulation of USO is a symptom of the fact that there is no real ICT policy targeting the rural population. Following WSIS, the government announced the launching of 2 000 telecentres by the year 2010 as a component of its USO strategy. In 2012, fewer than 400 of these telecentres have been set up, and poor management of the centres is undermining their service provision. Nonetheless, the government has adopted universal access principles and promises to provide ICT access to all citizens by the year 2025. Cameroon ranks sixth among RIA TRE assessment countries in 2012 for regulation of USO (Figure 21).

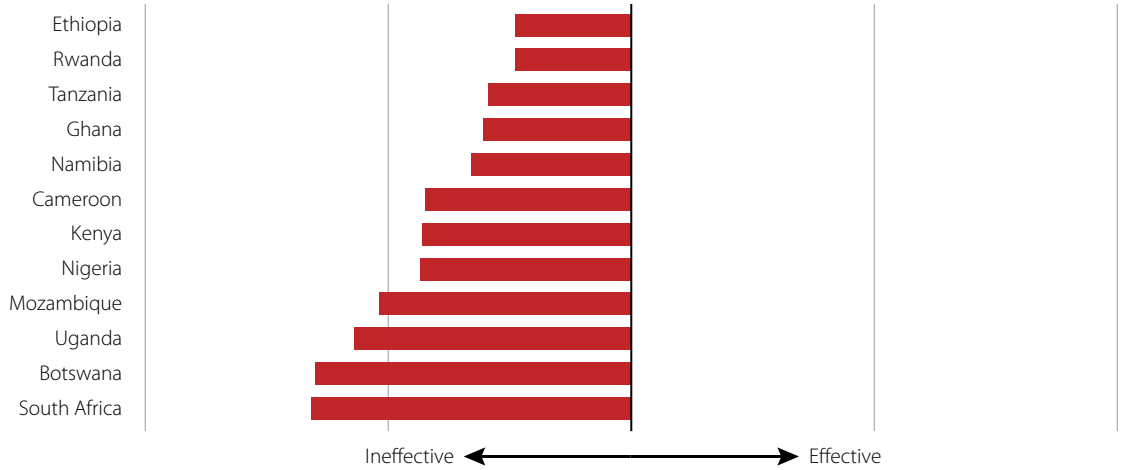


Figure 21: Regulation of USO in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Regulation of QoS

Cameroon ranks fourth among RIA TRE assessment countries for regulation of QoS in 2012, behind Rwanda, Tanzania, and Botswana (Figure 22). There has been some evidence demanding TRB concern for QoS, and the rollout of fibre-optic networks throughout the country can be expected to eventually lead to improved broadband QoS.

The rollout of fibre-optic networks can be expected to eventually lead to improved broadband QoS

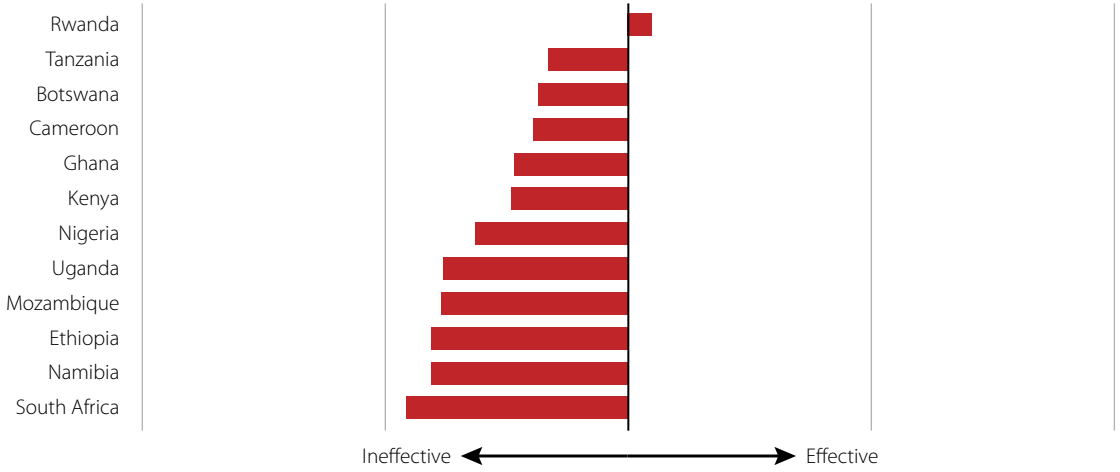


Figure 22: QoS regulation in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Regulation of anti-competitive practices

With only two mobile operators and a struggling fixed sector monopoly the regulation of anti-competitive practices receives little attention

With only two mobile players and a struggling incumbent in the fixed sector, Cameroon's regulation of anti-competitive practices is not receiving the attention it requires. The country ranks ninth among RIA TRE assessment countries in terms of stakeholder perception of this regulatory dimension in 2012 (Figure 23).

