ASSESSING THE SOCIO-ECONOMIC IMPACT OF INTERNET SHUTDOWN IN THE ENGLISH SPEAKING REGIONS OF CAMEROON FROM A MULTISTAKEHOLDER AND MULTISECTOR PERSPECTIVE

“Our country needs generalised Internet access … to be better placed to enter the third millennium.” H.E. Paul BIYA, President of the Republic of Cameroon

By Ngang Eric Ndeh Mboumien, AfroLeadership 2018
The findings, interpretations, and conclusions expressed herein are those of the author.
About AfroLeadership

AfroLeadership is Civil Society think tank at the forefront of promoting open data, civic technologies, Internet rights and citizen participation. AfroLeadership currently has operations and offices across Central Africa.

AfroLeadership is a CSO registered in 2010 in Cameroon that encourages the use of Information and Communication Technologies (ICT) to promote transparency, accountability and citizen engagement. AfroLeadership aims to bring together civic-minded software developers and citizens to innovate in public services using technology, primarily by creating open source solutions to address the needs of citizens. A partner of the Association Internationale des Maires Francophones (AIMF), it has been involved in budget transparency projects since its inception with the implementation of an integrated financial management information system in local governments and municipalities in Central Africa. The project was selected in 2015 by the Open Government Partnership (OGP) Fiscal Openness Working Group (FOWG) in Mexico, as one of the best fiscal transparency initiative, working for improvement in service delivery for citizens.

AfroLeadership is an active member of the CodeforAll movement, an international network of organizations believing that digital technologies when used correctly, can both improve governance and open new channels for citizens to more meaningfully engage in the public sphere and have a positive socio-economic impact on their communities. It is involved in promoting open data, data journalism and data skills in Cameroon and Central Africa, through various training sessions organized for journalists and newsrooms. This are all aimed at building a network of data journalists and data wranglers on the use of open source and free tools (Open Spending, The Atlas, Open Street Map, etc.) to datamine public data and build various analysis and visualizations for a full understanding of government dealings with public funds.

AfroLeadership hosts the Cameroon Civic Charter Coalition, a group of campaigners for the publication, dissemination and awareness around rights of citizens to civic participation everywhere, including online and digital participation, as various international instruments acknowledge people’s right and duty to participate in shaping our societies offline and online. In this light AfroLeadership is a member of the Cameroon network of human rights organisations (RECODH), and presides over its Commission for Public Policies, aiming at monitoring the implementation of public policies by the Government. As a member of
Transparency, Accountability and Participation Network (TAP-Network) and very much involve in the Cameroon civil society SDG Working Group, AfroLeadership campaigns for SDG 16 to “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.”.

AfroLeadership is the technical secretariat of the Cameroon Coalition for Freedom of Information & Right to Information. This coalition aims at advocating for freedom of information and right to information in Cameroon, with the enactment of a Freedom of Information Act in Cameroon, as well as the ratification or adoption by the Government of international legal instruments and standards promoting such as principles and guides by the Global Initiative for Fiscal Transparency, Open Contracting Data Standards, Open Fiscal Data Package, the African Declaration of Rights and Freedoms of the Internet, the International Open Data Charter, etc.
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List of acronyms

AICD: Africa Infrastructure Country Diagnostic
AIMF: Association Internationale Des Maires Francophones
ANTIC: National Information and Communication Technology Agency
ADSL: Asymmetric digital subscriber line
ACE: Africa Coast to Europe
COLEPS: Cameroon Online E-Procurement System
CRTV: Cameroon Radio and Television
CAMTEL: Cameroon Telecommunications
CSO: Civil Society Organisation
GDP: Gross Domestic Product
CENADI: National Center for Development of Computer Science
CIPESA: Collaboration on International ICT Policy in East and Southern Africa
EDI: Electronic Data Interchange
ENSPT: National Advanced School of Post and Telecommunication
ENSP: National Advanced School of Engineering/Ecole Nationale Superieure Polytechnique.
FCFA: Communauté financière d'Afrique ("Financial Community of Africa")
FOWG: Fiscal Openness Working group
GESP: Growth and Employment Strategy Paper
INDAFTEL: Industrialisation of African Telecommunications.
ISP: Internet Service Provider
IXP: Internet Exchange Point
INTELCAM: International Telecommunications of Cameroon
MCTs: Multipurpose Community Telecentres ()
MDGs: Millennium Development Goals
MINCOM: Ministry of Communication
MINEFI: Ministry of Finance
MINFOP: Ministry of Vocational Training
MINJUSTICE: Ministry of Justice
MINRESI: Ministry of Scientific Research and Innovation
MINCOMMERCE: Ministry of Commerce
NGO: Non Governmental Organisation
MINPOSTEL: Ministère des Postes et Télécommunications du Cameroun / Ministry of Posts and Telecommunications of Cameroon.
MVNO: Mobile Virtual Network Operator
NICI Plan: National Information and Communication Plan
NRI: Networked Readiness Index
OGP: Open Government partnership
PMO: Prime Minister’s Office
P.R.C: Presidency of the Republic of Cameroon
QoS: quality of services
SIGI-PES: Integrated Computer Management System for State personnel and salaries ()
SMS: Short Message System
SAT: South Africa Transit
SDGs: Sustainable Development Goals
STM: Synchronous Transport Module
TRA: Telecommunications Regulatory Agency
TRB: Telecommunications Regulatory Board
TICAD II: Tokyo International Conference for African Development II
UNIDO: United Nations Industrial Development Organization
UNDP: United Nations Development Program
USD: United States Dollar
VSAT: Very Small Aperture Terminal
WACS: West Africa Cable System
I. Introduction

Cameroon is a country in Central Africa that covers an area of 475 442 km² with a total population as of 31 December 2017 was 24,229,247 made up of 12,114634 (50.1%) females and 12,114613 (49.9%) males (Countrymeters 2018). The country has a population density is 52.2 people per square kilometer (135.3/mi²) with a population made principally of young people with 45% below 15 years of age and 64% aged below 25 years, with 22 years being the average age of the population (NAICT 2007). Statistics shows that about half of the Cameroon’s population lives in towns as a result of high rural exodus with Yaounde and Douala the most populous cities.

From early 1970s to 1981, Cameroon’s economy witnessed a steady growth with real GDP averaging 4% annually. However, from mid 1980s, following the slump in global oil prices, the country experienced serious economic crisis, with resulting economic meltdown followed by a recession and devaluation of the FCFA to normalize the situation (NAICT 2017). Generally, human development indices worsened significantly during the years of the economic crisis, especially those of the education and health sectors. The good economic performances of recent years are still inadequate to correct the situation, though poverty has begun to reduce. That is why the human development index (HDI) in 2002 was about 0.512, placing Cameroon in the 135th position out of a total of 173 countries. The World Bank’s Doing Business Index which ranks economies based on their ease of doing business, ranks Cameroon 164 out of 181 and the existing governance issues are important deterrents to increased investments in the country. Corruption is ingrained at all levels of society, with 79% of Cameroonians admitting to paying bribes. The country ranks below the 25th percentile on all criteria of the Kaufmann-Kraay Governance indicators, significantly lagging its peers, and ranks 141 out of 180 countries in Transparency International’s 2008 Corruption Perception Index. Enforcing a contract takes 43 steps and 800 days. Improving governance is a priority of the revised development policy orientation of the government of Cameroon’s.

According to the National Agency for Information and Communication Technologies (NAICT), the information society in which Information and Communication Technology (ICTs) is included, is one of the most powerful channels that opens new opportunities to leapfrog country’s development. It opens up new possibilities bringing together individuals, communities, private sector and the nation at large for the creation, assessment, utilization and sharing of information and knowledge as a contributor to obtain sustainable social and economic growth.

There is a glaring difference between developed and developing countries with the growing influence of the Internet or digital economy, with the developed countries capable of using the power of information flow to quickly adapt to changing social and economic environments, and subsequently can find opportunities to overcome social and economic challenges such as poverty and lack of adequate infrastructure that are daily challenges faced by developing countries. For countries in sub-Saharan Africa like Cameroon, ICTs is a powerful tool to help increase productivity, competitiveness, stimulate growth, create employment opportunities and as such improve the wellbeing of its citizens.
According to the Networked Readiness Index (NRI) designed to assess the state of network readiness of some selected economies, initiated as part of the Global Information Technology Report, shows that although Cameroon is amongst the countries at the bottom of the rankings as one of the worst-performing countries (Dutta et al., 2016), it is showing some marked improvements compared to its peers in this group (131 place in 2014, 126th in 2015, and 124th in 2016). Despite this positive outlook, there are still significant gaps to be bridged for Cameroon to become a Internet economy which is a major step towards addressing some of these governance and socio-economic challenges. In addition, Cameroon’s country report contained in the World Bank Africa Infrastructure Country Diagnostic (AICD), concluded in 2011, between 2000 and 2005 that improvements in information and communication technologies boosted Cameroon’s growth performance by 1.26 percentage points per capita with an expected annual growth, although this was stalled by deficiency in other sectors such power infrastructure which held growth back by 0.28 percentage points. Thus, there is a direct correlation between improved infrastructure and growth in economies of countries that embark diverse reforms and actions to improve their infrastructure. In addition, there has been a correlation established between transparent and efficient economies of countries and their usage of ICT to conduct these economic activities (The Economist Intelligence Unit, 2010).

