REPUBLIC OF CAMEROON

Peace - Work – Fatherland

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TELECOMMUNICATIONS REGULATORY BOARD

SURVEY ON THE LEVEL OF ACCESS, USAGE AND THE PERCEPTION OF ELECTRONIC COMMUNICATIONS SERVICES

Produced with the technical support of the National Institute of Statistics

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CONTENT

LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms	**Meaning**
ADSL	Asymmetric Digital Subscriber Line
ANTIC	National Agency for Information and Communication Technologies
TRB	Telecommunications Regualtory Board
BSC	Base Station Controller
BTS	Base Transceiver Station
BUCREP	Central Bureau for populations census and survey
CAA	Self-contained Routing Centres
CAMTEL	Cameroon Telecommunications
CDMA	Code Division Multiple Access
CSP	Socio professional category
CTI	International Transit Centres
CTN	National Transit Centres
CTR	Regional transit Centres
GESP	Growth and Employment Strategy Paper
ECAM	Cameroon Household Survey
EESI	Survey on Employment and the Informal sector
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
INS	National Institute of Statistics
IP	Internet Protocol
INTELCAM	Cameroon International Telecommunications Company
ISP/ASP	Internet service provider / Application Service Provider
MINESEC	Ministry of Secondary Education
MINPOSTEL	Ministry of Posts and Telecommunications
MMS	Multimedia Messaging Service
MSC	Mobile Switching Center
MTN	Mobile Telecommunications Network
MGDs	Millenium Development Goals
PDH	Plesiochronous Digital Hierarchy
RGPH	General Census of Population and Housing
ISDN	Integrated Services Digital Network
PSTN	Public Switched Telephone Network
SAT-3	South Africa Telecommunications 3
SCM	Société Camerounaise des Mobiles
SDH	Synchronous Digital Hierarchy (SDH)
SMS	Short Message Service
ICTs	Information and Communication Technologies
ITU	International Telecommunications Union
RSU	Remote Subscriber Unit
VSAT	Very Small Aperture Terminal
WASC	Web Application Security Consortium
WIMAX	Worldwide Interoperability for Microwave Access
EA	Enumeration Area

LIST OF TABLES

LIST OF CHARTS

FOREWORD

The Telecommunications Regulatory Board (TRB) is in charge of the regulation, control and monitoring of the activities of wholesale and retail operators, and the protection of consumers of telecommunications services. It equally has to see to the implementation of the regulations in force and ensure that access to networks opened to the public is provided under objective, transparent and non-discriminatory conditions.

As such, it has to collect, centralize, process, and analyze all the statistics needed to monitor the telecommunications market. This was the basis for requesting the services of the National Institute of Statistics (NIS) to conduct the survey on the access, usage and perception of telecommunications services in Cameroon. The twofold objective is the production of core indicators on household access to ICTs and calculation of ICT synthetic indicators, namely the Digital Access Index and the ICT Development Index.

This activity is a follow up to that carried out in 2010 on the impact of low-cost night communications on young consumers. The partnership with NIS whose role includes the coordination of the activities of the national statistical information system, is meant to be sustainable. Indeed, other surveys are in the offing including one on cybercrime and another on consumer satisfaction.

TRB greatly appreciates NIS for its availability and professionalism in implementing the partnership. It also recognises with gratitude all those who contributed to the success of this operation, especially the households and businesses who joined in the exercise, and the media that has been informing the population before and during the operation on the field.

The Management

EXECUTIVE SUMMARY

1. Background

Since the advent of ICTs and their impact on the economy and the population, the Government has always focused on enhancing access to telecommunications for all. Its target set in the framework of the telecommunications sector strategy of the GESP is (i) to bring the fixed tele density to 45% and mobile tele density to 65%; (ii) to provide 40,000 villages with modern means of telecommunications; (iii) to make available to the public a 2 Mb/s access offer in all cities with a digital unit; and (iv) multiply by 50 the number of direct and indirect jobs. Achieving these targets will raise the Digital Access Index to 0.50 against 0.16 in 2002 which ranks Cameroon among the countries with low digital access. Hence, this survey conducted among Cameroonian households and businesses to measure the progress so far.

2. Methodology approach

The study was conducted simultaneously with households, private companies and public administrations in all ten regions of the country. The target population in households was people aged 15 or above. The sampling frame for the household survey was made up of the enumeration areas (EAs) of the cartographic work of the last General Census of Population and Housing (RGPH 3) in 2005. The survey sample for the household component was obtained using a 2-degree stratified random sampling. In all, 3896 households were selected.

As for Companies, the sampling frame was the directory obtained from the General Census of Enterprises (EGR), plus company data from the Statistical and Tax Declarations (DFS). The sample was selected so as to be representative of various industries. The cut-off method was used for choosing the various enterprises, which enabled the selection of 300 private companies. The method used for drawing public undertakings enabled the selection of 95 establishments.

3. Supply, access, and usage of telecommunications

➢ Supply

In terms of supply, between 2007 and 2013 the number of mobile phone subscribers more than tripled, moving from 4,506,929 to 14,841,311. However, the annual growth rate has been fluctuating considerably, alternating between 7.91% and 36.74% over the same period. Between 2007 and 2011, the number of fixed telephony subscribers increased from 191,513 to 658,263.

In 2014, the coverage rate rose significantly in all regions of the country and recorded the minimum level in the South (60.0%) and the maximum level in the West (98.7%).

➢ Access

In terms of access, the proportion of households with access to ICTs by phone is low. It is 4.6% for households with only a fixed line, 1.9% for those with both fixed line and mobile phone. Approximately 26% of households with only mobile phones can access ICTs. Radio and television are the ICT facilities mostly available to households, 59.3% for radio and 57.3% for television.

86.5% of companies across the country have a fixed telephone line. This rate stands at 81.3%, 86.2% and 88.1% in the primary, secondary and tertiary sector, respectively. Besides, private establishments own more fixed telephone lines (88.2%) than public institutions (82.1%).

- ***Usage***

In terms of usage, 78.9% of people have used a mobile phone, 8.3% a fixed phone, and 21.2% a computer while 16.2% have used the internet.

According to the area of residence, only 3.3% of people aged 15 years or older have used a landline in rural areas and 4% the internet. The share of people in urban areas who have used these means is relatively high (13.4% for landline, 28.8% for internet and 35.3% for computer).

Specifically, the Internet is mainly used for communication. In fact more than 8 out of 10 people who used the internet in the 3 months before the interview sent or received e-mails, and more than 6 people out of 10 sent or posted instant messages.

At the level of enterprises, it was noticed that a very large majority (91.7%) uses a computer and 40% have a website. Also, 42% have intranet; extranet being the least used tool, found in only 13% of these companies. Among the companies using computers, 8 out of 10 are connected to the internet

Depending on the type of company (public or private), private companies use a larger number of computers than public enterprises. More than 6 out of 10 private companies (64%) use 10 computers or more, while only 40% of public companies do. The proportion of public companies using 2 computers is 20% against 3% for private companies

The main activities of Cameroonian companies on the web are: sending and receiving mail (94.9%), searching for information about goods and services (78.2%), ordering (64.1%). Other reasons for using the Internet in enterprises are the access to banking services and online recruitment.

4. ICT Synthetic indicators

The Digital Access Index (DAI) for Cameroon is 0.356. This value ranks it among the countries with medium access. This reflects a clear evolution of Cameroon in digital access compared to previous years. For instance Cameroon had in 2002, a 0.16 DAI, an evolution of over two times the value of the DAI in ten years.

The ICT Development Index for Cameroon is 2.03.

5. Perception of the quality of services provided and of TRB

- ***Perception of the quality of services provided***

The call/answering service is very well known by consumers. Knowledge of other services (internet, messaging via the Internet, etc.) provided by the operators depends on the age and area of residence of customers. In other words, the younger they are, the more educated they are, the more informed they are of the services provided by operators. Besides, those living in urban areas are better informed about the services offered by operators than those living in rural areas.

The main difficulties faced by individuals in the use of mobile telephony are network access problems (62%) and the lack of network (46.4%).

Concerning satisfaction with telephony services, 99.8% of subscribers in Cameroon know ICT services and are globally satisfied with the solutions provided by the customer service in the event of telephony disruptions.

As for companies, telephony/internet related problems are diversified and depend on the type of users. The main telephony issue faced by companies is frequent network interruption (64.4%),

followed by the problem of poor quality transmission and reception (16.9%) and high communication costs (12.3%).

In terms of satisfaction, 56% of companies are satisfied with the services provided by ICT operators. The proportion of user firms in the primary and tertiary sectors satisfied with the services provided by operators is higher (80% and 58.4% respectively) than that of the secondary sector (46.5%). Private companies are more satisfied with the services rendered by the operators (58.5%) than public enterprises (49.4%).

- ***Perception of TRB***

Among individuals, only 12% have heard of TRB. The majority of people who have heard of TRB are found in the Centre region particularly in Yaounde (41%); whereas only 3% of people in the Far-North region have heard of TRB.

Those who are most aware of the existence of TRB are generally highly educated people (50.4%).

Among those who have heard of TRB, only 5% know its role. The percentages are higher in urban than in rural areas. They decrease as the level of education lowers.

Less than 2% of people know about the activities of TRB. The little known tasks of TRB, regardless of the region or area of residence, are resolution of disputes between operators and sanctions to operators who do not comply with the laws and regulations.

- ***Appreciation of the activities of TRB***

Overall, about 90% of people in most regions of the country and regardless of the area of residence think that TRB partly plays its role. In the Centre and Northern regions, less than one in five think that TRB does not play its role and just over 13% think its work is at least good enough.

At company level, only 17% think the actions are good while 23% find them bad.

6. Recommendations

In view of the results and the expectations voiced by people and administrations some recommendations were made:

- ✓ *Bridging the digital divide by improving the level of access in rural areas through the implementation of Decree No 2013/0398/PM of February 27, 2013 on the modalities for achieving universal service and the development of electronic communications in Cameroon. Enacting the decree will enable to speed up coverage in rural areas, with special focus on poor people's access with the funding from the Special Telecommunications Fund (SFT);*
- ✓ *Reducing electronic communications rates in all market segments; which calls for further opening up of the Cameroonian market to new operators to promote heightened competition;*
- ✓ *Providing trainings on the opportunities of the Internet for enterprises by employer organisations and actors of the ICT sector. In fact, enterprises use the Internet mostly for messaging, which is just a very partial use of the potential of this communication tool.*
- ✓ *Producing the IDI and DAI regularly for spatial and temporal comparisons. A sound and effective methodology for calculating the average cost of Internet access must be worked out and implemented;*
- ✓ *Promoting the development of an industry of content;*
- ✓ *Promoting the intranet in private and public administrations;*

- ✓ *Devising and implementing a communication strategy to promote the image and role of TRB among the population in general and consumers in particular; and working towards meeting people's expectations of improved quality of service and network coverage by industry players.*

CHAPTER 1 : BACKGROUND, OBJECTIVES AND METHODOLOGY

1.1. BACKGROUND AND JUSTIFICATION

Reaching the HIPC completion point in April 2006 enabled the Government to initiate and speed up the country's economic modernization process. Since then, the public authorities seem deeply engaged in a projects design and implementation policy aimed at accelerating economic growth, promoting sustainable development and combating poverty.