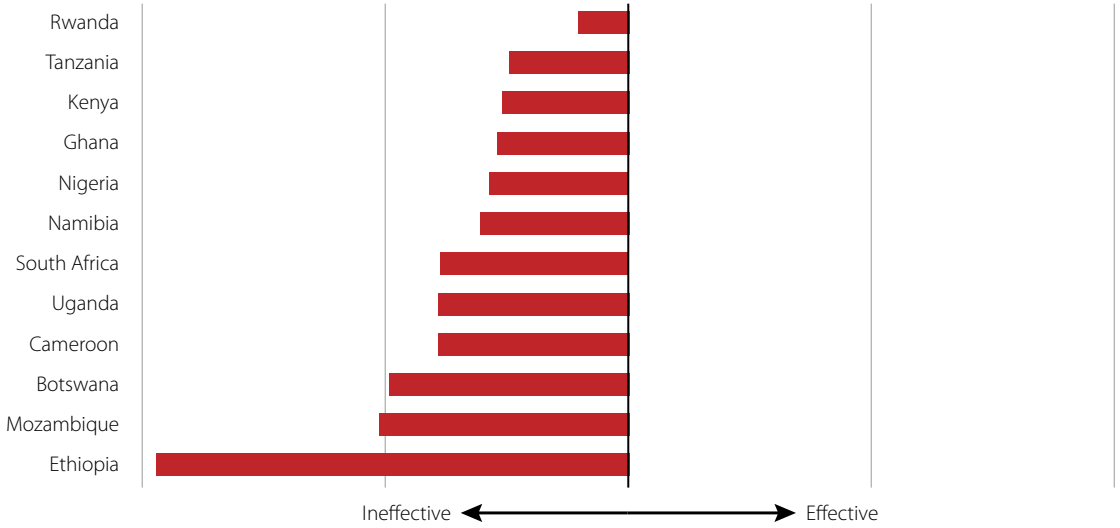


Figure 23: Regulation of anti-competitive practices in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Regulation of tariffs

Tariff regulation serves the fundamental purpose of preventing abuse of dominance. The more markets become competitive, the less tariff regulation becomes an important regulatory function. In Cameroon, where the two mobile operators MTN and Orange have created a *de facto* duopoly, tariff regulation is critical. But Cameroon's TRE score for this dimension sits at the bottom of the ranking of RIA TRE assessment countries, level with Botswana in 11th place. Cameroonian stakeholders surveyed for the TRE are likely to be of the view that, given the confusing pricing tactics employed by the operators, the TRB is leaving consumers at the mercy of the operators – a negative perception not helped by the TRB failing to follow through on its threat to cap operator pricing.

The TRB is likely perceived as leaving consumers at the mercy of operators with confusing price tactics