Many authors and institutions have highlighted the important role and impact of the application of modern technologies in leapfrogging of growth trajectories of many African economies. This includes better access to improved infrastructure services like information and communication technologies as an important engine for economic growth. Like its counterparts, Cameroon is no exception to the poor state of infrastructure, which is a key bottleneck to growth in African countries. (Atsa et al. 2016, Mwangi and Nelipher, 2011, AEO 2009). Given that most of these sub-Saharan African countries, are dependent on agriculture and natural resources sectors which are key drivers of their economies, boosting and advancing innovations and scaling up the usage of ICT and modern technologies is known to boost the services sectors including banking, finance, governance, education, health, insurance that are inherent part of these sectors. These actors further indicate that integrating ICT into the day-to-day activities of people in the continent is enabling people to successfully engage in business through markets that depend on the Internet and social computing platforms and the digital economy significantly contributes to the country’s economy as show in Figure 1 below.
In line with this, Cameroon’s long term development Vision dubbed Vision 2035 with the elaborated growth and employment strategy (GESP), highlights the important place the Internet or digital economy occupies in driving this vision of Cameroon becoming an emerging economy and a regional economic hub by 2035. In this Vision, the Government of Cameroon has put forward as an essential prerequisite to meeting this vision, the availability and dissemination of learning and knowledge, which makes Telecommunications and ICT possible. This according to the national strategy is underpinned by three key dimensions:

1. Adapting and updating the legal, statutory, and institutional framework;
2. Improving the quantity and quality of services (QoS) provided and making them affordable, and finally;

Based on the above orientations, the Country’s Head of State, during his swearing for next seven years mandate to the Nation on 3 November 2004, said “Our country needs a generalised access to the Internet ” (The Sector Strategy for Telecommunications and ICT 2005 – 2015, Nana and Tankeu 2012).

Thus significant investments are currently being made in creating an enabling environment for this to take effect, ranging from wide infrastructure development, development of the energy sector and policy development to enhance services in the sector, ensuring that citizens access and generate knowledge to transform the country’s economy. According to the Annual Observatory of Cameroon TRB, investments in 2016 stood at 398,63 billion FCFA recoding a 34.04% increase from the 2015 figures and there has been an increase in government investment in the sector since 2010, as a quest to meet network coverage across the national territory improving quality of services (QoS) of electronic communication to users as shown in Figure 2.

Figure 1: Contribution of the Digital Economy to Cameroon’s National Economy from 2000 to 2013

(Source Atsa 2016)
According to the National Agency for ICT (NAICT) 2016 National Policy for the development of the ICTs, a number of very recent projects and initiatives have been announced and launched by the government to stimulate the use of ICTs as a major step towards the Internet economy. Some of these include:

- The offer of 500,000 laptops to students as a step towards modernizing the higher education sector with the first 80,000 pieces delivered in December 2017 and distribution thereafter (Business in Cameroon 2017, P.R.C, 2016);
- The digitalisation of the public procurement system by implementing the Cameroon Online E-Procurement System (COLEPS) in a partnership agreement with South Korea to begin in 2018. COLEPS seeks to eradicate corruption in the public contracts sector, enhance transparency and trust, grant access to public contracts to all Cameroonians;
- The formulation of a sectoral strategy in the field of telecommunications and ICTs by the Ministry of Posts and Telecommunications in 2005.

Alongside these activities, several initiatives for the development and deployment of ICTs are underway within government departments in Cameroon. These include:

- The formulation of a government action plan for an information and knowledge based society by the Ministry of Scientific Research and Innovation;
- The implementation of an ICT development programme by the Ministry of Higher Education;
The creation of multimedia resource centres in secondary and high schools within the Ministry of Secondary Education;

The implementation of the audiovisual sector liberalisation option by the Ministry of Communication;

The computerisation of the national identity card by the Delegation of National Security;

The computerisation of the electoral process by the Ministry of Territorial Administration and Decentralisation.

These national initiatives are supported by other external initiatives, such as:

- the initiative of the Economic Commission for Africa (ECA) on defining the National Information and Communication Plan (NICI Plan);
- the UNDP initiative on an ICT policy in Cameroon within the framework of the Second Tokyo International Conference for African Development (TICAD II).

By their completion, all these projects will place the country as the Hub of telecommunication and e-business in the sub-region. They will lead to the development of another form of ICT-based transactions such as electronic payment and e-commerce. Consistently, a new form of entrepreneurs has emerged like the airtime vendors who make up a population of almost 100,000 people that is about half the size of human capital for public service. New training niches have also emerged in universities with the creation of new specialized majors to provide Cameroon with highly qualified human resources in the field of ICT (Atsa et al. 2016).

Despite this advancement in initiatives to enhance the availability and access to Internet, the country has not marched the rhetoric of the need for generalized Internet access with concrete action. Many countries globally tended to suppress access to the Internet for a segment of its population and Cameroon has been one of them as shown in table 1 below.

**Table 1: Increase number of Internet shutdowns across the African continent**

<table>
<thead>
<tr>
<th>Country</th>
<th>Nature of disruption</th>
<th>Dates</th>
<th>No. of days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>Social media</td>
<td>April 29–May 13, 2015</td>
<td>14</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Regional shutdown</td>
<td>January 17-April 20, 2017</td>
<td>93</td>
</tr>
<tr>
<td>Chad</td>
<td>Total shutdown</td>
<td>April 10-13, 2016</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>February 15-16, 2016</td>
<td>2</td>
</tr>
<tr>
<td>DR Congo</td>
<td>Total shutdown</td>
<td>January 2015</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>December 18-28, 2017</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>August 7-11, 2017</td>
<td>4</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Total shutdown</td>
<td>Various</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>October 5-17, 2016</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>June 1-8, 2017</td>
<td>7</td>
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Since February 2017 in Cameroon, Government has cut off the Internet to the English Speaking segment of the population, which was considered by many citizens as one of the main tools through which citizens’ voices is expressed and was seen by international Internet players, as an outright violation of constitutional rights to freedom of expression and access to information. Today, English speaking Cameroonians are experiencing shrinking space for inclusive and successful citizen participation in decision making processes and with this length of cuts, Cameroon gets into records as the one of the Countries in Sub Saharan Africa with the longest period of Internet shutdown (CIPESA 2016). This action by the government of Cameroon has resulted in significant negative social, economic and political impacts on the citizens with many actors and institution including Internet Sans Frontières, Access Now, The World Wide Web Foundation, and the renowned international digital activist Edward Snowden calling for the reinstatement of Internet as a basic right including through hashtag movements including #BringBackOurInternet, #KEEPITON amongst others (ISF 2018).

In the first part of this assessment, a qualitative approach is used to examine the ICT and telecommunications landscape in Cameroon, around the four pillars contained in Global Innovation Mediated Paradigm Shift (GIMPS) framework (Turban et al., 2007) including Policy, Technology and Infrastructure, People (accessibility, usage and penetration) and Strategies ; The antecedents of the digital technology in Cameroon with focus on Internet access structure within two periods : 1998-2008 and 2009-2018 during which significant milestones have been recorded in Cameroon drive towards becoming emergent and digital by 2035 ; Key factors including the policies and laws that promote a favourable environment for a thriving ICT sector, the actors and institutions and how they organized Internet access, and the strategies to confront challenges as a result of repressive actions ; Research articles and publications from different authors public, private and international institutions, publications on official websites, newspapers and social media and business posts with a bearing on the telecommunications sector in Cameroon. The assessment concludes with introduction of the innovative “Mind Chats’ which assembles quotes and testimonies from those who responded to the questionnaires and some selected from different portals.
Secondly, through the use of 100 questionnaires with defined questions administered in the two regions targeting diverse stakeholders, to assess the socio-economic impacts of stopping access to this technology to some segments of the Cameroon population paradoxically in a context where the rhetoric of a digital economy as a lever of sustained development is the order of the day. The International ICT Policy for East and Southern Africa (CIPESA) eFramework for Estimating the Economic Impact of Internet Disruptions (internet, Social Media and App Shutdown) in Sub-Saharan Africa is used to calculate in numerical terms the impacts on the Cameroon economy as a result of internet shutdown in the two regions to complement the findings from the analysis from respondents.

The study concludes with a recommendations to improve the internet landscape in line with existing Policy, Technology and Infrastructure, People (accessibility, usage and penetration) and Strategies in Cameroon.


The telecommunication sector in Cameroon has witnessed some significant milestone periods. Within the period 1998-2008, a strategy to make use of the sector fundamentals which allows for cost recovery through commercial tariffs and a relatively short path to breaking even and reducing the high capital expenditures incurred by the government. The strategy led to the launch of the privatization of CAMTEL in 1997, a process which was halted in 2002. Thus so far, CAMTEL has maintained a monopoly over the gateway with Internet service providers continue to rely on costly VSAT infrastructure with the full benefit of the submarine cable connection not attained.