Since 2009, the Government committed to implementing the GESP to achieve the following objectives by 2020: (1) increase the annual economic growth rate to 5.5% on average, (2) reduce underemployment to less than 50%, (3) reduce income poverty rate to less than 28.7%, and (4) achieve the MDGs[1]. More specifically, the Government has set the following ICT targets by 2020: (i) increase the fixed tele density to 45% and mobile tele density to 65%; (ii) provide 40,000 villages with modern telecommunications means; (iii) make available to the public a 2 Mb/s access offer in all cities with a digital unit; and (iv) multiply by 50 the number of direct and indirect jobs. Moreover, achieving the eighth MDG, that is establishing a global partnership for development, entails inter alia expanding the use of information and communication technologies (ICTs).

The country has evolved significantly in recent years in the field of ICTs, particularly with the privatization of the only national company and the opening of the sector to several other operators. However some important issues of access and quality still exist. One of the proposed solutions is the optical fiber backbone whose development and commercialization are not yet fully effective and disseminated. The Digital Access Index of Cameroon in 2002 was 0.16, ranking it among the countries with low digital access. The Government signed up to the objective of raising that access index to 0.5 in twenty years.

It is in the context of monitoring ICT activities that the survey on the access, usage and perception of electronic communications services has been conducted jointly by NIS and TRB. This study will allow TRB to have critical data to effectively fulfill its missions, particularly those relating to the opening of networks to the public, the monitoring of telecommunications activities, the satisfaction of consumers and the formulation of a sector development plan.

This study will also lead to the production and analysis of core indicators on household access to ICTs and synthetic indicators such as the ICT Development Index (IDI) and the Digital Access Index (IAN) useful for international benchmarking.

1.2. MAIN OBJECTIVE

The main objective of this study is to produce, analyze and make available to TRB a set of relevant indicators to gain visibility on access, usage and perception of electronic Communications services in Cameroon. For better international visibility in Telecommunications, the Digital Access Index (DAI) and the ICT Development Index are discussed in a whole chapter.

SPECIFIC OBJECTIVES

Specifically, the aim is to produce, analyze and make available to TRB indicators to:

[1] See GESP, amended version P49.

- Assess the level of access, uses of telecommunications/ICT services in households and in the administrations/companies in both rural and urban areas;
- Gauge the perception of quality of service, the level of final expenditure of ICT consumers and knowledge of the role of TRB in regulating this sector and identify the users' main concerns;
- Identify reasons for using/not using the Internet in the last 12 months in households and businesses;
- Evaluate the knowledge of and satisfaction with the various services (telephony or internet) offered by Internet Access providers or telephone operators;
- At the international level, assess the relative position of Cameroon in telecommunications (synthetic indicators: Digital Access Index (DAI) and Development Index (IDI)).

1.1. METHODOLOGY APPROACH

This study covers both the household and the business components. The second part focuses on administrations and public and private companies.

1.3.1. Households

The study mainly centered on indicators related to the possession and use of ICTs and the perception of telecommunication services as well as of TRB.

Geographical coverage and fields of study

The study covers all ten (10) regions of Cameroon. The sample was made so as to yield strong results for the following areas of study: the cities of Douala and Yaoundé and the 10 administrative regions (Centre Region being considered without the town of Yaoundé, the Littoral region without the town of Douala). Appropriate weighting allows for results by area of residence and all over the country.

Observation units

The base for assessing access, usage of ICTs, and the perception of telecommunications services and of TRB by households was **individuals aged 15 or more**. These individuals were identified in the households selected during the sampling stages.

Sampling frame

The household sampling frame was made up of enumeration areas (EAs) of the cartographic work of the last General Census of Population and Housing (RGPH 3) of 2005.

Sampling

The survey sample was obtained through a 2-degree stratified random selection; each area of study divided into urban and rural parts to form the sampling strata and the sample drawn independently in each stratum. The primary sampling unit is the EA as defined in the 2005 RGPH. The first-stage units selection process is based on the sample of EAs obtained from the EDS-MICS survey of 2011. First-stage sampling units were drawn systematically with equal probability. Households were then selected in a second stage with equal probability.

Table 1 : Distribution of sample households amongst areas of study

Areas of study	Number of households in urban area	Number of households in rural area	Total
Adamawa	130	180	310
Centre (except Yaoundé)	120	216	336
Douala	344	0	344
East	120	216	336
Far-North	70	204	274
Littoral (except Douala)	240	120	360
North	70	192	262
North-West	120	192	312
West	130	180	310
South	120	216	336
South-West	160	228	388
Yaoundé	328	0	328
Cameroon	**1952**	**1944**	**3896**

Source : our calculations

1.3.2. Enterprises

Geographical coverage

The study focuses on administrations and formal enterprises listed in the business directory. It covers all 10 regions of the national territory. The sample includes enterprises pertaining to:

- the primary sector;
- the secondary sector;
- the tertiary sector.

Observation unit

The observation unit was the company (public and private). At this level, the chief executive or the person in charge of ICTs was interviewed.

Sampling frame

The frame used was the corporate directory which is an inventory of economic units made up of institutions and businesses. It consists of company files obtained during the General Census of Enterprises (GCE) to which were added the business data obtained from the Statistical and Tax Declarations (DFS).

Given the nature of the study (the use and perception of ICTs) companies investigated had to be formal structures that actually contribute to the economy[2]. In fact, the reality is almost the same in very small businesses most of which are on the margin of informal.

Sampling

A- Private companies

[2] The GCE carried out in 2009 for ICT issues was based on a sampling of 8035 companies and establishments. They were bodies subjected to the production of a DSF or with the following characteristics: (i) 10 permanent staff or more or (ii) turnover without tax equal to 100 million FCFA or above.

The sample was constituted so as to be **representative of the industry**[3]. The selection of companies was made following the cut-off method.

Selection of enterprises following the cut-off method

Choosing companies according to the cut-off method entails retaining in each branch the top companies accumulating a nearly **90% turnover**[4]**.**

The draw is conducted in several stages:

Stage 1: The companies in the directory are classified by sector and branch of activity. This classification ensures that all branches of activity are represented in the sample:

Stage 2: In each branch of activity, companies are ranked by decreasing turnover. The top companies cumulating 90% turnover of the branch are retained.

Stage 3 : Some adjustments are made later on to correct over-representation of certain branches in terms of number of selected companies. For example, branch 16 (Textile and Clothing industry) had 6178 enterprises most of which are very small. Should we consider only the turnover criterion, 4385 companies in this branch would be selected. Now this branch accounts for only 2.6% of the turnover in the secondary sector. In this case, only large companies were selected.

By applying this method, a representative sample made up of 778 firms from the business directory was drawn. This sample is representative of each branch of activity and therefore of all three sectors of the economy (primary, secondary, tertiary).

Stage 4 : Taking into account some variables of interest such as the use of electricity, network coverage of the geographical area and many others, the sample was reduced to 300 companies meeting these criteria. The table below provides a breakdown of private sector firms by field of activity.

Table 2 : Distribution of sample private enterprises according to the business line

	sector			
Region	Primary	Secondary	Tertiary	Total
Adamawa	0	1	1	2
Centre	0	4	0	4
Douala	7	73	86	166
East	0	1	0	1
Far-north	1	1	1	3
Littoral	2	8	1	11
North	1	8	1	10
North-West	1	6	5	12
West	4	15	2	21
South	0	0	1	1

[3] In company surveys representativeness of the sample cannot be ensured in the twelve regions of study as it is often the case in household surveys. In fact, enterprises are asymmetrically represented in regions. Furthermore, the criteria used to ensure representativeness of the sample (turnover, number of employees, added value, etc.) are inherent in enterprises and do not depend on the region.

[4] The turnover is the criterion used as an overall representativeness criterion to measure the weight of the sample compared to the overall population and set the threshold of representativeness. The value of sales which is closely linked to the turnover can be retained as a criterion. Yet, gathering such data is more difficult that turnover for it presupposes that the company provides a detailed analytical distribution of its sales.

South-West	1	3	1	5
Yaoundé	1	26	37	64
Grand total	**18**	**146**	**136**	**300**

Source : our calculations

B- Public enterprises

It was considered that there is no significant variation between the structures of the same level given the issue under study. However, the perception of the phenomenon can be very different when we look at decentralized services. From this perspective, the draw was carried out in stages:

• Public administrations were divided into two main groups: administrations of great importance (MINEFI MINEPAT, MINDEF, MINTRANSPORT ...) and "small" ministries (NIMPROFF, MINCULTURE,…).

• Then two administrations were drawn in each group at random,

• For each of these structures, a branch was selected at the regional, divisional and sub divisional level.

The number of public structures is given in the table below.

Table 3 : Number of public institutions to be surveyed

Hirarchical level	**Number of institutions**
Central Services	4
Regional level	3x 10=30
Divisional level	3x 10=30
Sub divisional level	3x 10=30
Total public institutions	**94**

Source : our calculations.

1.3.3 Data collection

Data collection took place from January 13 to 24, 2014 throughout the national territory, backed by administrative authorities. It also benefited from the logistical support of the regional branches of the National Institute of Statistics. Collection operations followed the methodology described above.

At the end of field operations, the tables below show the actually surveyed sample. The response rate is estimated at 90% for households and 75% for companies.

Table 4 : Distribution of sample households according to the area of study

	Number of households in urban areas	**Number of households in rural areas**	**Total**
Adamawa	130	180	310
Centre (except Yaoundé)	120	216	336
Douala	344	0	344
East	120	216	336
Far-North	70	204	274
Littoral (except Douala)	240	120	360
North	70	192	262

North-West	120	192	312
West	130	180	310
South	120	216	336
South-West	160	228	388
Yaounde	328	0	328
Cameroon	**1952**	**1944**	**3896**

Source : our calculations.

1.3.4. Socio and demographic characteristics of populations surveyed

The study focused on a sample of 3896 households spread across the country. Approximately 15121883 individuals were identified, 45% of which in urban areas. The gender distribution is similar to that of the 3rd RGPH with 51% of females. The population aged 15 or over represented 60%.