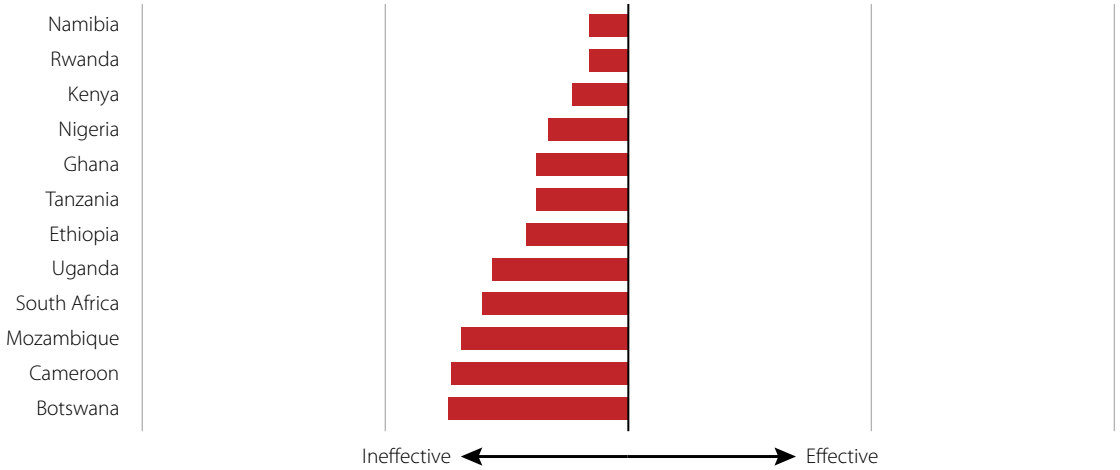


Figure 24: Tariff regulation in RIA TRE assessment countries, 2012

Source: RIA TRE assessment data 2011-12

Conclusions and recommendations

Cameroon's ICT sector is not living up to its potential in terms of employment creation, wealth creation, or support for innovation. A weak regulatory framework, ineffective consumer advocacy, and the MTN-Orange duopoly in the mobile sub-sector are among the central causes of this poor sector performance.

Symptomatic of weak ICT sector performance is the fact that Cameroon is still one of the few African countries without a 3G mobile operator. The first 3G licensee Viettel has so far failed to enter the market seemingly due, *inter alia*, to anti-competitive tactics deployed by the existing operators MTN and Orange, and the fact that the new 3G operator needs to build its infrastructure from scratch.

The sector's difficulties are exacerbated by the fact that incumbent fixed operator CAMTEL, long pampered by government, is not only struggling to survive, but its mobile branch is still in limbo, and its monopoly over fixed-line and optical fibre operations can be terminated at any time by a law from parliament. The inefficiency of the fixed network is obliging people to conduct business activities over mobile communication networks, thus escalating business expenses.

The sector's institutional arrangements trigger conflicts instead of paving the way to synergies

The sector's institutional arrangements trigger conflicts instead of paving the way to synergies. The national objective of achieving universal and affordable access to the full range of communication services is still far from a reality. The dominance of the mobile sub-sector and abandonment of fixed lines is placing a burden on the drive towards an ICT-inclusive society. Services beyond voice are only affordable to the urban citizen, and even with the high prices, QoS is decreasing.

Years of ill-perception of the business environment deter potential investors and generate negative assessments of the country on global ICT indices such as the WEF's Networked Readiness Index.

The only positive realities are the facts that: the urban-rural voice communications divide is decreasing (though the divide remains high for internet); the number of fixed service subscribers has stopped falling and stabilised (with a penetration rate of 3%) thanks to CAMTEL's introduction of CDMA fixed-wireless technology; and teledensity has improved. In the absence of robust competition, the potential of the mobile sector cannot be reached, and the long-expected significant decrease in service costs will continue to be delayed along with the delays to wealth creation and the contribution to Cameroon's achievement of the UN Millennium Development Goals. The absence of competition also limits innovation in the mobile sector, particularly in the development of value-added services such as mobile money.

Yesterday's top-down policy and regulatory style is not fit to handle today's technologies

Efforts have been made to clarify the roles of the core institutions in charge of ICT activities, but the new roles do not take into account the complex, evolving, and disruptive demands of new technologies.

We offer the following recommendations:

First, yesterday's top-down policy and regulatory style is not fit to handle today's technologies. The institutional arrangements must be re-fashioned so as to cater to the streamlining of decision-making processes. Too many vertical layers are rendering the policy-regulatory process cumbersome. A governmental reorganisation is needed in order to flesh out the ICT component and remove the blurred lines that currently make accountability difficult to measure.

Second, there must be encouragement of a sound and savvy consumer organisation whose role will be critical in ensuring suitable pricing and QoS. The exorbitant pricing levels for communication services in the country are due in great part to the absence of such watchdogs. Consumer associations in other countries have proven their efficacy in ensuring relatively smooth running of ICT regulation.

Third, the fascination with increased optical fibre deployment needs to be tempered by an impartial assessment of the value-add, or lack thereof, resulting from the laying out of additional networks in addition to the several networks already deployed. If, as many sector observers contend, the additional networks will not add value, there must be a reframing of national ICT ambitions and implementation projects.