During this period, the full benefit of the submarine cable connection has been mitigated by CAMTEL’s monopoly over the gateway: Although prices are cheaper where there is access to submarine cable, they are even lower when there is a competitive international gateway. As a result, Internet service providers continue to rely on costly VSAT infrastructure. The launch of competitive wireless offerings by mobile operators forced down fixed broadband prices from $104 in 2009 to $61 in 2010 with resulting leapfrogging of the number of Internet users in the country as shown in Figure 3 below.
The period 2008-2017 witnessed the deployment of more technical and human resources for a better coverage, network speed for user for better services to the demanding clients. There has been some steady progress here, first with the 2G saga (Voice and Short Message System “SMS”), then the migration to 3G (September 2014) which ushered in the rise of mobile high speed networks and innovative services with the very first value-added multimedia applications. More recently, the arrival of the fourth generation (4G) in 2015 which has brought in new impetus in the mobile telephony landscape and offering the basis of Cameroon’s quest for technological development and the expansion of the digital economy (Bahri-Domon 2017). With these new dynamisms, according to the 2016 Ericsson report on mobility, Cameroon recorded an Internet penetration of rate of 25.6% by the close of December 2015 as opposed to the 2% stagnant rate recorded during the ADSL era that moved to 7% with the introduction of mobile telephony. CAMTEL during this period and beyond has embarked process to engage with diverse partners to enhance Internet access and at an
affordable rate. For example the data service provider Yoomee signed a commercial agreement on 22 February 2017 with national telecom operator CAMTEL with Yoomee becoming an official Mobile Virtual Network Operator (MVNO) in Cameroon, ensuring optimal utilization of already deployed network and technical infrastructure of CAMTEL, to offer data services of quality at affordable prices to the entire Cameroonian market as per the agreement with effective deployment of optical fibers network throughout the country (Figure 7 below).

Figure 4: Optical fibre network of Cameroon

In 2008, the idea of implementing an Internet Exchange Point (IXP) was first introduced and by 2013, a multistakeholder board of directors made up of representatives of operators in the
sector and consumers rights civil society organizations including Internet society, tasked by Ministry of Post and Telecommunications with the design and implementation of necessary infrastructure. Although this idea has since been developed and supported by the National agency in charge of ICT promotion in Cameroon called Agence Nationale des Technologies de l’Information et de la Communication (ANTIC) and the World Bank, progress on the project has been slow.

The National Operator CAMTEL is continuously in search of opportunities to offer broadband connections to consumers. To achieve this, it is keen to take advantage of its connection to the SAT3 undersea fiber-optic cables to increase Internet connectivity and actively working at deploying the optical fibre technology throughout the country, which is a critical infrastructure in the development of telecommunication services. Recently, West Africa Cable System(WACS) deployed by MTN Cameroon and Africa Coast to Europe (ACE), a project implemented by the local subsidiary of the Orange group, Cameroon are amongst the many projects that aim to enable Cameroon boost of an urban and inter-urban optic fibre network estimated at roughly 6,000 kilometres, forecasted by the government to be increased to 10,000 kilometres by 2020 thus making Cameroon a hub for telecommunication infrastructure in Central Africa (Business in Cameroon 2017, Atsa et al. 2016, CC_PRC, 2016). This is in line with the continuous quest by the Government, calling on all stakeholders nationwide to embrace digital economy as key to the development of the country in all spheres, through implementation of major projects (MINPOSTEL 2017, Atsa et al., 2016). In line with this a total of 46 billion FCFA of state budget was allocated to the MINPOSTEL with 1.5 billion FCFA reserved for the digitalization of its services for the 2018 financial year (Cameroon-Info.Net 2018). Although this represent a very meager allocation to the ICT sector compared to a state budget of 4513 billion CFA and less compared to other peers in Africa including Senegal, Cote d’Ivoire and Kenya, this however is an indication of the government’s interest to boost the sector (Table 2).

Table 2 : Comparative analysis of investments in the ICT sector in Cameroon with that of three other African countries

<table>
<thead>
<tr>
<th></th>
<th>Cameroon</th>
<th>Senegal</th>
<th>Cote d’Ivoire</th>
<th>Kenya</th>
</tr>
</thead>
<tbody>
<tr>
<td>% GDP</td>
<td>3.4%</td>
<td>6%</td>
<td>5.7%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Investment(ICT) (Billion CFA)</td>
<td>700</td>
<td>1200</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Income (State) (Billion CFA)</td>
<td>195</td>
<td>250</td>
<td>300</td>
<td>1500</td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>6000</td>
<td>5000</td>
<td>6000</td>
<td>20000</td>
</tr>
<tr>
<td>Indirect Jobs</td>
<td>500,000</td>
<td>200,000</td>
<td>180,000</td>
<td>800,000</td>
</tr>
</tbody>
</table>

Source: AICD

Since 2015, the government of Cameroon has challenged stakeholders nationwide to move toward a network economy also known as the digital economy; aiming to foster the development of the country. These efforts to offer broadband connections in Cameroon have
been stalled by the fact that the National operator CAMTEL has remained the only fixed-line broadband operator and, despite numerous attempts at privatization (Budde.com 2013). Until 2012, this state institution was given exclusive rights to access the SAT-3 cable and this exclusivity over the gateway has enabled the company to charge high prices to ISPs with impunity. Operators are currently charged US$2,100 to access the international gateway with an average cost of a STM1 ½ circuit is $64,000 and the monthly lease price for a STM1 ½ circuit departing from Cameroon can cost around $1,600,000. In 2012, for example, the monthly lease price for a STM1 ½ circuit from Douala to Dakar, Senegal (3,200 km) was $51/month/km, i.e. $163,200/month. By comparison, the monthly lease for a STM1 ½ circuit from London to Moscow, which has a comparable distance of around 2,500 km, in 2012 cost $2.30/month/km, i.e. $5,761/month. ISPs, in turn, have passed the bulk of these costs on to Cameroonian consumers.

Several authors have examined the preparedness of Cameroon to embrace and take advantage of this change. Remarkably, studies by Atsa et al. (2016) looks at what countries should do or be doing to evolve towards an Internet economy. In their study, they highlight seven things need to be considered by countries like Cameroon if they have to meet this quest including Research and Innovation, Entrepreneurship and startups, Digital Business Transformation (E-commerce, ICT Sector, Workforce), ICT Sector; Workforce, Digital Infrastructures (Governance and prospective) and Governance as highlighted in Figure 5 below.
Atsa et al., (2016) concluded that Cameroon, which is in constant quest for prosperity and economic growth, hinged on a digital transition of enterprises and institutions urgently needs to develop a clear roadmap for this transition, through a multi sectoral and multi actor approach after having re-examined the 7 pillars of a digital economy. Focus in this road map shall on appropriation of digital technology in business, development of a strong ICT sector and the establishment of a favourable environment creation and attraction of digital companies. With such a map that responds to new trends and forces including mobile, social media, cloud computing and massive data, open data (public and private), increase use of smart phones and digital tablets, exploitation of optical fiber and 4G networks, birth and growth of digital companies and civic groups that challenge the regulatory and operational environments, Cameroon will be on course to become a global leader in innovation in the central Africa sub-region. Although the government has been embarked on improving the Posts, Telecommunication and Information and Communication Technologies infrastructure through the launching of several projects to enhance access, this is still short of expectations.
A number of studies including enterprise surveys have revealed the importance of appropriate infrastructures’ contribution, to the annual per-capita growth and how poor infrastructure including ICT infrastructure is a handicap for business in Cameroon. It is notorious that firms face about 42% of productivity gap after a comparative analysis done for a number of Central African countries as shown in figure 6a and 6b respectively.

**Figure 6: Infrastructure contribution to annual per capita growth in Central African Countries from 2001-2005**

![Figure 6](source: Caledron 2009)

**Figure 7: Infrastructure deficits constrains firms productivity**

![Figure 7](source: Escribano et al., 2010)
III. Analysis of the legal environment on ICTs and access to the internet in Cameroon

The telecommunication and information and communication technologies policy environment has been evolving influenced by the growing importance of these forces which are central to leapfrogging every modern economy. These changes have ushered in a plethora of laws and regulations to create an enabling environment for this new economy and there have been significant milestone periods in this legislative, notably the periods 1960-1988, 1988-1998, 1999 to present (Atsa et al., 2016, The Sector Strategy for Telecommunications and ICT 2005 - 2015).

III.1. The period 1960-1988

During the period 1960 to 1970, MINPOSTEL was in charge of orientations, regulation, control, operation, follow-up and monitoring of telegraphy, telex, Morse and telephony. This period was also marked by the creation of the National Advanced School of Post and Telecommunication (ENSPT) in 1969 and the International Telecommunications of Cameroon (INTELCAM) in 1972, separating domestic and international telecommunications operations. Significant resource were deployed to enhance the operations alongside these institutional developments, with the Head of State passed into law No. 87/021 of December 17 1987 granting financial autonomy to MINPOSTEL to meet the ever-increasing need for financing to enhance efficiency of management. Unfortunately, this did not culminate into improved telecoms services.

III.2. The period 1989-1998

During this period, first efforts were made to digitize the sector with the acquisition of the Yaounde and Douala Digital Exchange Stations followed by the South West Station. Due to the inertia of the telecommunications sector stagnation in the number of telephone lines of the National network, more legislation was adopted and new institutional arrangements were made in 1998 bringing a new dynamism in the sector including:

- A new legal and regulatory Telecommunication framework laying the groundwork for competition on internal markets in the sector (Law No. 098/14 of July 14, 1998);
- Decree No. 98/198 of 8 September 1998 to set up the Cameroon Telecommunications Corporation (CAMTEL);
- Separation of postal activities from telecommunication and Information and Communication technology;
- Setting up of an independent and autonomous Telecommunication Regulatory Agency (ART);
- CAMTEL was born out of a merger of the Department of Telecommunications of MINPOSTEL with INTELCAM giving in 1998, giving it exclusive rights on the operation and provision of fixed telephone services.
However, all this legislative and institutional arrangements had limits including unclear or incoherent implementation strategies to develop the sector, inadequate infrastructure, insufficient resources, poor involvement of national and international private sector actors (The Sector Strategy for Telecommunications and ICT 2005 – 2015, NAICT 2007).