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Table 5 : Percentage distribution of household populations surveyed according to some social and demographic characteristics

	Gender		Age groups (in years old)					Total nber of people
	Male	Female	0-14	15-24	25-44	45-59	60 & +	%
Douala/Yaounde/Region								
Douala	49	51	32	22	31	10	5	100
Yaoundé	49	51	35	22	28	11	5	100
Adamawa	49	51	48	18	23	7	4	100
Centre	51	50	34	21	24	12	9	100
East	51	49	32	24	30	10	4	100
Far North	49	51	53	16	21	7	4	100
Littoral	49	51	32	19	30	11	8	100
North	50	50	43	23	23	7	4	100
North-West	46	55	40	19	22	9	9	100
West	48	52	39	23	21	11	6	100
South	51	49	30	21	28	12	9	100
South-West	48	51	27	25	33	10	5	100
Residence strata								
Urban	49	51	35	24	27	10	5	100
Rural	49	51	44	18	24	9	6	100
Total	**49**	**51**	**40**	**20**	**25**	**9**	**6**	**100**

Source : AUP, ART-NIS 2014 Surveys

1.3. DATA HARNESSING

This is the set of operations to be performed after the collection of information in order to obtain a reliable and usable data base for the production of the study report;

i. Coding of questionnaires

At the central level, a team was set up to codify completed questionnaires. This helped facilitate data entry.

ii. Capturing of questionnaires

A recruited and trained staff ensured data capturing under the supervision of the officials of the survey. Collection forms were entered through a safe and friendly interface created with the CSPRO software. A data entry manual was designed to enhance the efficacy of data entry operators

iii. File clearance

This step was to ensure good quality data. In other words, the aim was to check subsequently the consistency of data entered. Consistency tests were made for that purpose and revealed cases of inconsistencies that were corrected.

CHAPTER 2 : SUPPLY, ACCESS, AND USAGE OF TELECOMMUNICATIONS SERVICES

Before the 2000s, access to telephony was very expensive and the level of use of this service very low. The average cost for a call was 300 FCFA per minute against less than 100 FCFA in 2014. Indeed, the investments in the telecommunications sector have improved the range and reduced the costs of the services provided. Moreover, with the opening of the sector to three operators, ICT offers increased substantially and the cost of services dropped significantly

2.1. DEMOGRAPHIC, SOCIAL AND ECONOMIC TRENDS IN CAMEROON

Between 1976 and 2005, Cameroon's population more than doubled moving from 7,663,246 inhabitants in 1976 to 17,463,836 inhabitants in 2005. Projections of the 2005 RGPH indicate that the population will increase to 33,995,398 in 2035, representing a 94. 4% rise in 30 years.

Table 6: Trends in Cameroon population between 1976 and 2035

Year	1976	1987	2005	2010	2011	2014	2015	2035
Population	7663246	10493655	17463836	19406100	19892466	21657488	21917602	33955398

Source: 2005 RGPH, Projections of populations

The use of ICTs varies according to the activity and age of the population. The under-15 age group, which makes 43% of the population consists mainly of teenagers who use ICTs only for private purposes. Among 15 to 54 years, are those of working age using ICTs not only for private purposes, but also for professional obligations.

The people over 55 years represent almost 6.9% of Cameroon's population and consist mainly of late-career workers.

According to the 2011 EDS-MICS survey, the literacy rate of the population aged between 15 and 49 increased by 3 points from 69.9% in 2004 to 73.0% in 2011. Similarly, efforts are made by the Government to improve some socio-economic indicators in the population, including access to electricity and access to drinking water that rose respectively from 47.1% to 53.7% and 66.2% to 70.8% between 2004 and 2011.

Also, according to EESI 1 and 2 surveys, unemployment rate for young people aged 15 to 24 decreased by about 1 point from 7.6% to 6.4% between 2005 and 2010. Similarly, the overall underemployment rate declined by 3 points, moving from 73.3% to 70.6% between 2005 and 2010. At the macroeconomic level, the poverty rate remained virtually the same between 2001 and 2007, moving from 40.2% to 39.9%.

2.2. ICT LANDSCPAPE IN CAMEROON

2.2.1 History of ICTs in Cameroon

Cameroon is not on the sidelines of the information revolution of the 21st century. Recognizing the key role that ICTs play in sustainable development, our country undertook since 1995 a number of reforms to stimulate economic growth and revive the national economy through ICTs. These reforms were to encourage and promote the participation of private investors in the

development of telecommunications services. The Government implemented the reforms by defining a strategy and framework centered around:

- the development of services ;

- the privatisation of the public telephone operators CAMTEL and CAMTEL MOBILE and the grant of two mobile telecommunication licenses (MTN, ORANGE) ;

- the creation of the Telecommunications Regulatory Board (TRB);

- the creation of the National Agency for Information and Communication Technologies (ANTIC);

- the drafting of legislative and regulatory instruments in the field of ICTs;

In October 2005, the government adopted a sector strategy for telecommunications and ICTs targeting 2015. These guiding principles translated the willingness to:

- provide consumers with sufficient and quality means and services of telecommunications/ICTs throughout the national territory;

- create jobs for young graduates;

- improve the efficacy and efficiency of institutions and enterprises in the domain;

- promote the smooth development of telecommunication and ICT networks and services to ensure a better contribution of the sector to the national economy;

- promote private sector participation in the development of telecommunications in a competitive environment;

- curb poverty;

- respond to the need to integrate telecommunication/ICT networks within the sub-region.

ICT Products

There are four main services offered by ICTs, namely fixed telephony, mobile telephony, internet and intranet.

2.2.1.1 Fixed telephony

Fixed telephony provides voice, fax, internet and related services.

2.2.1.2 Mobile telephony

Apart from telephone service, operators provide a wide range of value added services that include the following:

- ✓ Voice mail
- ✓ Call hold and double call
- ✓ Emergency call (117, 118, 119, 112 …)
- ✓ Conference call
- ✓ Call reject
- ✓ SMS
- ✓ Calling line identification
- ✓ Airtime credit checking for prepaid

- ✓ Credit transfer
- ✓ Tree-way calling
- ✓ Red list
- ✓ Call restrictions
- ✓ Favorite number
- ✓ Itemized billing…

Other operators are providers of value added services with activities dealing with enquiries, geolocation, money transfer, electronic payment, resale of traffic, games … Among these are:

- ✓ The payment of taxes through Mobile Money
- ✓ The payment of insurance premiums via mobile phone (Activa)
- ✓ The payment of bills via mobile phone (ENEO, CDE…)

2.2.1.3 Services offered through the internet

The main services offered on the Internet are the Web, e-mail, forums, chat and FTP, World Wide Web, mailing lists, transfer of FTP files and the internet relay chat (IRC). Each service uses a different protocol. Internet is based on the TCP/IP protocol but there are many other protocols in use on the network, such as: The World Wide Web; IRC or Chat and FTP file transfer.

2.2.1.4 Services offered via the intranet

The services offered on the intranet are the following:

- Information web pages;
- Shared calendars for joint management of projects;
- Internal messaging;
- The same can be used for external messaging when permanent internet connection is available. Where connection is not permanent it is possible to host the email domain in a secure site and gain remote access connection whenever necessary, to repatriate mails of all staff. The mails will be saved on the local server that will transfer to each user his mails only. This principle also applies to mail sending;
- Discussion forums on important issues.
- Video conferencing to hold meetings without having to travel.
- Telephony.

With a headset or a microphone and speaker, telephony really helps in companies with branches in other cities or countries because there is no cost. Another advantage is that sometimes, switch outputs are not sufficient and some offices cannot be reached until the network cable goes through. The last advantage is that the system behaves like a second internal line and would be another way to reach an employee whose set is occupied.

2.2.2 ICT penetration

Table 7 : ICT infrastructure indicators from 2012 to 2013

Indicators	**2012**	**2013**
Number of fixed telephone lines	276 219	341 123
Number of subscribers to mobile cell telephony	13 108 058	14 841 311
Number of subscribers (companies, individuals) to fixed internet	137 306	381 236
Number of subscribers to internet via fixed broadband access (high speed)	149 639	397 284
Number of subscribers to broadband mobile (high speed)	37 088	29 920

Source : TRB

Fixed Internet subscribers refer to individuals (or households, as appropriate) with fixed access connection to the Internet, which includes dial-up and fixed broadband subscribers, cable modem, digital subscriber lines, Internet subscribers, and other fixed broadband and leased line internet subscribers.

Fixed broadband Internet includes cable modem, digital subscriber lines, fiber optic technology and other broadband (such as broadband satellite internet, Ethernet LAN, fixed wireless access, wireless LAN, (WLAN) and WiMAX). Subscribers to data communications access (including the Internet) via mobile cellular networks are not concerned.

2.2.3 Network coverage

ICT production facilities enable territorial coverage by telephone networks. Fixed telephony is provided exclusively by the parastatal CAMTEL (Cameroon Telecommunications). According to the results of the Scan-ICT survey conducted in 2006, coverage of fixed telephone network in the ten regions of Cameroon is uneven. In fact, the rate varies from one region to another, from 12.9% (East) to 62.5% (Adamawa).

Table 8 : Trends in mobile network coverage between 2006 and 2013

	2013				2006
Region	Number of localities	Number of localities not covered	Number of MCT or DAP existing or to be rehabilitated in 2013	Coverage rate (in %)	Coverage rate (in %)
Adamawa	2171	536	13	75,31	25
Centre	8621	1945	28	77,44	61,2
East	2429	401	18	83,49	32,3
Far North	8576	1095	24	87,23	21,1
littoral	3367	491	18	85,42	82,8
North	4170	530	18	87,29	50
North-West	3657	231	17	93,68	41,9
West	4244	55	21	98,7	86,5
South	3489	1394	29	60,05	56,8
South-West	2137	475	16	77,77	51,9
Total	42861	7153	202	83,31	52,3

*MTC : multipurpose community tele centre, *DAP : digital access point

Source :2006 SCAN-ICT survey, ART2014

Mobile telephony grew faster than fixed telephony even though it came several years later. The market is shared by two operators, MTN (Mobile Telephony Network) and ORANGE. The results of the 2006 Scan-ICT survey reveals that mobile network coverage varies by region, 21.1% (Far North) to 86.5% (West), for a total national coverage of 52.3%.

Between 2006 and 2014, the coverage rate increased significantly in all regions of the country, ranging from 60.05% in the South to 98.70% in the West Region, with a national average of

83, 31%. However, it is noteworthy that the total number of localities increased from 646 to 35,708 between 2006 and 2014.