Fourth, national statistics for the ICT sector need a clean-up. The existing official statistics are too contradictory to be useful. Standardised, credible methodologies should be adopted, and the National Institute of Statistics should have its capacity increased so that it can produce a detailed, accurate annual survey of the country's ICT dimensions.

National statistics for the ICT sector need a clean-up to be more useful than contradictory

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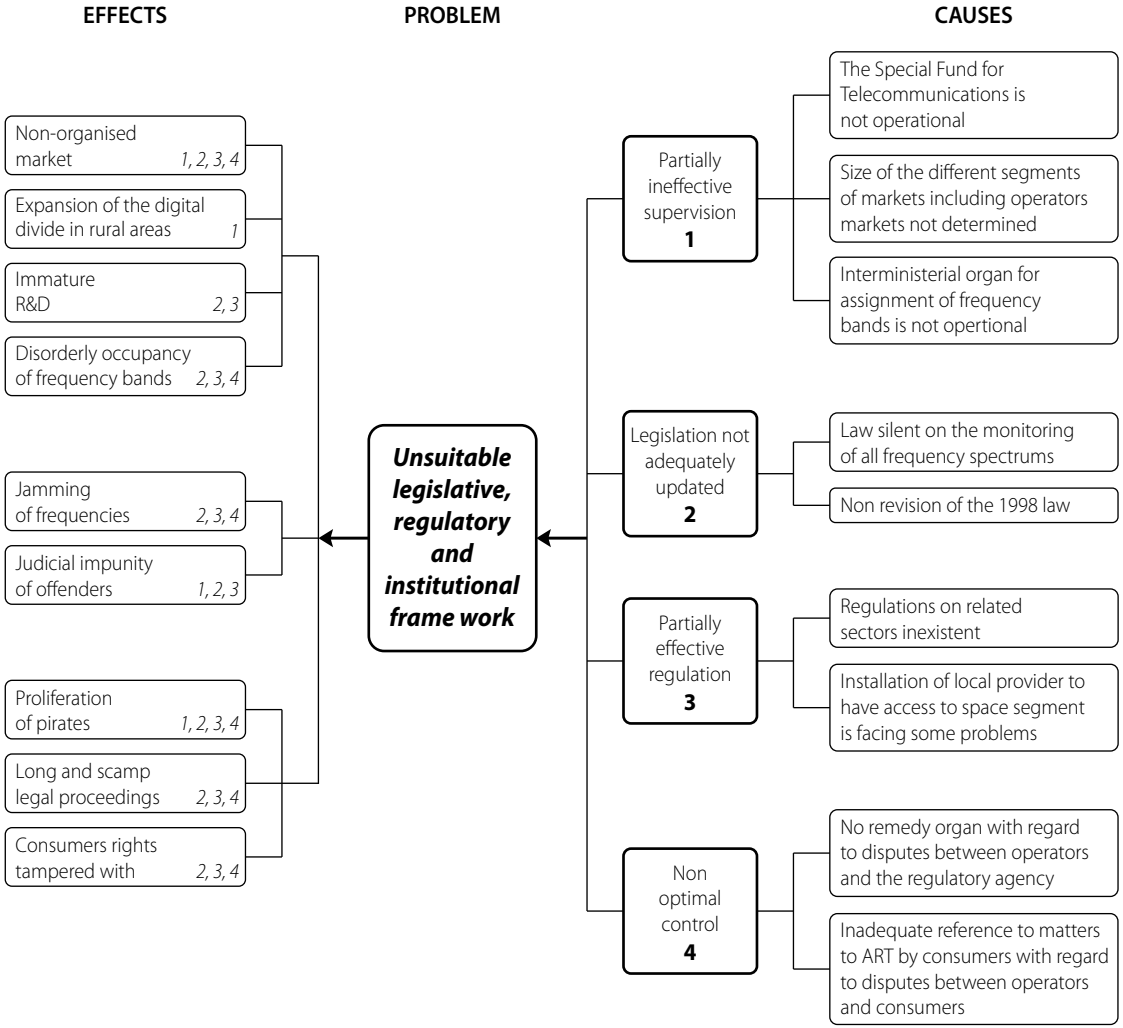
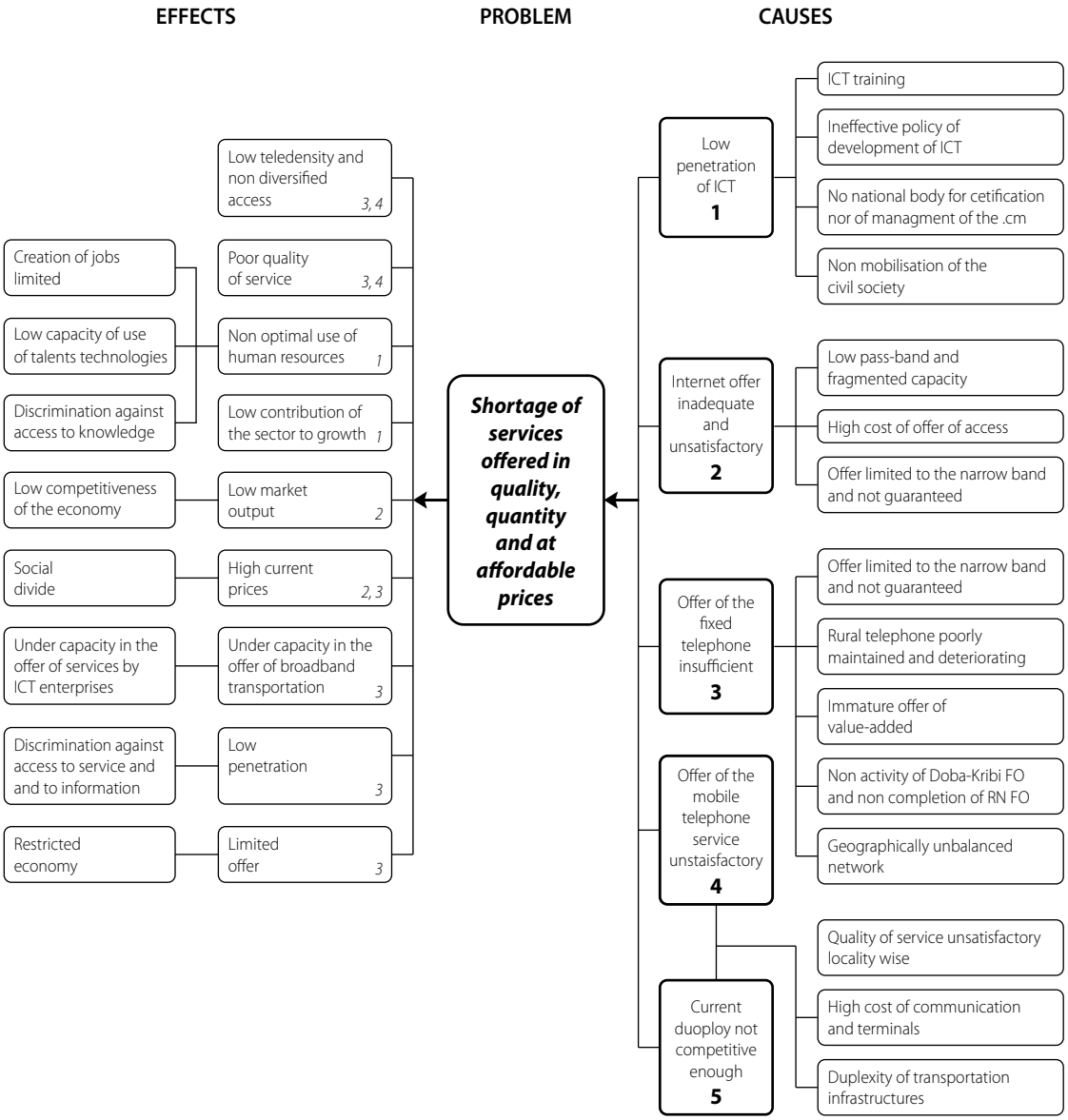
Annexure: MINPOSTEL's ICT Sector "Problem Trees" of 2005

The problems faced by the ICT sector in Cameroon are were underscored in three "problem trees" published by MINPOSTEL in 2005 in its Sector Strategy for Telecommunications and Information and Communication Technologies 2005-2015 (MINPOSTEL, 2005). The three problem trees are reproduced here in their entirety:



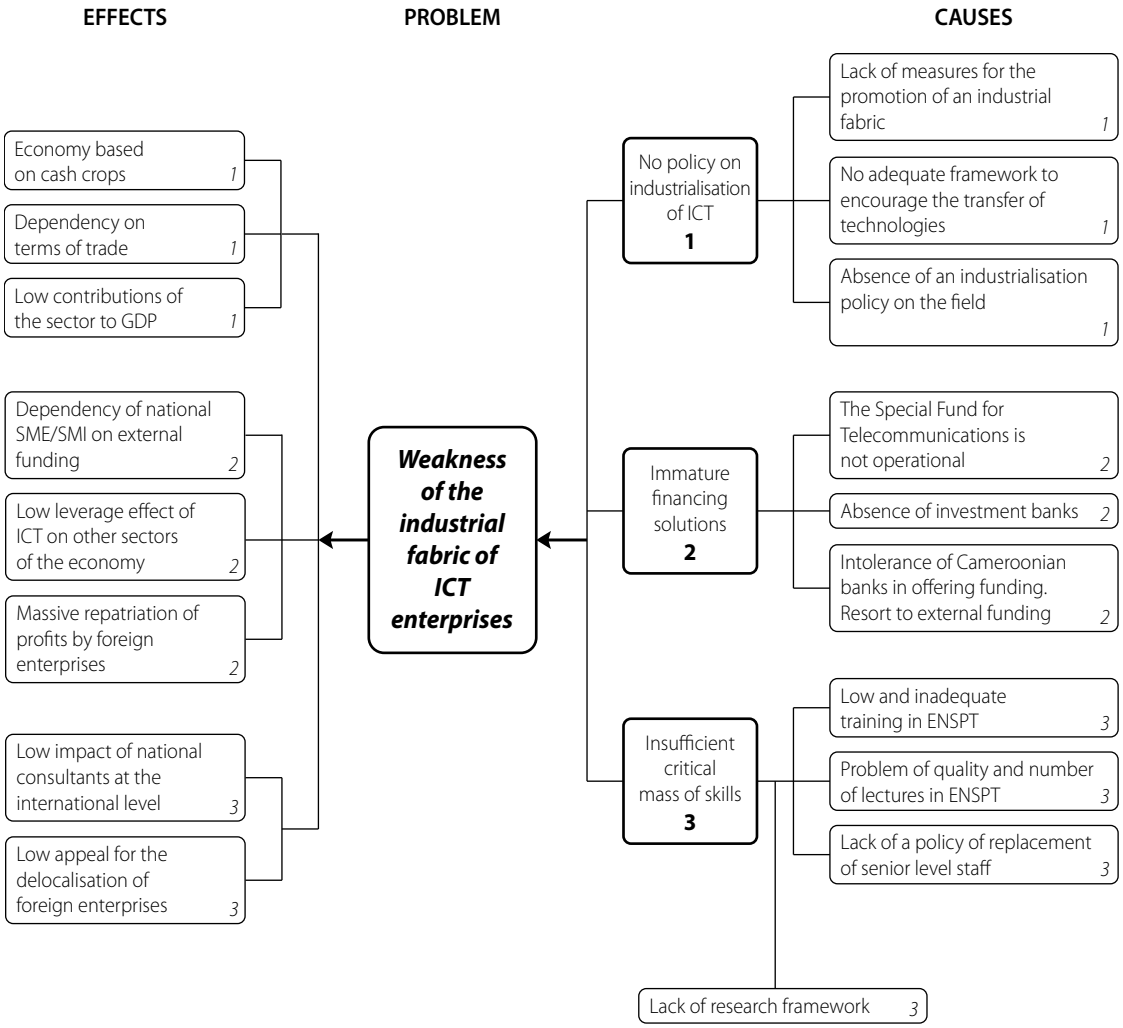
Problem Tree No 1: Unsuitable legislative, regulatory, and institutional framework

Source: MINPOSTEL (2005), p. 47



Problem Tree No 2: Shortage of services offered in quality, quantity and at affordable prices

Source: MINPOSTEL (2005), p. 48



Problem Tree No 3: Weakness of the industrial fabric of ICT enterprises

Source: MINPOSTEL (2005), p. 49

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