III.3. The period 1998 to date

During this period, Cameroon’s Head of State made the promotion of the telecommunications and ICT sector a priority. Many other laws were enacted geared towards preparing a friendly, legal and regulatory environment for modern and digital economy including:

- Law on the prescription of minimum services in the communication sector in 2001 (NA_MSC, 2001);
- Decree No. 2001/830/PM of 19 September 2001 to lay down modalities for the operation of telecommunications networks;
- Decree No. 2001/831/PM of 19 September 2001 to lay down modalities for the provision of telecommunications services;
- Law No. 2001/10 of 23 July 2001 to institute minimum service in the telecommunications sector;

In 2004, the Head of State declared that “Our country needs generalized access to the Internet”, reiterating a similar statement he made in 1997 while addressing Cameroon’s youth and this ushered in a new set of law to boost the sector including:

- 2010 Law relating to electronic communication (NA_EC, 2010). This law seeks to promote universal service in the country. Under the law, Cameroon’s telecommunications operators are required to provide “communications services of good quality, at affordable rates, and in an uninterrupted manner.”;
- 2010 Law relating to electronic commerce (NA_eC,2010);
- 2010 Law relating to the cyber security and the cyber criminality in Cameroon (NA_CSCC, 2010);
- 2011 Law on consumer protection (NA_CP, 2011). This Law was enacted to protect consumers by providing for individual or collective legal action, authorizing the Cameroon’s telecommunications regulator, the Telecommunications Regulatory Board (TRB) to be responsible for mediation and settlement of conflicts in the case of non-compliance by operators (AI4A 2014).

On the international scene, Cameroon is playing a frontline role and is a signatory to many binding international instruments that bear on the subject. Notably, the New Partnership for Africa’s Development (NEPAD) and subscribed to the realization of the MDGs (2010-2015) and the SDGs (2015-2030) is keen to use the potentials and opportunities offered by ICTs to
address poverty and promote inclusive development. Many cutting edge and innovative initiatives have been engaged by the government including:

- Drawing up of a government’s program of action for the information and knowledge society by the Ministry of Scientific Research and Innovation (MINRESI);
- Implementation of an ICT strategy by the Ministry of Higher Education;
- Use of ICT to manage staff and personnel by Ministry of Public Service and Administrative Reforms by setting an Integrated Computer Management System for State personnel and salaries (SIGI-PES);
- Creation of the National Information and Communication Technology Agency (ANTIC);
- Interministerial steering committee on inclusion of ICT component in all projects.

This have all been in line with external initiatives, notably those by Economic Commission for Africa on definition of National Information and Communication Plan (NICI Plan), the UNDP initiative on ICT policy in Cameroon within the framework of the Tokyo International Conference for African Development II (TICAD II).

From 1998, Cameroon made significant strides in creating an enabling environment with the sector liberalized by law “Law No. 98/014 (1998 Telecommunication Act)” with the establishment Telecommunications Regulatory Agency (TRA) and the publication of the National Policy for the Development of ICTs in 2007. During 1998 to 2017 period, although the management of Post and Telecommunications was under the responsibility of the Ministry of Post and Telecommunications (MINPOSTEL), the opening and regulation of the telecommunications market and the granting of licenses was entrusted to TRA with the sector characterized by power struggles amongst the many governmental players claiming authorship or supervision of the national ICT policy, negatively impacting the growth and development of the sector (AI4A 2014, InfoDev 2007). To address these power struggles especially between TRA and the MINPOSTEL, a prime ministerial decree setting the “conditions to establish or operate networks and provide electronic communication services under the licence regime”. The decree states that operating licences are issued by the Minister in charge of Telecommunications, based on proposals from the regulatory agency, a role which was played by the TRA since 2010.

Some more legislation has been enacted in an attempt to put order in the sector including Law No. 2010/013, passed in December 2010, governing electronic communications in Cameroon and seeks to promote universal service in the country. Under the law, Cameroon’s telecommunications operators are required to provide “communications services of good quality, at affordable rates, and in an uninterrupted manner.” In 2012, framework Law n°2011/012 was enacted to protect consumers by providing for individual or collective legal action, authorizing the Cameroon’s telecommunications regulator, the Telecommunications Regulatory Board (TRB) to be responsible for mediation and settlement of conflicts in the case of non-compliance by operators (AI4A 2014).

However, some major lapses have been identified in Law No. 98/14 of July 1988 the main legal framework regulating telecommunications in Cameroon which makes no reference to
mobile telephone services and access to the Internet. As equally pointed out in the NAICT 2007 report, the plethora of laws that has failed to take into consideration important issues including intellectual property rights, e-trade or Electronic Data Interchange (EDI), infrastructure sharing policy amongst others in the sector contributes to the confusion recorded in the sector and an impediment for its contribution as a propeller of Cameroon’s economy.

However, with the advances in the policy and legal environment, the NAICT states that “…the context is thus favourable for strong action towards defining a bold ICT development and deployment policy and for formulating effective and coherent strategies to speed up Cameroon’s access to the global information and knowledge based economy”.

IV. Stakeholder analysis of the actors and institutions in the internet access landscape in Cameroon

Atsa et al. (2016) posit that for a success digital economy which depends on new technologies including the Internet, disruptions must be avoided and for this to happen, stakeholders must come from all the economic strata of the country (public, private sector and civil society). This gives a more open space for various challenges to be identified and addressed in a participative manner with the view point of all stakeholders.

Table 3: Summary of the main public and private sector stakeholders in Cameroon’s telecommunication and ICT industry

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidency of the Republic</td>
<td>Formulation of the national policy on the development of ICT</td>
</tr>
<tr>
<td>National Agency for Information and Communication Technologies (NAICT)</td>
<td>Directly responsible for laying down guidelines and regulations for the ICT sector in Cameroon – is placed under the technical supervision of the Presidency of the Republic.</td>
</tr>
<tr>
<td>Ministry of Finance</td>
<td>The Ministry of Finance represents the State in all semi-public corporations. Its duties further include; resource mobilization and budget allocation amongst others.</td>
</tr>
<tr>
<td>Ministry of Posts and Telecommunications (MINPOSTEL)</td>
<td>• Development and Implementation of Government policy of Telecommunication and ICT • ICT Infrastructure • Coordination • Policies • Supervisory authority of CAMTEL and the TRB.</td>
</tr>
<tr>
<td>National Center for Development of Computer Science (CENADI)</td>
<td>• Advisory • Tools support</td>
</tr>
</tbody>
</table>
| MINEFI | - Preparation of tender files with a view to issuing invitations to tender
- Issuing of invitations to tender
- Signing of concession agreement and specifications |
| MINJUSTICE | Referring matter to MINPOSTEL or to the courts by the complainant |
| MINCOM | The Ministry of Communication supervises the activities of CRTV and Cameroon Tribune, and issues communication licences to private audiovisual service based operators. |
| PRC | - Contribution to the development of the policy of industrialisation
- Promotion of an industrial fabric
- Promotion of advanced technologies
- Job promotion |
| CAMTEL | Unlimited services/access
- Products and services
- Development of Infrastructures
- Fixing and application of charges based on actual costs

| **Telecommunication Regulatory Board (ART)** | • Technology adoption, development and deployment
• Legislation
• Regulation
• Monitoring of activities for telecommunication operators and users,
• Assets allocation |
| **National Agency for Information and Communication Technology (ANTIC)** | • Promote and monitor government actions
• Regulating electronic security activities.
• Certification (Application and specification of ICT tools) |

**MINEFI**
- CAMTEL
- MTN
- ORANGE
- ISP
- Services providers
| - Banks  
- Standardisation Structures  
- Radio/television Operators | - Quality of service  
- Conception, designing and follow up of programmes implementation  
- Updating school programmes  
- Organisation of examinations and competitive entry examinations  
- Organisation of training courses and seminars |
|---|---|
| Training schools (ENSP, ENSPT, IUT Universities, IAI, Institut SIANTOU, Institut NDI SAMBA, ICT University etc.) | - Sensitisation of the general public  
- Organisation of seminars  
- Training of the general public  
- Specialised training  
- Building of an attractive framework play an important role in the promotion, integration and deployment of ICTs in national programmes |
| - NGO  
- Development partners (Bilateral and multilateral partners) |


V. Analysis of the level of connectivity and percent by different strata of the population

Despite the significant advantages Cameroon has in the Central Africa sub-region including its strategic position, broad variety of cultural assets, its relative stability, excellent human resources, its infrastructure potential and a major access route by sea to many landlocked countries, records of ICT penetration and usage are low comparatively (NAICT 2006). According to a 2006 National Survey (SCAN ICT) conducted by MINPOSTEL supported by other partners, 30% of the country had access to telephony services, with a fixed teledensity of 0.7% and mobile teledensity of 15%. The report further indicated that less that 7% of institutions and enterprises had a computer, with less than 27% government services having Internet connectivity and generally less that 2% of Cameroonians using the Internet.

Yet, Cameroon possesses a huge potential which could make it a major ICT development pole in the Central African region. In fact, the educational system, particularly higher education, despite its many problems, is fairly developed and could serve as a formidable ICTs launching point in Central Africa. On the other hand, the country is endowed with a fibre optic backbone along the Chad-Cameroon pipeline and which is still underutilised. Likewise, a landing point of the South African Telecommunication 3 (SAT 3) sub-marine cable is open in Douala with a capacity of 2.5 Gigabites. Two private mobile phone companies and one State-owned fixed phone company (already engaged in a privatisation process) equally invested about FCFA 300 billion during the 1999 – 2004 period.