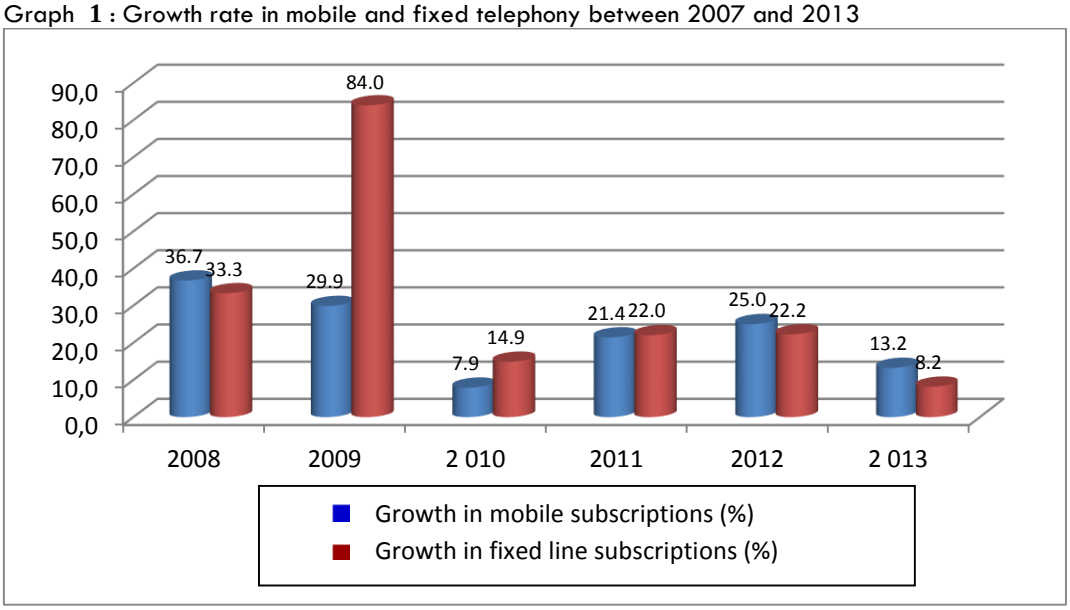
Also, it is should be noted that the concept of locality used here is that referred to in the 2005 RGPH, which is an inhabited site, a group of houses circumscribed in space. It is usually identified by a name recognized by the population and attached to a village. Hamlets and settlements of farmers, fishermen or breeders and remote dwellings are considered as localities (RGPH2005).

2.2.4 Growth of subscriber base

Since 2007, the number of mobile telephone subscribers has been growing at a high pace. Actually, between 2007 and 2013 the number of mobile phone subscribers more than tripled, going from 4,506,929 to 14,841,311. But the annual growth rate is highly variable, alternating between 7.91% and 36.74% over the same period

The situation of fixed telephony is almost similar to that of mobile telephony between 2007 and 2013. In fact, during this period, the number of subscribers more than tripled moving from 191 513 to 870 437.

Graph **1** : Growth rate in mobile and fixed telephony between 2007 and 2013



Source : TRB

Table 9 : Distribution of fixed and mobile telephony subscribers from 2007 and 2013 per operator

YEARS	2007	2008	2009	2 010	2011	2012	2 013
Mtn	2 529 529	3571773	4364120	4 792 068	5800062	7306993	8 711 220
Orange	1 977 400	2590891	3639724	3 844 584	4686552	5801065	6 130 091
Mobile telephony (Mtn, Orange)	4 506 929	6 162 664	8 003 844	8 636 652	10 486 614	13 108 058	14 841 311
Subscriber growth rate (%)		36,74	29,88	7,91	21,42	25	13,22
Fixed telephony (CAMTEL)	191 513	255306	469648	539 504	658263	804689	870437
Subscriber growth rate(%)		33,31	83,95	14,87	22,01	22,2	8,2

Source: TRB statistical data; NA: not available

2.3. ACCESS AND USAGE OF ICTs IN CAMEROON

2.3.1 ICT access in Cameroon

2.3.1.1. Level of household access to ICTs

Access to ICTs is a key communication factor in a society. It is done through several avenues such as radio, television, telephone set, etc. Overall, the proportion of households with telephone access is low. It stands at 4.6% for households with only a fixed telephone line, 1.9% for households with both a fixed line and mobile phones and about 26% of households with only mobile phones. The greatest accessible ICT tool for households is the radio (59.3%), followed by television (57.3%).

According to the area of residence, household access to ICT goods is higher in urban than in rural areas regardless of the tool. For households with only mobile phones, the difference between both areas is only 3 points (27.6% and 24%). Access to mobile phone seems as prevalent in urban areas as in rural communities.

Table**10** : Households access to ICTs

Indicator	Outcome 2011EDS-MICS	Total	Area of residence		Household size				
			Urbain	Rural	1	2	3-5	6-10	10 or more
Proportion of households with a radio set	56.1	59.3	65.3	53.7	57.1	57.9	59.7	59.6	58.2
Proportion of households with television set	45.6	57.3	83.9	31.9	48.4	58.8	61.0	54.7	48.0
Proportion of households with telephone (fixed or mobile)	NA	28.5	31.9	25.2	36.7	26.9	28.9	28.2	17.4
Proportion of households with fixed line only	2.7	4.6	7.4	1.9	5.1	5.8	4.6	4.3	3.2
Proportion of households with mobile phones only	NA	25.8	27.6	24.0	33.7	24.6	25.9	25.6	16.2
Proportion of households with fixed and mobile phones	NA	1.9	3.0	.8	2.1	3.5	1.6	1.7	2.0
Proportion of households with a computer	7.4	11.8	20.7	3.3	17.6	12.8	12.5	10.7	2.9
Proportion of households with internet at home	2.4	6.7	12.3	1.4	13.0	7.0	7.0	5.7	2.9
Proportion of households with electricity	53.7	64.0	93.7	35.7	69.0	68.3	68.8	58.0	48.3

Source: 2014 AUP, TRB-NIS Survey

2.3.1.2. Level of company access to ICTs

In companies possession of communications equipment varies depending on the business line and type of structure. 86.5% of companies across the country have a fixed line. This rate is 81.3%, 86.2% and 88.1% in the primary, secondary and tertiary sectors, respectively. Moreover, it has been observed that private enterprises have more fixed telephone lines (88.2%) than public establishments (82.1%).

Table **11**: Proportion of enterprises with fixed telephone lines, mobile phone lines (fleet) and automatic branch exchange by sector of activity and type of company

		Establishments with fixed telephone lines	Establishments with mobile telephone lines (fleet)	Establishments with a PABX service
Business line	Primary	81.3	87.5	56.3
	Secondary	86.2	80.5	45.8
	tertiary	88.1	58.3	36.1
Type of establishment	Private	88.2	82.4	50.5
	Public	82.1	31.3	13.8
Combined		**86.5**	**67.6**	**39.9**

Source : AUP Survey, TRB-NIS 2014

The fixed telephone line is used by a good majority of companies (86%). The fleet system offered by mobile operators is somewhat less used (66.9%) and just over a third of companies have a PABX Service.

Table **12** : ICT access in companies according to the business line and type of company

Proportion of enterprises:	Business line			Type of structure		Total
	Primary	Secondary	tertiairy	Private	Public	
	88.2	89.5	92.9	91.7	91.9	91.7
With a web site	41.2	40.0	42.1	50.9	15.1	40.6
With an Intranet	58.8	46.3	37.2	53.2	14.0	41.9
With an Extranet	11.8	11.6	10.9	14.2	7.0	12.7
With the Internet	82.4	86.3	71.0	89.0	46.5	76.5

Source : 2014AUP, TRB-NIS Survey

Table **13** : Proportion of companies per type and according to the level of access to fixed telephony services

		Staff access to fixed telephone					
		The entire staff	Directors only	Responsible staff	Not existing	Others	Total
Secteur d'activité	Primary	71.4	-	21.4	7.1	-	100.0
	Secondary	57.1	7.8	32.5	1.3	1.3	100.0
	tertiairy	63.5	12.2	23.7	.6		100.0
Type de structure	Private structures	63.6	6.5	27.7	1.6	0.5	100.0
	Public structures	55.7	20.0	22.9	1.4	-	100.0
Combined		61.4	10.2	26.4	1.6	0.4	100.0

Source : 2014 AUP, TRB-NIS Survey

Telephony services are available to staff in only 61.4% of companies. In other cases, only a high level of responsibility provides access to telephony services within the company.

2.3.2 Uses and usage of telecommunication services

The Internet is mainly used for communication purposes. Actually, more than 8 of 10 who used the internet in the last 3 months sent or received e-mails, and more than 6 of 10 people sent or posted instant messages. E-commerce remains tentative. Although 40% of Internet users surf on the Internet for information about goods and services, only 5.5% have bought or ordered and 5% have used the Internet for banking services. Just over a fifth of the population of Internet users makes calls via internet/VoIP. Educational activities are not left out, with just over half of Internet users performing educational and learning activities on the web.

2.3.2.1 Uses and usage of telecommunication services in households

Overall, 78.9% of individuals have used a mobile phone, 8.3% have used a landline, 21.2% have used a computer, while 16.2% have used the internet.

According to the area of residence only 3.3% of people aged 15 or older have used a landline in rural areas and 4% the internet. The proportion of urban people who used these means is relatively high (13.4% for fixed telephone, 28.8% for Internet and 35.3% for the computer).

Depending on the region, the proportion of individuals who have used a landline is very low in the Adamawa, Far North, Littoral except Douala, North and North West regions where the figure was less than 5%. Regarding the use of the internet, three groups of regions stand out: the first with low proportions (the three northern and the Northwest regions) with less than 10% of individuals who used the internet, the second with South-west, Yaounde, Douala recording19%, 49% and 35%, respectively and thirdly the regions with between 11% and 14%. This is the case for the Center Region except Yaoundé, Littoral except Douala and West.

Table**14**: Use of ICTs by household members

Areas	Proportion of individuals who have used a mobile telephone	Proportion of individuals who have used a fixed telephone	Proportion of individuals who have used a computer	Proportion of individuals who have used the internet
Combined	**78.9**	**8.3**	**21.2**	**16.2**
Urban area	88.8	13.4	35.3	28.8
Rural area	69.3	3.3	7.6	3.9
Douala	90.4	13.4	38.4	34.0
Yaounde	93.3	23.4	54.5	48.9
Adamawa	83.5	3.4	11.8	8.4
Centre - Yaounds	75.9	9.5	19.7	14.3
East	73.3	7.6	15.7	10.8
Far- North	68.3	1.1	4.8	2.6
Littoral - Douala	80.9	4.5	14.7	11.1
North	57.0	4.2	9.9	6.1
North-West	73.7	2.5	14.4	7.7
West	94.7	6.0	22.3	12.8
South	70.0	20.2	20.0	10.2
South-West	85.7	9.9	23.8	19.2

Source : *2014AUP, TRB-NIS Survey*

Table**15**: Proportion of individuals who used the internet, according to the place of use