From the period 1998 to 2008, rapid growth in Cameroon’s mobile telephony, placed the country as one of the leading markets in Central Africa with around 4.5 million subscribers.
Within this period, the fixed-line penetration grew rapidly with the expansion of limited-mobility portable phones offered by CAMTEL the major operator which offered a fixed-line solution with mobility of up to 40 kilometers and both mobile and fixed handsets launched in 2006. Two years later, users of this technology increased from 28,000 to 150,000, surpassing the number of traditional fixed lines in the country (125,000). The number of landline subscriptions per 100 people grew from 0.6 in 2000 to 2.2 in 2009.

**Figure 8: Expansion of mobile and landline market in Cameroon 2000-2008**

![Graph showing expansion of mobile and landline subscribers from 2000 to 2008](image)

Source: Balancing Act 2009

Like in preceding years, there has been a strong growth in the volume of voice traffic from mobile network sources in 2016 with the coming into the market sector of more competitors. The introduction of mobile broadband by mobile operators provoked the restructuring of commercial policies by operators, resulting to a wide range of unlimited and bundled services ensuring economy of scale and allowing for the evolution in the traffic while ensuring a reduction in prices for the end users. The TRB states that as result of these attractive value added commercial services to users, there has been explosion in the voice traffic and multitude of competitive services offered by the old and new operators resulting in consumption reaching 15.88 billion minutes with a net gain in 2016 compared to 2.67 billion minutes in 2016 as a result of fall in prices (table 5 below)
Despite these seeming advances, some actors and institutions have identified major constraints including high costs for services and equipment, spatial disparities, insufficient offer amongst others and constitute the major impediments to the growth and usage of ICTs particularly the Internet by individuals, families, enterprises and the government services all together. For example, the recent report by NAICT indicates the following:

- Internet fees are exorbitant compared to the levels of income of Cameroonians required for the provision of needed services at acceptable speed constituting a major constraint to Internet demand by households;
- The pace of computer penetration at institutional level is extremely low with 66.2% of institutions with no computer and likewise the number of workers able to access a computer at the workplace comparatively very low;
- Approximately 9.2% of institutions connected to the Internet with about 10.8% having a website.

With the increase realization that with the existing potentials, Cameroon was a in a good position to become a major ICT hub in the Central African region. Significant resources have thus been deployed for major investments projects including the reforming of the legal environment and development of major institutions and projects. In addition to making use of the many endowments including the fiber optic backbone along the Cameroon-Chad pipeline, the South African Telecommunication 3 (SAT 3) cub-marine cable open in Douala with a capacity of 2.5Git, with significant investment being done by the state-owned company and the two mobile phone operators.

There has been a significant evolution in the access to Internet by Cameroonian with a growing Internet penetration rate averaging 14% per year between 2007 and 2011 and 19% between 2012 and 2017 below the 32% of continent wide penetration (Alliance for Affordable
Internet -A4AI 2014, Doing Business in Cameroon 2017, Global Internet Open Information 2017). Despite this seeming impressive progress with modern infrastructure development and the growing number of licensed operators, different authors and institutions indicated that Cameroon had one of the lowest Internet usage rates on the African continent and was amongst one of the least connected countries in the world, with just 6 percent of its population online in the period leading up to 2013 (ITU 2013, Internet Live Stats 2013, Nana and Tankeu 2012). See figure 9.

Figure 9: Internet usage Fixed line, mobile & Fixed Broadband subscription, 2000-2013

![Graph showing Internet usage from 2000 to 2013](image)

Source: ITU 2013

Between 2014 and 2016, there has been a striking progress of the Cameroon’s Internet access sector ranked amongst the top 100 countries in the world with improved Internet access, and in the top 30% of three countries in Africa who recorded significant improvements (see Table 5 below on Cameroons progress).
Table 5: Statistics on Internet users and percent penetration vis-à-vis the population 2014-2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Position (out of 195 countries)</th>
<th>Internet users</th>
<th>Penetration (% or Pop)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>93</td>
<td>2505032</td>
<td>11%</td>
<td>22773014</td>
</tr>
<tr>
<td>2015</td>
<td>82</td>
<td>3701585</td>
<td>15.9%</td>
<td>23344179</td>
</tr>
<tr>
<td>2016</td>
<td>78</td>
<td>4311178</td>
<td>18%</td>
<td>23924407</td>
</tr>
</tbody>
</table>

Source: Eric Ngang 2018, adapted from *Internet Live Stats 2014, 2015, 2016*

However, other authors and institutions present contradictory figures on access to the Internet for example the statistics presented by the Cameroon TRB in its 2016 Annual Observatory of the electronic communications market indicates that a total of 8.08 million Cameroonians were subscribed to the Internet in 2015. The statistics indicate that there was a fall of -4.24% in the year (358 741 people lost access to the Internet from 2015-2016). As a result of this decline, there was a corresponding reduction in Internet penetration rate from -3.51points to -35.71points. There was a notable drop in mobile Internet subscribers between 2015 and 2016 by 7.4% as a result of suspension of unidentified lines during the government recommended exercise to identify all subscribers (See figure 10 below).

**Figure 10: Internet penetration rate 2014-2016**

![Internet penetration rate 2014-2016](source)

Source: TRB 2016

These estimated from Internet Live Stats indicates that 4.3 million Cameroonians which was approximately 20% of the Cameroonians had access to the Internet in 2016. During this same period, a report on mobility published by the management of the Cameroonian subsidiary of this Swedish telecoms firm Ericsson in December 2016, indicated that access rate in Cameroon reached 25.6% as at end December 2015. These figures reveal that Internet access...
in Cameroon is higher compared to its counterparts in the sub-Saharan African region, which was at only 20% over the same period.

This growth corresponds to the roll out of the 3G and 4G services which MTN and Orange launched during this period and the rapid growth in the use of smartphones by mobile subscribers with MTN registering an increase of 34.1% with 2.6 million devices registered by the end of June 2016. Generally, in Cameroon like its counterparts in sub-Saharan Africa, mobile telephony in Cameroon has grown much faster than Internet usage. ITU cites Cameroon’s mobile penetration rate as 61 percent with 17% the mobile users estimated to own mobile phones (M&C Saatchi Mobile 2013). This correlates with the TRB 2016 Annual Observatory which indicates that 40% of the 18 million mobile phone operators were connected to the Internet via phone as more subscribers had smartphones. The report further states that subscription to the Internet from the operators of fixed networks witnessed a sharp rise of 167.08% in 2016.

Unfortunately, although the divide in urban-rural voice communication is decreasing, the urban-rural Internet communication divide is increasing. This relatively high mobile penetration rate may present Cameroon with an opportunity to increase Internet and broadband use rapidly. A survey conducted by Research ICT Africa in 2011 and 2012 showed that in Cameroon, only 30 percent of the Internet users surveyed used their mobile phones to access the Internet, with the majority still using an Internet café to access the Web. Many Cameroonians do not use their mobile phones to access the Internet as a result of limited consumer choice in the mobile market, caused by an apparent lack of competition in Cameroon (Research ICT Africa 2012).

The provision of licenses with terms and conditions that promote investment in 3G and 4G infrastructure and services by diverse operators is an affirmation by the Government of Cameroon of its commitment to increasing broadband. With this, it is anticipated that it will enhance the usage of mobile telephony to help enhance affordable Internet access in Cameroon especially with the increase use of smart phones.

However, despite this progress observed, the 2017 Business in Cameroon report posits that the web still remains inaccessible for most Cameroonians. This assertion is also supported by the NAICT 2016 report that concludes that there are extremely wide disparities in access to ICTs and this was directly related to geographical issues, levels of income and education of actors under consideration.

Despite all these projects and a good percentage of Mobile telephone subscription, Cameroon is still experiencing a very low percentage of individuals using Internet although there has been a remarkable growth in voice communication or telephony. Table 7 shows that this percentage is around a third of the one of Africa (World Bank).
Table 6: Comparison of Telecommunication Indicators in Cameroon, Africa, and World

<table>
<thead>
<tr>
<th></th>
<th>Cameroon</th>
<th>Africa</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed-telephone subscriptions</td>
<td>3.59%</td>
<td>1.30%</td>
<td>16.20%</td>
</tr>
<tr>
<td>Mobile telephone subscriptions</td>
<td>70.39%</td>
<td>65.90%</td>
<td>93.10%</td>
</tr>
<tr>
<td>Fixed (wired)-broadband subscriptions</td>
<td>0.08%</td>
<td>0.30%</td>
<td>9.40%</td>
</tr>
<tr>
<td>Percentage of Individuals using Internet</td>
<td>6.40%</td>
<td>16.80%</td>
<td>37.90%</td>
</tr>
</tbody>
</table>