Areas	Locations of internet use							
	Home	Workplace	Place of study	Another person's home	Internet community access centre	Commercial access internet centre	With a mobile phone (all locations)	With other mobile devices (all locations)
Combined	**46.6**	**22.7**	**16.3**	**7.3**	**2.9**	**62.3**	**23.1**	**5.0**
Urban area	47.9	23.5	15.9	7.6	2.5	63.9	22.0	4.6
Rural area	37.6	17.0	18.5	5.0	6.0	51.4	31.2	7.8
Douala	48.0	24.6	13.5	7.8	3.5	67.1	19.0	3.3
Yaounde	51.6	28.4	16.9	6.1	.6	62.8	18.6	2.5
Adamawa	42.7	18.8	10.8	3.5	6.1	58.3	45.1	19.0
Centre - Yaounde	48.7	15.9	25.6	11.7	5.6	58.3	36.9	18.2
East	44.0	21.8	15.6	3.2	4.1	57.5	15.6	1.0
Far- North	28.8	.0	4.8	4.8	4.8	61.7	47.9	4.8
Littoral - Douala	43.3	18.3	13.7	4.8	4.0	58.2	20.7	4.0
North	27.9	21.5	31.5	6.5	2.2	36.6	29.8	.0
North-West	52.7	21.7	21.7	16.2	12.6	59.8	25.6	3.7
West	45.6	16.0	10.6	1.8	.9	57.1	12.6	.9
South	28.5	24.8	22.9	6.3	6.8	66.2	9.0	.9
South-West	43.6	20.1	14.0	11.6	.9	713	36.8	12.3

Source : *2014AUP, TRB-NIS Survey*

Among the individuals who used the internet in the last three months, a small proportion did it in someone's home (7.3%), a community internet access center (2.9%), or through other mobile devices (all places) (500%). On the contrary, this proportion is relatively high for those who used it in a commercial internet access facility (62.3%) or at home (46.6%). Concerning workplaces, place of study, and the mobile phone (all locations), the proportions are 22.7%, 16.3% and 23.1%, respectively. In brief, individuals mainly used the Internet in commercial access centers. This observation was the same in all the regions and areas of residence. The internet is used less in rural areas than in urban areas where there is higher exposure to paid access centers generally known as cybercafés. The North accounts for the relatively low proportion of individuals who used the internet in a commercial center (36.6%). For this region, the percentage remains low for other places of use mentioned above (30% or less).

Discrepancies in home Internet use remain significant between Yaoundé, on the one hand and the South, the North and the Far North on the other hand, with nearly 30 points difference in the proportions of users. In the Far North, no individual has used the internet in the office. The situation is not very different from that of Yaounde, the West and South-West regions with regard to the use of internet in an internet community access center. It is in Adamawa and Far North that the proportion of individuals who used the internet via a mobile phone (any locations) is the highest.

Table**16** : Proportion of individuals who used the internet, according to the means of access

	Means of internet access

	Computer	Telephone	Tablet	PDA
Combined	**88.1**	**35.4**	**5.1**	**0.5**
Urban area	90.0	34.9	5.0	0.5
Rural area	74.6	39.3	5.9	0.8
Douala	90.9	39.7	6.1	0.3
Yaounde	95.4	26.7	3.1	0.2
Adamawa	83.2	59.5	3.6	0.0
Centre - Yaounde	78.0	46.0	13.0	4.3
East	91.7	22.8	0.0	1.1
Far - North	66.4	67.1	0.0	0.0
Littoral - Douala	83.8	34.4	0.8	0.8
North	81.4	51.0	2.2	0.0
North-West	78.0	36.4	12.7	0.0
West	87.4	22.4	3.6	0.0
South	95.5	19.6	0.9	0.0
South-West	78.6	41.7	7.4	0.4

Source : 2014 AUP, TRB-NIS Survey

Internet connection through a computer or telephone is the most common (88.1% and 35.4%, respectively). Internet access through tablets is not insignificant (5.1%), as this device was introduced only recently into our environment. However, there are virtually no figures concerning access through a PDA or any other device.

For connection through a tablet, proportions of individuals are zero or near zero in the East, Far North, Littoral (Douala excluded) and South. In the Centre (Yaoundé excluded) and Northwest, the proportions are 13% and the highest in the whole country.

Frequency of use depends on the number of times an individual uses the internet and periodicity of use. This periodicity can be at least once a day, at least once a week but not every day, or any other periodicity. Approximately 35% of individuals who used the internet in the reference period have done so at least once a day, whereas 46% did so at least once a week but not every day.

Discrepancies in the proportions of individuals in urban and rural areas are low (33% and 27%) for the frequency use of at least once a day. This gap is almost zero for the frequency of at least once a week but not every day (46 and 47%).

In the regions, the Far North has the lowest proportion of individuals (5.3%) using the internet at least once a day.

There are several internet connections: the wired connection which includes PSTN, ADSL types and optical fiber; and the wireless connection that comprises WIFI, WIMAX, GPRS/EDGE, CDMA types, and VSAT (SOHO).

Generally, the ADSL-type connection is the most used technology in Cameroon to gain access to the Internet. It is used by 20.2% of those individuals who were connected during the reference period. This observation is the same in urban areas where the proportion is higher.

There are regions where some of the above mentioned technologies are not used, namely in the Far North and the Northwest for the three wired types and the West for the fiber optic only.

Table 17 : Proportion of individuals who used the internet, according to the frequency of use

	At least once a day	At least once a week but not every day	Less than once a week	Less than once a month	total
Surveyed areas					
Douala	35.4	45.0	9.5	10.1	100.0
Yaounde	37.0	44.1	13.2	5.7	100.0
Adamawa	29.8	49.4	15.9	4.9	100.0
Centre	38.9	39.0	13.8	8.3	100.0
East	23.2	38.7	30.7	7.5	100.0
Far North	5.3	58.3	15.5	20.8	100.0
Littoral	29.1	49.3	11.6	10.0	100.0
North	27.6	53.3	2.2	16.9	100.0
North-West	29.5	50.0	15.0	5.5	100.0
West	29.3	43.5	16.4	10.9	100.0
South	10.3	69.1	13.1	7.6	100.0
South-West	30.0	51.9	10.4	7.7	100.0
Area of residence					
Urban	33.3	46.2	12.4	8.2	100.0
Rural	27.1	47.1	14.4	11.3	100.0
Combined	32.6	46.3	12.6	8.5	100.0

Source : 2014AUP, TRB-NIS Survey

Apart from communication, the use of the Internet does not vary significantly according to the area of residence. The proportion of urban Internet users who send/receive emails and post instant messages/information (84.1% and 63.0% respectively) is very much greater than that of rural areas (70.0% and 46.2% respectively). This could be explained by the spread out of social networks faster in urban than in rural areas. For the rest, it would be difficult to conclude that the internet is fashionable in urban areas. For example in rural areas, the proportion of people using internet for educational and learning activities is higher.

Men use communication tools more than women, regardless of the tool. The difference between the proportions of men and women using a computer and the Internet network are about nine points. A greater proportion of men uses the telephone (27.7% as against 17.7% for women) to access the Internet, while a larger proportion of women resorts to paid Internet access centers.

Men are much more regular on the Internet than women. 79.2% of men go online at least once a week, against 72.9% of women. The proportion of women using the Internet for communication purposes (send or receive e-mail, posting information or instant messages) is slightly higher than that of men. The opposite is observed when it comes to obtaining information (Getting Information on general governmental organizations, Read or download newspapers, magazines or books online).

Analysis by age shows that the youth population is the most involved in information and communication technologies. Phone use is higher in older age groups. This could stem from the fact that these age groups mostly own mobile phones, since they essentially represent the working population which is more likely to acquire the goods they need. In terms of the use of computers and the internet, the 15-24 years are most active. They connect from paid internet access centers (69.9%), homes (42.1%), through mobile phones (26.4%) and from their places

of study (25.3%). For the elderly, internet access places are homes, work places and paid internet access centers.

Nearly 3 out of 4 youths (15-24) connect to the internet at least once a week. They do so mostly for communication purposes (send or receive e-mail, posting information or instant messages), educational or learning activities and to download multimedia content.

The proportion of people frequently connecting to the internet decreases with age, but still remains high, even for people aged 45 years and over, who also connect much for communication, but also for information, learning and education.

The use of communication tools increases with the level of education, that is to say, the more we are educated, the more likely we are to use these tools. The data in Table 47 (see Appendix) shows that almost all highly educated persons (98.6%) have used a mobile phone in the three months preceding the interviews, whereas persons with low educational backgrounds account for 55.1%. The difference is even more obvious with the use of computers and the Internet, where the proportion of people with at most a primary school level using a computer is not up to 5%, while it is 2.2% for those using the internet. Among highly educated people, the computer is used by nearly 8 out of 10, and approximately 3 out of 4 people use the internet. The main Internet access sites remain the commercial access centers, homes, the mobile phone and the workplace, this regardless of the level of education. However, the proportion of people with a higher level acceding to the Internet from their workplace is more than twice that of people without any level.

The frequency of Internet use is closely linked to the level of education. Among those who connect to the internet, the proportion of people without any level surfing at least once a day is almost zero. Nearly 85% of high-level people connect at least once a week, against close to 70% of those with secondary education.

The main activity on the internet is communication, regardless of the level of education, even though the proportion of Internet users with no education and who have posted information or instant messages is 14%. For the latter, it is interesting to note that more than half (56%) engage in educational and learning activities on the Internet. This proportion is even higher than for those users who have primary or secondary level. The constant reason for going on the internet is multimedia content download, whatever the level of education. However, information-seeking activities (reading or downloading newspapers, magazines, or books online; research on general governmental organizations, on health or health services) are essentially restricted to the educated.

The main reason given for not having used a mobile phone is that they don't have one, and this is regardless of the area of residence. In about 10% of cases, the blame is tied to the lack of network coverage, a reason mostly given in rural areas (11.4%) than in urban areas (3.8%).

Tableau **18**: Reasons for not using mobile phone, according to the area of residence

	Reasons for not using a mobile phone							
	I don't have a phone/I lost my phone	My phone is broken down	I cannot use a phone	My phone line was suspended by the operator	I don't have or I don't know whereto call	No network in the locality	Other	Total
Combined	54.6	5.3	11.9	.3	3.2	9.5	15.2	100.0
Urban area	60.9	7.6	6.7	.9	5.8	3.8	14.3	100.0
Rural area	52.6	4.6	13.6	.1	2.3	11.4	15.5	100.0

Source : 2014AUP, TRB-NIS Survey

As for fixed telephone, the main reasons for not using it are the same as those outlined above, but with varying intensity. Indeed, the lack of fixed (telephone) lines remains the predominant reason (nearly 50%). Next is the network coverage, but this time in more than 1 in 5 cases. Once again the difference between urban and rural areas should be highlighted. In rural areas, the lack of network coverage accounts for the non utilisation of fixed telephone in more than 3 out of 10 cases, while in urban areas it is less than 1 out of 10.

Besides, more than 15% of individuals bring out other specific reasons for not using the fixed or mobile phone. For most of them, it is because of the lack of financial resources, the lack of electricity in the locality, no reason or no interest, student status and difficulties to reload.