Going by Cameroon’s population dynamics, its 24,229,247 made up of 12,114,634 (50.1%) females and 12,114,613 (49.9%) males (Countrymeters 2018). Whereas the average density is 35 inhabitants per square kilometer, there are important differences among regions. In the South and East, the average density is 5 inhabitants per square kilometer, whereas in the West and North population density exceeds 200 inhabitants per square kilometer. There are many digital disparities between urban areas (mainly Douala and Yaounde) and rural areas (NAICT). It is estimated that about 50 percent of Cameroon’s population live in urban areas, which account for the largest share of the country’s economy and this gives reasons why the ICT backbones are concentrated in urban areas, in particular around Douala and Yaoundé. Since 1998, with the introduction of competition in mobile telephony sector, aimed at providing network coverage throughout the country, mobile operators who are profit-driven and very interested to get a return on their investments have found this urban and populous regions more attractive for business. As a result, coverage of the rural areas has been the responsibility of the government of Cameroon, who in an attempt to address this gap launched the Multipurpose Community Telecentres (MCTs) project launched in 2013. This project was designed to bridge the digital divide between the rural and sub-urban areas, often neglected by private operators and the urban areas with infrastructure installed offering affordable telecommunication and ICT services (telephone, fax, photocopying, television, Internet) and postal financial services (money transfer and messaging). Today 177 MCTs, 52 Digital Access Points and 2 Digital Agricultural Centres are operational across the 10 regions, with 10 under construction out of the 20000MCTs planned for construction by the 2015 during the launch of the project (Cameroon Tribune 2013, Ebongue 2015). However, this MCTs are not equitably distributed for example the estimated population in 2013 of the North West region was 1900547 and that of the south region was 761099 but paradoxically, the South region with a lesser population had 29 MCTs compared to the North west with 10 MCTs that had double the population of the South region as shown in Table 8 below and thus can be deduced that this effort has not in a way address the digital gap.
Table 7: Regional distribution of MCTs, Telecentres and Digital Access points in Cameroon

<table>
<thead>
<tr>
<th>Region</th>
<th>Population (2013 est.)</th>
<th>Telecentres</th>
<th>Digital Access Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adamawa</td>
<td>1481433</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Centre</td>
<td>3919828</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>East</td>
<td>824204</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Far North</td>
<td>3803138</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Littoral</td>
<td>3174437</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>North</td>
<td>2311179</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>North West</td>
<td>1900547</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>South</td>
<td>761099</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>South West</td>
<td>1481433</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>West</td>
<td>1865394</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21522692</strong></td>
<td><strong>177</strong></td>
<td><strong>52</strong></td>
</tr>
</tbody>
</table>

Source: Eric Ngang 2018, adapted from NAICT 2016 and MINPOSTEL 2017

A lot of enthusiasm was built around these projects from initiation. Unfortunately the deployment was stalled a few years later with one of the main reasons cited in the 2005-2015 Sector Strategy for telecommunication and ICT produced by the NAICTs being the challenge faced by Cameroon’s public administrations that do not have appropriate information processing infrastructure and ICT services and without existing organizational or rational approaches to update or modernize systems and structures put in place.

A number of actors and institutions have blamed this poor connectivity and high digital divide between rural and urban areas on the exorbitant cost of Internet connection in Cameroon. A requirement to increase the deployment of Internet services in Cameroon, is the reduction of the cost of connectivity and bandwidth and improvement in the QoS.

The deployment of the optical fibre and setting up of an Internet Exchange Point (IXP), interconnecting Internet service providers with local Internet traffic exchange happening locally reducing the cost involved in transiting through multiple international hops to reach required destinations. This will ultimately lead to a boost in the domestic Internet enterprise as there is an increase in the demand for bandwidth and domestic Internet services (e-government, e-commerce, e-banking, web services, content hosting).

VI. **Estimate of the socio-economic impact of internet cuts in the English speaking region of Cameroon**

There is no gainsaying that ICTs plays a critical role in the development of sectors including banking, finance, governance, education, and health, insurance that are the backbone of the socio-economic development of every nation. This is in addition to its important role in
enhancing good governance through effective citizen participation in decision making processes and the promotion of a voice-response mechanism between duty bearers and right holders. Citing the case of social media, a web-based technology that uses desktop computers, mobile phones to create highly interactive platforms through which individuals, communities and organizations can share, co-create, discuss and download text based information and images online at an alarming faster speed, Dr Tatah Peter Ntainmah, a Cameroonian Medical Anthropologist states categorically that any modern community cannot develop without the use of ICTs which has introduced landmark changes on the traditional media (print, radio and television) with the violations far less compared to its importance (Cameroon Tribune January 16 2017, p7).

VI.1. Implication of ICT shutdown on the socio-economic sectors in Cameroon

In the second part of the research, the authors seek to pull together the socio-economic impacts of the Internet cuts from the perspective of the end-users of these ICT services vis-à-vis other published sources.

Several authors and institutions (Gueririo 2014, the 2005-2015 Sector Strategy for Telecommunications and ICT) have pointed out that Internet and online app shutdown will have significant impacts on the following sectors:

1. Financial inclusion;
2. Social inclusion;
3. Health;
4. Education;
5. Agriculture;
6. Tourism.

VI.2. ICT, Education and research sector

This sector is in charge of developing human resources, knowledge production and generation through schools, colleges, universities and research institutes spread across the national territory. Although significant efforts are being made by the government through major projects like construction of multimedia resource centres in selected public schools with Internet connection, construction of telecommunication network linking all state universities and higher institutes of learning and research with a connection to the Internet, the offer of 500,000 laptops to University Students by Cameroon’s Head of State in as a step towards addressing the computer/student ratio in the higher education. Although this initiatives and projects are contributing to make this sector plays the catalyst role to develop and deploy ICTs throughout the country, much still needs to be done. More regrettably the shutting down of Internet in a region where the government was struggling to address the issue of school boycott only aggravates the negative impacts on the sector which was has been referred to as one of the best in the country.

VI.3. ICT, Health and social welfare sector
In its quest for emergence, the challenge of lack of equipment and access to ICT infrastructure needs to be addressed, for better management of health and social welfare issues. In Cameroon’s Head of states message to the nation on December 31 2017, he indicated that one of the priorities for the government in the coming years was the provision of quality and universal health care to Cameroonian and progressively establish a universal health coverage system. Thus according to the National Inter-sector technical Committee, the operation of this system shall entail establishment of a single national structure in charge of technical and financial management of health coverage with biometric registration at designated registration points (CRTV 2018). If this government action must succeed then there will be need for massive development and deployment of wide-scale ICT applications especially the Internet to ensure that this is a very inclusive process. In addition to managing those who have concerns with welfare and social security these advances in the ICT sector will support the increasing public discussions on innovative approaches to address health issues including telemedicine.

VI.4. ICT, Production and trade sector

The deployment of ICTs (especially the Internet) is key to boost the production and trade sectors specifically to facilitate management duties (administrative and finance), commercial duties (purchases and marketing), and production duties. Enterprises that make use of ICTs especially Internet connectivity are at the centre of the promotion of the digital economy with a cross section of them actively involved in e-transactions, such as online banking transactions although the rate of penetration is relatively low compared to that are actively using e-transaction applications on legal and tax issues. Even the public and private institutions that have put up websites with some interactive have failed to put in place systems to update these sites or render them fully functional. For example, the National One-Stop-Shop for external trade transactions (referred to in French as Guichet Unique des opérations du Commerce Extérieur - www.guichetunique.org) has not been operational for a long time (NAICT 2007). Innovations that have become commonplace in other contexts are only recently arriving Cameroon including Internet and mobile telephone banking and transactions which have been at the centre of growing e-commerce sector thought still at a very embryonic stage of development.

The agriculture sector, which is considered one of the mainstays of the country, exporting several basic commodities, information about this sector is almost absent or very scanty on the online. Essential information such as on the main actors in the agriculture chain (producers, consumers), early warning systems related to emerging markets, weather related risks, disasters, stocks and prices) are yet to be developed, thus leaving producers and those on the demand side for agriculture produce, ill-informed.

The lack of ICTs in rural areas which are the hotspots for agriculture, further entrenches the disparity between local producers (suppliers) and the actors in urban foreign markets in constant demand of local produces.
VI.5. ICT, Culture and leisure sector

Internet is one of the best showcases for artistic heritage that have been converted into digital formats which is major business in the tourism and leisure industry. However Cameroon is still grappling with the issue adequate content production from its museums, libraries, archives and relevant institutions of culture and this is a major obstacle to thriving of the tourism, culture and leisure industry in Cameroon. The negative messages propagated through social media is seen as a contributor to the slump in the tourism sector in the two regions with the rate of occupation of rooms dropping from 61% to 45.66% despite additional investments in the sector with 300 rooms added to the existing 2122 already existing. Table 8 & 9 and Table 10 & 11 presents a comparative analysis of trends in the hotel sector in the North West region.

Table 8: Third quarter statistics in the hotel sector in the North West in 2016

<table>
<thead>
<tr>
<th>Month</th>
<th>Rooms available</th>
<th>Rooms occupied</th>
<th>Arrivals</th>
<th>No. of nights</th>
<th>Turnover in FCFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>2122</td>
<td>1294</td>
<td>3589</td>
<td>5003</td>
<td>3320250</td>
</tr>
<tr>
<td>August</td>
<td>2122</td>
<td>1399</td>
<td>3700</td>
<td>5728</td>
<td>49597000</td>
</tr>
<tr>
<td>September</td>
<td>2122</td>
<td>1241</td>
<td>3197</td>
<td>4561</td>
<td>47594601</td>
</tr>
</tbody>
</table>

Source: Cameroon Tribune

Table 9: Third quarter statistics in the hotel sector in the North West in 2017
<table>
<thead>
<tr>
<th>Month</th>
<th>Available nights</th>
<th>Occupied nights</th>
<th>Nights</th>
<th>FCFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>2422</td>
<td>1106</td>
<td>1887</td>
<td>2258</td>
</tr>
<tr>
<td>August</td>
<td>2422</td>
<td>1111</td>
<td>1690</td>
<td>2030</td>
</tr>
<tr>
<td>September</td>
<td>2422</td>
<td>1084</td>
<td>1555</td>
<td>2178</td>
</tr>
</tbody>
</table>

Source: Cameroon Tribune, 08 December 2017, p9

Table 10: Revenue in the hotel sector in the first half of 2016 in the North West region

<table>
<thead>
<tr>
<th>Month</th>
<th>Revenue FCFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>87,200,505</td>
</tr>
<tr>
<td>February</td>
<td>71,011,609</td>
</tr>
<tr>
<td>March</td>
<td>72,711,474</td>
</tr>
<tr>
<td>April</td>
<td>70,138,776</td>
</tr>
<tr>
<td>May</td>
<td>42,295,369</td>
</tr>
<tr>
<td>June</td>
<td>78,513,995</td>
</tr>
<tr>
<td>TOTAL</td>
<td>421,871,728</td>
</tr>
</tbody>
</table>

Table 11: Revenue in the hotel sector in the first half of 2017 in the North West region
The development and deployment of ICTs especially the Internet will be crucial to boosting other sectors including:

- Cyber-services and work, with a need for rapid development of the e-work enterprises that take advantage of current organizational working methods based on networking, which constitutes a major sources of job creation for Cameroon which is shaving significant challenges with unemployment and underemployment;

- Defense and security sector, with a wealth of opportunities and at the time increases the vulnerability of States such as cyber criminality with heightened insecurity for citizens and enterprises. This directly has an impact on the sovereignty of the State.

Therefore, with the existing challenges significantly contributing to straining the relationship between services providers and their users, the recent phenomenon that has taken place is Governments trying to constrain citizens access to online space by suppressing access to mobile telephone and Internet.

**VII. Estimating the cost of internet disruption in Cameroon**

Studies on assessing the economic impact of the disruption of Internet especially for sub Saharan countries are still scanty. Globally, two studies published in 2016 by Brookings institution and Deloitte are the most renown, presenting some clarity and rigor in
These studies have stated that there are challenges in knowing what exactly what data to be used in quantifying the impact of very specific types of disruptions as this would require a level of granularity of data which is beyond the information publicly available. These studies have equally pointed out that very few publications that examine the economic impact of Internet disruptions and this partly in identifying these disruptions and collecting relevant data as most studies have focused on the impact on the GDP. For example, it is challenging to quantify data related to loss for investor, consumer and business confidence and more difficult especially the impact of such disruptions on the informal economic sector which is quite thriving.

It is imperative to design a harmonized framework to assess the effect of disruptions in the region, one that takes into consideration the informal economy that in addition to GDP based approaches. One of such approach has been made public by institutions such as Collaboration on International ICT Policy for East and Southern Africa (CIPESA) that has developed a clear the Framework for Estimating the Economic Impact of Internet Disruptions (Internet, Social Media and App Shutdown) in Sub-Saharan Africa.

VII.1. Estimating the Impact of an Internet Shutdown

To examine the total economic cost of a national Internet shutdown we combine direct and indirect cost as well as country risk premium/cost of capital as below:

\[
\text{Total Economic Effect} = \text{Internet GDP Loss estimate (a)} + \text{National Estimated Lost Digitisation Cost Savings and Efficiency Gains (b)} + \text{Country Risk Profile effects (c)}
\]

Where
(a) = Internet GDP Loss Estimate
= (National GDP * % share of Internet services GDP*duration of the disruption (% of the year based on the number of days Internet was shut down)).

(b) = Total loss of efficiency gain that would accrue from digitisation of businesses, governments + loss due to weakened confidence arising from Internet deprivation;

* Internet confidence deprivation ratio.

(c) = Country Risk Profile Effects
= Risk Free Rate + Beta [Expected Return on Market- Risk Free Rate +Country Risk Premium]*

VII.2. Estimating the Impact of a Social Media and App Shutdown

Total Economic Effect of App shutdown = App GDP Loss estimate (direct cost effects)* +
* Share of the revenues from app-based services including Social Media like WhatsApp, Skype to total Internet revenue.

Applying this framework to a selected number of countries gives the following economic impact of shut down per day as depicted on the Table 10.

**Table 12: Estimated economic impact of a total Internet blackout and app disruption per day in USD using the CIPESA Framework**

<table>
<thead>
<tr>
<th>Country</th>
<th>Net direct economic effect per day (a)</th>
<th>Net indirect economic effect per day (b+c)</th>
<th>Total economic cost of Internet disruption per day</th>
<th>Total cost due to app disruption per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>82,384</td>
<td>84,032</td>
<td>166,416</td>
<td>41,504</td>
</tr>
<tr>
<td>Cameroon</td>
<td>994,703</td>
<td>676,398</td>
<td>1,671,102</td>
<td>417,775</td>
</tr>
<tr>
<td>DR Congo</td>
<td>958,867</td>
<td>978,844</td>
<td>1,936,911</td>
<td>484,228</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1,982,856</td>
<td>1,516,885</td>
<td>3,499,741</td>
<td>874,935</td>
</tr>
<tr>
<td>Gabon</td>
<td>564,119</td>
<td>297,901</td>
<td>862,019</td>
<td>220,505</td>
</tr>
<tr>
<td>Gambia</td>
<td>26,427</td>
<td>26,956</td>
<td>53,383</td>
<td>13,346</td>
</tr>
<tr>
<td>Niger</td>
<td>205,726</td>
<td>209,840</td>
<td>415,566</td>
<td>103,891</td>
</tr>
<tr>
<td>Republic of Congo</td>
<td>214,617</td>
<td>218,809</td>
<td>433,526</td>
<td>108,381</td>
</tr>
<tr>
<td>Togo</td>
<td>120,548</td>
<td>122,959</td>
<td>243,507</td>
<td>60,877</td>
</tr>
<tr>
<td>Uganda</td>
<td>1,049,092</td>
<td>713,383</td>
<td>1,762,475</td>
<td>440,619</td>
</tr>
<tr>
<td>Kenya</td>
<td>4,125,464</td>
<td>2,191,230</td>
<td>6,316,695</td>
<td>1,895,008</td>
</tr>
</tbody>
</table>

Source: CIPESA 2016

In Cameroon, Internet shutdown and social media and app shutdown in the two Anglophone regions ran from January to April 2017 and from October 2017 onwards. These two regions were among the most digitally connected in Cameroon, just behind littoral (Douala) and Centre (Yaounde). The two regions local economy was characterized by the banking and microfinance, oil and gas, intensive large scale and smallholder agriculture supplying local and foreign markets contributing 20% of the GDP. Shutting down of the Internet greatly paralyzed the economy of these regions with significant impact on the population and the national economy (ICG 2016). A number of institutions including medias have referred to Cameroon’s government action as an outright violation of constitutional rights to freedom of expression and access to information (Cameroon-Info.Net 2018).

Based on the proposed CIPESA framework, Internet blackout and app disruption have gone on for 246 days. This implies a total economic cost as at February 3 2018 as follows:

**Table 12: Estimated economic impact of 246 days Internet cut using the CIPESA Framework**

<table>
<thead>
<tr>
<th>Nature of disruption</th>
<th>Number of days (a)</th>
<th>Cost of disruption per % contribution</th>
<th>Total cost incurred as a result of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 13: Estimated economic impacts of Internet cuts by other institutions

<table>
<thead>
<tr>
<th>Institution/Body</th>
<th>Number of days of shutdown</th>
<th>Estimated loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet sans frontières</td>
<td>235</td>
<td>USD 39millions</td>
</tr>
<tr>
<td>Access Now, using the methodology proposed by the Global Network Initiative and Deloitte</td>
<td>15</td>
<td>723,000 dollars, or 675,000 euros, or 443,000,000 CFA francs.</td>
</tr>
<tr>
<td>International crisis group</td>
<td>235</td>
<td>CFA2 billion (€3 million).</td>
</tr>
</tbody>
</table>

Source: Compiled by Eric Ngang 2018

### Table 14: Estimated economic impacts of Internet cuts by other institutions

<table>
<thead>
<tr>
<th>Institution/Body</th>
<th>Number of days of shutdown</th>
<th>Estimated loss in USD/Euro</th>
<th>Estimated loss in FCFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet sans frontières</td>
<td>246</td>
<td>USD 41millions</td>
<td>24billion</td>
</tr>
<tr>
<td>Access Now, using the methodology proposed by the Global Network Initiative and Deloitte</td>
<td>246</td>
<td>USD11857200</td>
<td>7billion</td>
</tr>
<tr>
<td>International crisis group</td>
<td>246</td>
<td>USD3559322</td>
<td>2.1billion</td>
</tr>
</tbody>
</table>

Source: Compiled by Eric Ngang 2018
VIII. What is the perspective of different stakeholders on the socio-economic impacts of internet cuts in the anglophone region of Cameroon?

In this section, analysis of key indicators examined through a questionnaire showing the impact on different gender strata in the two regions, respondents sector of activities and how this ties to the econometric analysis above. From the analysis presented below, it is clear that the socio-economic impacts are significantly felt by all sectors of the society in the two regions currently experiencing the shutdown.

Figure 11: Gender distribution and age range of respondents

67% of respondents were male and bulk of them fall in age range 25 to 34. It is plausible to say there is male dominance when it comes to the usage of Internet.