Table **19** : Reasons for not using the fixed phone, according to the area of residence

	Reasons for not using the fixed telephone							
	I don't have a phone/I lost my phone	My phone is broken down	I can not use a phone	My phone line was suspended by the	I don't have/know where to call	No network in the locality	Other	Total
Combined	49.3	2.2	3.5	0.7	4.1	22.0	18.2	100.0
Urban area	59.5	3.0	1.4	1.4	3.9	9.3	21.6	100.0
Rural area	40.5	1.4	5.4	0.2	4.3	32.8	15.3	100.0

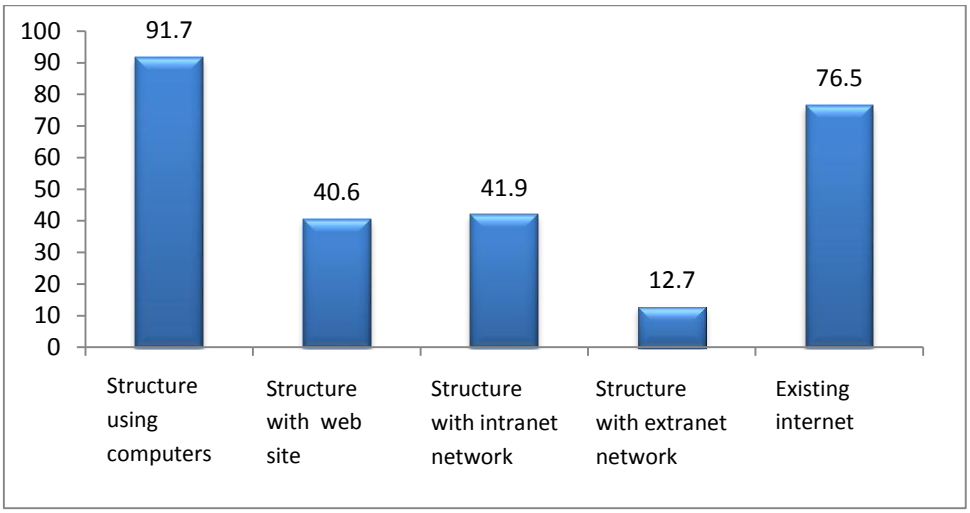
Source : 2014 AUP, TRB-NIS Survey

2.3.2.2 Uses and usage of telecommunications services in enterprises

The study involved formal enterprises producing a statistical and tax declaration, or having the following characteristics: (i) permanent workforce of 10 people or more or (ii) pre-tax turnover greater than or equal to 100 million FCFA.

Overall, a large majority (91.7%) uses computers, 40% have a website. Also, 42% have an intranet, extranet being the least used tool, found in only 13% of these companies. Among the companies using the computer, 8 out of 10 use the Internet.

Graph 2 : The use of ICTs in enterprises



Source : 2014AUP, TRB-NIS Survey

Table 20: Proportion of enterprises per type and business line, according to the number of computers used

		1	2	3 – 5	6 – 10	10 and above	Total
Business line	Primary	-	6.7	6.7	-	86.7	100.0
	Secondary	4.8	4.8	20.5	19.3	50.6	100.0
	Tertiary	7.9	10.9	10.3	13.3	57.6	100.0
Type of enterprises	Private structures	2.6	3.1	14.4	16.0	63.9	100.0
	Public structures	15.4	20.5	12.8	10.3	41.0	100.0
Overall		6.3	8.1	14.0	14.3	57.4	100.0

Source : 2014AUP, TRB-NIS Survey

Nearly 6 in 10 companies (57.4%) use 10 or more computers. The proportion of businesses using up to 2 computers is 8.1%, while those using between 3 and 5 computers is 14%.

According to the activity, more than 86.7% of companies use 10 or more computers in the primary sector. More than half of the companies in the secondary and tertiary sectors also use 10 computers or more.

According to the type of company (public or private) the study shows that private companies use a larger number of computers that public companies. More than 6 private companies in 10 (64%) use 10 computers or more while only 40% public companies do. The proportion of public companies using 2 computers is 20%, and 3% for private companies.

Table 21 : Proportion of enterprises per type, according to the number of computers (in %) connected to the internet

		(%)					
		Less than 20	20-40	40-60	60-80	80-100	Total
Business line	Primary	-	-	-	-	100.0	100.0
	Secondary	18.8	25.0	6.3	25.0	25.0	100.0

	Tertiary	14.3	16.7	21.4	19.0	28.6	100.0
Type of enterprises	Private structures	19.0	16.7	7.1	28.6	28.6	100.0
	Public structures	5.6	22.2	38.9	5.6	27.8	100.0
Combined		15.0	18.3	16.7	21.7	28.3	100.0

Source : 2014AUP, TRB-NIS Survey

Companies with computers make efforts not only to connect to the internet, but also to connect all their computers. Indeed, the proportion of firms with less than 20% of computers connected to the Internet is 15%. Half of the companies in the country have connected 60% or more of their computers.

Almost half of secondary businesses with computers have 60% or more of their computers connected to the Internet, yet nearly one-fifth of firms in this sector have less than one fifth of their computers connected to the internet. In the tertiary sector, nearly half (47.6%) of companies using computers have 60% or more of their computers connected to the Internet, and 14.3% have less than one fifth of their computers connected to the internet.

Private structures tend to connect all their computers, with 57.2%, that is 6 out of 10 or more computers connected to the Internet. This is only 33.4% in public institutions. The same is observed in firms with less than 40% of computers connected to the Internet, since the proportion of these companies among privates is 35.7%, against 27.8% in the public.

Table 22 : Proportion of companies per business line and type according to the kind of connection

		PSTN	ADSL	Optical fiber	Internat access provider(ISP)	WIFI	WIMAX	GPRS/EDGE(GSM)	CDMA	VSAT(SOHO)
Business line	Primary	0	35.7	14.3	28.6	57.1	43	28.6	21.4	0
	Secondary	2.4	24.4	13.4	28	24.4	24	7.3	13.4	7.3
	tertiary	3.1	43.1	26.2	15.4	37.7	16	6.2	10	6.9
Type of structure	Private structures	2.1	32	23.7	23.2	32.5	25	8.8	11.3	8.2
	Public structures	5	45	12.5	7.5	40	5	2.5	10	0
Combined		2.6	34.2	21.8	20.5	33.8	21	7.7	11.1	6.8

Source : 2014AUP, TRB-NIS Survey

Overall, ADSL and WIFI connections are the most used by companies (about 34% for each type of connection). The least used are PSTN, GPRS/EDGE(GSM) and VSAT (SOHO) connections.

In general, the trends are almost the same for the sectors of activity and the types of structure.

Table 23 : Proportion of companies per business line and type according to their activities on the internet

		Placing orders	Receiving orders	Sending or receiving mails	Advertising the structure and its products	VoIP/ posting information or instant messages	Obtaining information on goods and services	Obtaining information or exchanging with other structures or	Internal/external recruitment/trainin of staff	Banking services via internet/ gaining gaining access to other financial	After sales/ online delivery of products
Sector of activity	Primary	64.3	85.7	100.0	50.0	57.1	92.9	71.4	35.7	50.0	28.6
	Secondary	81.7	79.3	96.3	42.7	46.3	78.0	79.3	35.4	54.9	15.9
	tertiary	52.3	52.3	93.1	52.3	50.8	75.4	82.3	34.6	53.8	13.8
Type of structure	Private tructures	74.2	73.7	94.3	51.5	53.1	82.0	79.4	35.6	60.3	17.0
	Public structures	15.0	17.5	97.5	25.0	35.0	60.0	90.0	25.0	25.0	5.0
Overall		64.1	64.1	94.9	47.0	50.0	78.2	81.2	33.8	54.3	15.0

Source : 2014 AUP, TRB-NIS Survey

Cameroon companies have a wide range of activities on the Internet. Among those using this communication tool, 64.1% do so to place but also to receive orders, while 78.2% have used this medium to get information about goods or services, and 47.0% to promote their firms or products. More than half of businesses access banking or financial services online, and a third use the Internet for recruitments. All these trigger communication, therefore bringing to 94.9% the proportion of companies who used the internet to send and receive emails.

Firms of the primary and secondary sectors use Internet network more to place orders (64.3% and 81.7% respectively) and to receive orders (85.7% and 79.3%, respectively) than the tertiary (52.3% for the same activities). This could be explained by the fact that in the tertiary sector, communication technologies are not very widespread. The same is observed with regard to obtaining information on goods and services. However, the proportion of businesses using the internet for self-promotion and advertisement of their products is higher in the tertiary. There is not much difference in the use of banking or financial services between the different sectors.

In addition to such activities as "Getting information or interacting with other administrations or institutions" and "Sending or receiving emails" private structures mainly use the internet to carry out their activities compared to those of the public.

2.4. ICT SYNTHETIC INDICATORS

2.4.1. Digital Access Index (DAI)

2.4.1.1. Methodology of calculation and relevance of index

The Digital Access Index (DAI) measures the overall ability of individuals in a country to access and use information and communication technologies (ICTs). It consists of eight variables organised in five categories.

Each variable is converted to an indicator with a value between 0 and 1. The value of a given indicator is obtained by dividing the value of the variable by the maximum possible value (target value given by ITU). The value of each indicator is then weighted within its category. The average obtained from the weighted indicators in each category results in an overall indicator called "digital access indicator".

This index is built around four fundamental factors that impact a country's ability to access ICTs, namely: infrastructure, affordability, knowledge and quality. Until recently, limited infrastructure has often been regarded as the main barrier to bridging the digital divide. Yet, ITU research now indicates that affordability and education are equally important factors. A fifth factor, the actual usage of ICTs, is key in matching the index theory with the reality in a country. This index combines eight indicators covering these five factors, to provide an overall picture of a country score.

Index by category

The DAI is calculated in five sub categories: infrastructure, affordability, knowledge, quality and use.

- Infrastructure

Indicators related to this category are: the number of fixed telephone subscribers and the number of cell phone subscribers per 100 inhabitants; indicators provided by TRB.

- Affordability

The composite indicator that falls into this category is the "price of Internet access in percentage of the gross national income per capita x100". Gross National Income per capita is obtained from the national accounts produced by NIS. The Internet access cost was estimated from data collected from households in the survey.

- knowledge

The variables in this category are: the adult literacy rate and the combined primary, secondary and higher school enrollment rate.

The adult literacy rate was obtained from NIS reports, namely the 2011 DHS/MICS survey that provides gender literacy rate. Furthermore, population projections published by BUCREP give the percentage of men and women. Thus, the adult literacy rate was calculated using a weighed arithmetical average of the rates by gender and weighted by the weight of each gender.

The combined rate of enrollment in primary, secondary and higher education was obtained by putting together information from various sources. Educated populations (primary, secondary, higher) were pooled and matched to the school-age population of the three levels.

The denominator is the population aged between 6 and 35 years representing the following subgroups:

- ✓ 6-11 for primary ;
- ✓ 12-18 for secondary in 2011 ;
- ✓ 19-35 for higher education.

The numerator is the total enrolled in each level.

- ✓ primary school population in 2012: 4,153,693 students[5]
- ✓ secondary school population in 2011: 1,258,000 students

[5] BUCREP estimates

- ✓ higher education population in 2012: 250,346 students[6]

- Quality

The indicators within this category are: the international Internet bandwidth (in bits) per capita and the number of broadband subscribers per 100 inhabitants. All these indicators were obtained from TRB.

- Use

The only indicator in this category is the number of Internet users per 100 inhabitants.

[6] Statistical yearbook of the Ministry of Higher Education, 2012

2.4.1.2. Calculation of the index

The Digital Access Index was obtained from an average of category indices. The following table summarizes the steps for calculating the index, from the eight different indicators.

Table 24: Variables, categories and indicators used for calculating the Digital Access index

Category	Variable	Value for Cameroon (1)=(2)/(3)	Numerator			Denominator			Target maximum value (4)	Indicator (5)=(1)/(4)	Weighted factor (6)	Category index (7)=total (5) x (6) in the category
			Valeur (2)	Source	Année	Valeur (3)	Source	Année				
1-Infrastructure	1-) Number of fixed telephone subscribers per 100 inhabitants	4.1	870 437	TRB	2013	21143 237	BUCREP	2013	60	0.07	0.5	**0.405**
	2-) Number of cell phone subscribers per 100 inhabitants	74.1	15 664 666	TRB	2013	21143 237	BUCREP	2013	100	0.74	0.5	
2-Affordability	3-) internet access cost in percentage of the gross national income per inhabitant x100	19.7	116 400	AUP[7], TRB/NIS Survey	2014	591 804	NIS	2011	100	0.197	1.0	**0.197**
3-Knowledge	4-) Adults literacy rate (in %)	82.7		EDS-MICS	2011		EDS-MICS	2011	100	0.83	0.7	**0.699**
	5-) Education level, primary, secondary and higher (in %)	44.2	5 662 039	BUCREP MINESEC MINESUP	2012	12 812 546	BUCREP	2012	100	0.44	0.3	
4-Quality	6-) international internet bandwidth (in bits) per inhabitant	223.6	4 728 029 184	TRB	2013	21 143 237	BUCREP	2013	10000	0.72(a)	0.5	**0.395**
	7-) Number of bandwidth subscriber per 100 inhabitants	1.9	411 628	TRB	2013	21 143 237	BUCREP	2013	30	0.06	0.5	
5-Use	8-) Number of internet users per 100 inhabitants	7.038	1 487 978	AUP, ART/NIS survey	2013	21 143 237	BUCREP	2013	85	0.08	1.0	**0.083**
Digital access index= simple arithmetic average of the category indices of the five categories above												**0.356**
Note : (a) given the disparity between countries, a logarithmic scale was used to calculate this value: (LOG(223,6)-LOG(0.01))/(LOG(10000)-LOG(0.01)												

[7]Access, use of telecommunications services and perception of TRB

Source : 2014AUP, ART-NIS Survey

Categories of Digital Access Index values

The categories of DAI have 4 levels of values:

- ✓ High access. On a scale of 0 to 1, this concerns index values between 0.70 and 1;
- ✓ Important access. this group includes countries where access spans between 0.50 and 0.69;
- ✓ Medium access. This group comprises index values between 0.30 and 0.49;
- ✓ Poor access. This last level includes countries with a DAI less than or equal to 0.29.

The DAI value for Cameroon (0,355) ranks it among the countries with medium access. This result is very important in that it reflects a clear progression of digital access in Cameroon as against the previous years. Indeed in 2002, Cameroon had a 0.16 DAI. Therefore, there has been an evolution of more than twice the value of the DAI in ten years.

2.1.1.1. Analysis of the DAI

a) Contribution to index building

Examination of the table above shows some variables that need to be enhanced to improve the index. They are:

i. The number of fixed telephone subscribers per 100 inhabitants

This near-zero indicator (0.06) reflects the low level of connection to the fixed telephone in Cameroon.

ii. The Internet access cost

The calculation obtained from the survey shows that on average a user spends 9,700 FCFA per month for Internet access. This seemingly high rate is quite low compared to the gross national income per capita.

iii. International Internet bandwidth (in bits) per capita

iv. Number of broadband subscribers per 100 inhabitants

These two indicators which are actually quality indicators are at very low levels. For instance, the number of broadband subscribers per 100 inhabitants is 0.06 on a scale of 0 to 30.

v. Number of internet users per 100 inhabitants

Of an estimated population of just over 21 million people, there are only 1.5 million people who use the Internet.

Apart from these indicators which contribute to low DAI, some others nevertheless contribute to the growth of the DAI such as the number of cellular subscribers per 100 inhabitants. This tele density has improved with the multiplicity of telephone operators and the significant decrease in telephone communication costs over the past decade.

Table 25 : Contribution of variables to DAI building

Category	Variable	Contribution to DAI building
1-Infrastructure	1-) Number of fixed telephone subscribers per 100 inhabitants	↘
	2-) Number of cellular telephone subscribers per 100 inhabitants	↗
2-Affordability	3-) Internet access cost in percentage of the gross national income per inhabitant x100	↘
3-Education	4-) Adults literacy rate (in %)	↗
	5-) School enrolment, primary, secondary and higher levels (in %)	→
4-Quality	6-) Internationale Internet bandwidth (in bits) per inhabitant	↘
	7-) Number of bandwidth subscribers per 100 inhabitants	↘

5-Use	8-) Number of internet users per 100 inhabitants	↘

b) Digital Access Index in La Francophonie

La Francophonie comprises about fifty member or observer states and governments. Access to and use of ICTs for sustainable development and as a privileged tool to promote cultural and linguistic diversity is a key focus of the International Organization of La Francophonie (OIF). It is responsible for spearheading a cooperation policy in the domain through such operators as the Agence Intergouvernementale de la Francophonie (AIF) and the Agence universitaire de la Francophonie (AUF).

Analysis of the Digital Access Index in francophone countries shows a wide difference in the DAI from one country to the other. Those with high access are developed countries. African countries, particularly in sub-Saharan Africa (including Cameroon) had the lowest DAI values in 2002. In comparison with the value obtained in 2014, Cameroon could be ranked amongst middle-access countries, just before Gabon.

2.4.2. ICT Development Index (IDI)

2.4.2.1. Definition and relevance of the index

The ICT Development Index is a benchmark value (presented on a scale of 0 to 10) composed of 11 indicators. It aims at monitoring progress in the development of ICTs, both in the developed and developing countries. The IDI is divided into three sub-indices - access, use and skills - each reflecting different aspects and competence of the ICT development process.

The IDI developed by ITU establishes a ranking among 157 countries according to their level of access to ICTs, their use of ICTs and skills in this domain. The Index is widely recognized by governments, UN agencies and the private sector as the most accurate and unbiased measurement instrument of ICT development in different countries.

2.4.2.2. Calculation methodology

The IDI is a composite index combining 11 indicators grouped into 3 categories: access, use and skills

1- Access

The indicators in this subcategory are:

-The number of landlines per 100 inhabitants;
- Number of cellular phone subscribers per 100 inhabitants;
- International bandwidth (bit/s) per Internet user;
-Proportion of households with a computer;
-Proportion of households with Internet access at home;

Some of these indicators can be obtained from TRB and the others from the field survey;

2- Use

There are three indicators in this subcategory which are :

- The number of internet users per 100 inhabitants ;
- The number of fixed broadband Internet subscribers per 100 inhabitants
- The number of mobile broadband Internet subscribers per 100 inhabitants

These indicators can be obtained from the survey for the first, and TRB for the other two.

3- Skills

The three indicators of this subcategory are the following:

- The adult Literacy rate: estimated at 82.7% by the 2011 EDS-MICS survey.
-The secondary school enrollment rate: the school attendance net rate is calculated for the 12-18 age group. The outcome of the EES I2 survey provides a secondary school attendance net rate of 49.6%.
-The high-level enrollment rate:

This rate is derived from the number of students in 2012 in proportion to the higher-education age group (16-35 years).

2.4.2.3. Calculation of the index

a) Calculation of index components

The indicators were calculated using different sources of information. Some were obtained from data provided by administations under the scope of the index, others were obtained from the data collected during this study

Thus the following calculation formulas used in the IDI calculation table below:

- ✓ (1) = (2)/(3) ;
- ✓ The values (2) and (3) are obtained from the various sources listed in the « source » section ;
- ✓ The reference value (4) is the target value
- ✓ (5)= (1)/(4) ;
- ✓ The weighting factor (6) is the weight of each variable in the building of the category index or the weight of the latter in the building of the IDI
- ✓ (7) = ((5) x (6))/100 ;
- ✓ (8) = The Total ((7))x10 in each category
- ✓ **IDI = Total of the three categories of ((6) x (8))**

Table 26: Variables, categories and indicators used for calculating the IDI

Category	Variable	Value for Cameroon (1)	Numerator			Denominator			Benchmark value (4)	Indicator (5)	Wighting factor (%) (6)	Weighted indicator (7)	Category index (8)
			Value(2)	Source	Year	Value (3)	Source	Year					
1-Access	1) Number of landlines per 100 inhabitants	**4.12**	870 437	TRB	2013	21 143 236	BUCREP	2013	60	0.06	20	0.01	
	2-) Number of cell phone subscribers per 100 inhabitants	**74.09**	15 664 666	TRB	2013	21 143 237	BUCREP	2013	150	0.49	20	0.10	
	3-) International Internet bandwidth (in bits) per inhabitant	**223.62**	4 728 029 184	TRB	2013	21 143 237	BUCREP	2013	10000	0.47	20	0.09	
	Proportion of households with a computer	**11.80**		AUP, NIS/TRB survey	2014		AUP, NIS/TRB survey	2014	100	0.12	20	0.02	
	proportion of households with internet access at home	**6.70**		AUP, NIS/TRB survey	2014		AUP, NIS/TRB survey	2014	100	0.07	20	0.01	
	Category index										40		**2.43**
2-Use	1-) Number of internet users per 100 inhabitants	**7.04**	1487978	AUP, NIS/TRB survey	2013	21 143 239	BUCREP	2013	100	0.07	0.33	0.02	
	2-) Number of subscribers to broadband fixed internet per 100 inhabitants	**2.02**	427 204	OMT/TRB	2013	21 143 240	BUCREP	2013	60	0.03	0.33	0.01	
	2-) Number of subscribers to broadband mobile internet per 100 inhabitants	**0.69**	145 098	OMT/TRB	2013	21 143 241	BUCREP	2013	100	0.01	0.33	0.00	
	Category index										40		**0.37**
3-Skills	1-) Adult literacy rate	**82.70**		EDS-MICS	2011				100	0.83	0.33	0.28	
	2) Secondary school enrollment rate	**49.60**		MINESEC	2012				100	0.50	0.33	0.17	
	3-) Enrollment rate to higher education	**3.44**	250346	MINESUP	2012	7274284	BUCREP	2012	100	0.03	0.33	0.01	
	Category index										20		**4.52**