Figure 12: Educational level and sector of activity of respondents

The major sector of activity of the respondents was in education and this correlates with the fact that the age range of 25 to 34 were mostly people enrolled in different institutions of learning.
58% of respondents indicated that access to the Internet was a basic right and of this number, 83% was actually using the Internet prior to government shut down. There is therefore a significant number of respondents who did not access to the Internet was a basic right.
70% of respondents indicated that they accessed the Internet using their phones and this correlates with the statistics indicating that the usage of smartphones has been the precursor to the rapid penetration and increase in the user base of mobile Internet. In addition, because of the portability of hand devices, users access Internet while at home or at school including a variety of other locations without any restriction.

**Figure 15: Purpose and how often is Internet used**

83% of respondents indicated that they used Internet on a daily basis and for a wide range of purposes including: Studies, communicating with friends and family (Telephone, Email, Skype, Imo, Whatsapp, linkedIn, Facebook), marketing products and services, fundraising, networking with friends and business partners, sharing of happenings around, accessing health services, performing financial transactions, purchasing goods and services, searching for search for jobs, accessing news through online publications and podcasts, interacting with public authorities, securing and storing files and documents, accessing music etc, maintaining personal blogs and campaigning on political issues. Thus considering these wide range of activities, Internet shutdown and social media and app shutdown will mean depriving users of all these services and activities that are dependent on the Internet and this adds to the total cost of Internet shutdown for the period of 246 days as at 2017 February 4, without an envisaged end in sight.
Respondents indicated significant negative impacts on their daily activities including devastating psychological effects caused by loss of contacts with family and loved ones, halving of sales, losses of jobs and business deals. Although a bulk of respondents (21%) indicated that they could estimate in monetary terms what these losses amounted to, 79% indicated that they had lost at least FCFA 100,000. It could be plausible to say everyone (individuals, business and institutions) in the two English Speaking regions region depends on the Internet for one reason or another and therefore at an average loss of FCFA 100,000 per day, with a total population of approximately 3,381,980, it is estimated that a total of FCFA 338,198,000,000 has been lost in 246 days of shutdown. Although there is a disparity between this estimated figure based on respondents perspective and the FCFA 498,958,721,320 calculated using the CIPESA framework, there is a clear indication that there have been significant financial losses as a result of the Internet shutdown.
IX. Mind chats

In the course of doing the desk review and administration of the questionnaires, a number of testimonies were captures and some of them are presented below.

1. "In Cameroon we don't worry about [Internet] surveillance or privacy. We worry about how we can get access to the Internet." Al Banda of ActivSpaces Cameroon, a tech hub that runs centers aimed at providing resources to technology startups. We run two programs, an incubation program and an acceleration program;

2. "I urge the entire nation to resolutely mobilize and support the numerous initiatives undertaken by our youths in this area," he said. "It is through such collective commitment that we will be able to rise to the challenge of digital transition." President Paul Biya’s speech during the 50th Edition of the Youth Day hailed the Cameroonian Youth as the "Android generation" and Cameroon's rising digital economy;

3. “……but while the Anglophone regions remain offline, this vision of a united and prosperous future is in jeopardy. "This is unfortunately not a surprise as two neighboring countries -- Chad and Gabon -- both resorted to this radical solution to suppress opposition during elections," Julie Owono, head of the Africa desk at Internet Sans Frontières;

4. "(The ban) has affected us very badly. We have emptied offices all over the city. All tech companies are down. Most banks are down and ATM machines are not working so people don't have access to cash. People have taken the last seven years to build the Silicon Mountain community with their bare hands and no government support" he says. "But the government's one move is about to crush all that. It is so frustrating.” “Silicon Mountain is now in a coma state… Eight start-ups who were part of their community partnership have been affected. And even though they paid rent for office space, and made a one-year payment for Internet connection to the government-owned CAMTEL—which also controls and cut the Internet. We’ve taken the time to build this vibrant community … But the government taking away the Internet for two weeks is devastating.” Otto Akama, community manager of Activspaces, a tech hub and incubator that serves many of the city's young entrepreneurs in Buea, as Cameroon's Interview Conducted on CNN January 2018.

5. ActivSpaces has invited tech founders leaving Buea to work out of its office space in Douala, the country’s largest city, and its commercial capital. But because of the costs involved in travelling, the over 70-kilometer distance between Douala and Buea, and the challenge in finding affordable accommodation, not all start-ups are able to move with their entire teams, Akama said in article published by Abdi Latif Dahir in Quartz Africa February 2017.

6. “Unable to get news about the health of my mother; unable to send money for her medication. I am unable to send an important job link to my brother; unable to get a bank statement from my bank, unable to continue to send money for the construction
of my house thus my workers have not been paid. Internet cut in the North West Region has had a very negative impact on students’ research considering that the North West Region is host to several universities and institution of higher learning in Cameroon” Dr Ndi Richard T, Peace and Conflict Resolution Specialist, now based in the US ;

7. “I have to drive for hours to access Internet in neighboring regions (fuel costs, car wear off, time loss)" , Anonymous respondent, Buea Cameroon ;

8. "We receive daily reports from people who cannot receive money from abroad. There are transactions that are blocked, customer orders that cannot go through with money transfer agencies closed...and if money does not get transfer, someone has to pay charges incurred" says Julie Owono, head of the Africa desk at Internet Sans Frontières ;

9. “We had already been suspecting it. So when I couldn’t access WhatsApp, I knew La Republique [du Cameroun] had done it again. But they are not smarter than us,” Limbe-based activist who requested anonymity for security reasons, indicated he had installed a VPN to bypass the blocked apps ;

10. “It is ridiculous given that Cameroon has ratified international conventions and optional protocols that promote Internet as a human rights in much the same way as water, electricity and education.” Gwain Colbert Fulai, a civil society activist in the city of Bamenda ;

11. “Dear customers, We are facing disturbances affecting social networks. Our teams are mobilised to restore the services. Thanks for your understanding.” Regular messages from Orange Cameroon to subscribers in the North West and South West during the period of Internet cuts No.2 telecoms company after MTN (Atabong 2017 in Quartz Africa) ;

12. “The increasing sophistication of Internet shutdowns to target smaller groups of people and locations” besides the deployment of technologies “that don’t truly provide new users with access to the full, open Internet.” Deji Olukotun, the senior global advocacy manager with Access Now 2017 in Quartz Africa ;

13. “To us, it is a sign that the government has no regards for our business, which directly contradicts its policies on youth development and professionalism, no right government does such thing in the 21st century.” says Kenneth Ngah, who established LCM Tours, a web platform that connects tourists to travel agencies and tour guides in Cameroon ;

14. Felata says they have had to move around physically between Douala and Buea to deliver content. “Every other day, somebody has to go back [to Buea] and meet the rest of the team.” This, he said, has made them incur transportation costs of more than $1,000. Felata says that if the shutdown keeps on going, they might have to move towards a less optimal business model or even “let go of the team in Buea.” Mohamed Felata is the founder of VIVA, a pioneer company that provides entertainment services inside Cameroon’s bus and train networks. Users can access VIVA content through
smartphones, tablets or through the screens equipped inside the buses. This is contained in article published by Abdi Latif Dahir in Quartz Africa February 2017;

15. “The long-term consequences of this inactivity will be a collective loss of human capital leading to a shortage of skills in Cameroon,” Reports in French language daily, ‘Le Quotidien de l’Economie’.
X. Recommendations to improve Internet access in Cameroon and conclusion

Although no serious socio-economic study has been published on the impact of Internet shutdown in two regions of Cameroon for several months the crisis, there is no doubt that the This study entailed a desk review focused on the examination of the antecedent issues around Cameroon’s telecommunication and information communication and technology landscape in Cameroon. It later on look at the socio-economic impact of Internet shutdown by looking at well established framework on calculating the economic impact in monetary terms and analysis of data collected from interaction with a cross section of stakeholders in the two regions currently experiencing shutdown. It was observed that the shutdown hit a cross section of all the sectors of the local economy and directly or indirectly had an impact on the entire population of these two regions and the nation as a whole.

In the course of this research, a number of observations were made that form the basis for recommendation especially to improve access to the Internet for Cameroonians:

1. A significant number of Cameroonians do not understand that access to Internet constitutes a basic right and thus that shutting down Internet for any Cameroonian is an outright violation of constitutional rights to freedom of expression and access to information. Generally, civil society in Cameroon has not been able to successfully combat government decisions that go against international best practices. The many consumer protection associations (25 recorded by the TRB) have not made a statement with respect to the ongoing Internet shutdown in Cameroon. Although a number of actions have been taken by some civil society groups, there is need for more coordination of such actions that culminate in a civil society unified voice that presses for the repeal of such unfriendly decisions. In addition, there is need for training and capacity building events to improve community knowledge on the place and role of the Internet. Thus capacity building and empowerment of civil society organizations on the issue of Internet access and affordability will be a crucial indicator of consumer protection in Cameroon;

2. Internet access and cost (cost of connectivity and bandwidth) is one of the major impediments to the penetration and usage of this tool. There is need for the government and the numerous stakeholders involved in the sector to relook at the issue of affordability in Cameroon to reduce cost of Internet and increase accessibility in Cameroon;

3. Significant investments has gone to expand Cameroon’s infrastructure and growing operator networks and these need to be translated improved quality of services for consumers;

4. Statistics for the ICT sector (both that from national institutions and international bodies) are quite contradictory and this gives why meaningful decisions pertaining to the sector cannot be taken with confidence. The National Institute of Statistics needs to play a more frontline role in the production and dissemination of more detailed, accurate and yearly data for the ICT sector.
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