ICT DEVELOPMENT INDEX= Weighted total of category indices	**2.03**

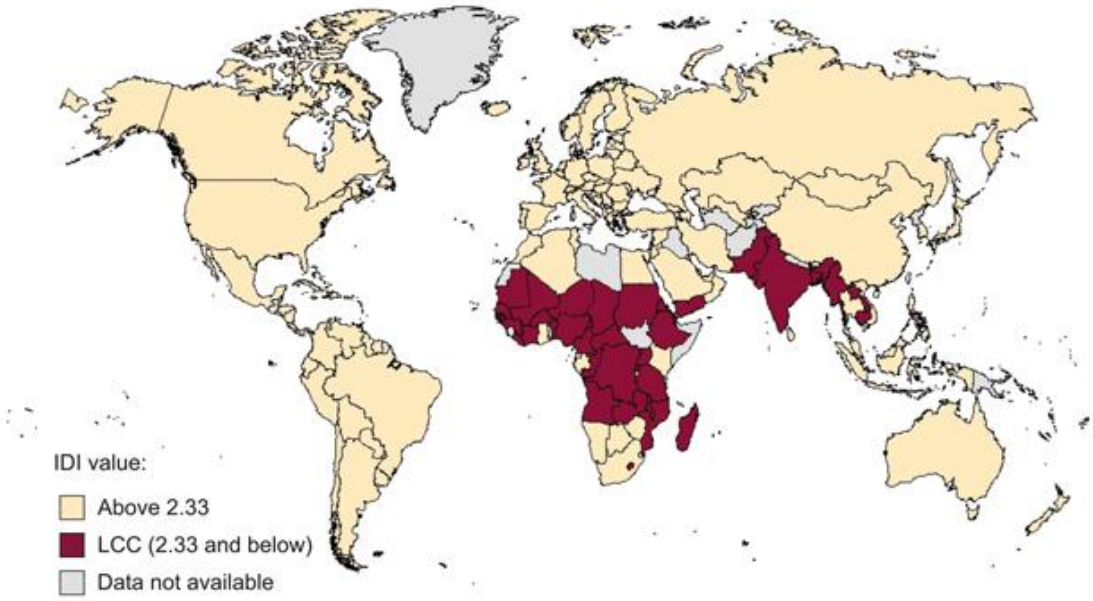
Source : 2014 AUP, TRB-NIS survey

2.4.2.4. Analysis of the IDI

According to the last three reports of ITU[8], the Republic of Korea is the most advanced global economy regarding ICTs, followed by the Nordic countries (Sweden, Iceland, Denmark, Finland and Norway).

The IDI calculated for Cameroon gives a value of 2.02, which is an improvement compared to the result obtained in 2011 (1.60). This is partly due to the increase of such indicators as access (number of cell phone subscribers per 100 inhabitants, ...) and skills (adult literacy and secondary school enrollment rates are in the upward trend). However, despite these developments, Cameroon is still among the "least connected" countries, which means, among the countries with an IDI less than or equal to 2.33.

Figure 1: Least connected countries (LCC), end 2012



Improvements can be made to enhance the quality of the indicator. These improvements require inter alia increased utilization indicators that are at very low levels compared to baseline values. Subscription to the broadband Internet (fixed and mobile) remains extremely low in Cameroon.

[8] The report is entitled “Measuring the information society”

CHAPTER 3: PERCEPTION OF THE SERVICES PROVIDED BY OPERATORS AND KNOWLEDGE OF TRB

3.1 PERCEPTION OF SERVICES PROVIDED BY OPERATORS

Knowledge of services by individuals

Knowledge of services provided by operators is very important to choose desired services. It depends on age groups. The youngest have a better knowledge because they are more interested in promotional offers than the older people. Only one in four people aged 80 or more is interested in such services, owing to the fact that in this age group, people are generally inactive and unresponsive to change in the domain of ICTs.

Awareness also differs according to the area of residence. Although the difference is not very significant, the proportion of people who know the services offered is lower in rural than in urban areas, especially in the 25-34 age group. This can be justified by the low rural access to ICTs. Knowledge of the services offered by operators is higher in the Adamawa, Littoral and West regions, where more than 4 out of 5 people aged less than 50 are interested, than in the East and North West regions where barely one in two people are interested. A paradox is highlighted in the Littoral where knowledge is substantially less in the city of Douala than in the rest of the region.

Table 67 : Proportion (in %) of people who are familiar with the services offered by operators according to the region and age group

	Age group					
	15-24	25-34	35-49	50-59	60-70	80 & +
Region under survey						
Douala	69.3	79.8	70.5	57.6	66.7	56.5
Yaounde	77.2	77.1	74.3	79.8	55.1	20
Adamawa	83.3	81.2	80.1	70.5	55.5	50.7
Centre	64.9	70.8	68.6	70.4	57.4	14.2
East	50.4	52.5	42	46	32.3	14.8
Far North	59.6	57.5	58.5	53.4	34.4	10.8
Littoral	82.8	83.7	87	74.8	71.1	42.9
North	65.3	70.8	72.2	55.2	64	44.1
North-West	53.8	42.4	41.8	39.5	29.8	10.5
West	83.6	85.3	84.8	87.9	74.7	39.9
South	71.5	62.7	65.1	58.7	46.5	28.8
South-West	66.7	67.1	61.8	65.8	62.9	9.6
Area of residence						
Urban	71.3	76	69.6	68.8	56.4	27.1
Rural	64.7	61.8	64.4	59.7	51.1	26.2
Total	**68.2**	**69**	**66.8**	**64.1**	**53.3**	**26.6**

Source : 2014 AUP, TRB-NIS Survey

Table 27 above shows that people of the urban strata are more familiar with all types of ICT services than those living in rural area. As for the level of knowledge of ICT services in the different regions, the number of people who know ICT services differs according to the service. Apart from the Far North region, which has a very low percentage of people knowing of ICT

services, all regions show considerable proportion of people knowing about ICT services, the largest being in Douala, Yaounde and in the South West region.

The call/reception and phone messaging are the most familiar services among the Cameroonian population, 96.8% and 66.2% respectively of the target population. Other services, especially via the Internet, are hardly known; and the divide between urban and rural areas in terms of knowledge of those services is very important.

Table 28: Proportion of people (in %) knowing about ICT consumer services provided by operators, according to the type of services

	Call or call reception	Internet	Call over the internet	Messaging over the internet	Telephone messaging	Money transfer/payment of bills via telephone	Money transfer /payment of bills over the internet	Other services
Region								
Douala	95.3	59.6	27.1	40.7	76.4	44.3	28.2	5.1
Yaounde	95.6	66.7	24.9	37.1	76.7	35.8	13.3	1.4
Adamawa	99.1	20.5	6.9	9.3	42.1	14.3	9.9	1.4
Centre	96.7	43.2	22.6	27.3	71.0	34.0	19.0	8.3
East	98.6	50.3	22.2	28.5	77.5	34.5	21.9	0.2
Far North	98.1	5.6	.8	1.1	22.5	2.2	0.6	2.5
Littoral	98.9	28.9	13.7	19.5	71.0	25.3	14.2	1.6
North	98.1	25.0	7.2	10.3	56.0	13.8	7.8	2.6
North-West	96.7	57.5	39.6	54.3	77.1	51.1	14.5	3.4
West	96.6	25.9	9.5	16.1	88.9	34.4	12.3	1.7
South	97.0	32.9	12.3	21.1	74.1	13.4	13.3	.4
South-West	92.6	54.7	31.9	43.0	82.1	34.5	21.1	2.2
Area of residence								
Urban	*96.7*	*52.4*	*23.0*	*34.4*	*73.3*	*36.8*	*20.1*	*3.3*
Rural	*96.8*	*22.0*	*10.4*	*13.1*	*58.4*	*17.8*	*7.2*	*2.3*
Lvel of education								
None	98.0	4.9	1.7	2.5	26.3	6.3	3.0	.4
Primary	96.8	17.6	7.3	10.4	60.6	16.9	5.7	3.1
Secondary	96.8	45.8	18.9	28.2	75.9	31.8	15.5	2.9
Higher	95.5	82.1	44.3	58.2	81.1	55.3	35.2	5.0
Total	**96.8**	**38.0**	**17.0**	**24.3**	**66.2**	**27.7**	**13.9**	**2.9**

Source : 2014AUP, TRB-NIS Survey

Across the country, close to 44.5% of the population is familiar with the services made available to clients ("customer service") in case of inconvenience in consuming telephony services.

Whatever the education level, the average proportion of people knowing about the services available to clients ("customer service") in case of inconvenience in consuming telephone services is higher among people living in urban areas, (61.1%) than those living in rural areas (28.4%). More than 5 in 10 people are aware of these services in Douala (73.2%), in Yaoundé (71.1%), and in the West (54.7%) and the South West (60.2%).

Considering the level of education, 84.7% of people with a higher level and 59.3% of those with secondary level are aware of these services. These proportions are lower for people who have a primary school education (29.6%) or have no level (7.2%)

Table 29: Proportion of people (in %) knowing about the services made available to clients ("customer service") in case of inconveniences in using telephony services, according to the level of education by region

	None	Primary	Secondary	Higher	**Combined**
Douala	36.5	58.1	75.2	93.9	**73.2**

Yaounde	28.6	46.8	72.5	79.7	**71.1**
Adamawa	13.3	34.7	66.7	93.3	**39.7**
Centre	7.5	32.5	57.2	90.2	**49.7**
East	12.1	27.4	58.4	85.9	**44.2**
far North	4.4	10.4	30.9	70.6	**13.2**
Littoral	6.6	32.0	57.8	86.0	**49.0**
North	5.3	21.5	41.8	90.4	**22.2**
North-West	5.9	25.5	50.9	77.2	**34.9**
West	19.7	33.9	67.8	82.7	**54.7**
South	10.3	22.8	39.7	68.9	**35.5**
South-West	31.4	36.7	66.0	86.2	**60.2**
Urban	***14.9***	***41.4***	***67.0***	***84.7***	***61.1***
Rural	***5.4***	***23.2***	***47.0***	***84.6***	***28.4***
Total	**7.2**	**29.6**	**59.3**	**84.7**	**44.5**

Source : 2014 AUP, TRB-NIS Survey

Satisfaction of users of ICT services

a) Individuals' satisfaction with telephony services in case of inconvenience

In Cameroon, nearly 52% of subscribers to mobile telephony knowing the customer service and who have used it are satisfied with the solutions provided. This proportion is 53.8% for fixed telephony.

Regardless of the type of phone used, subscribers in urban areas are relatively more likely to be satisfied with the solutions provided by the customer service for disruptions than those in rural areas.

Customers with mobile phone and/or landline living in the Far North, East, South and South-West are generally not satisfied with the solutions provided by customer services in case of inconvenience. These regions are therefore the commercial weaknesses of the telephony market in Cameroon.

Table 30 : Proportion of people (in %) satisfied with the solutions provided by the customer service in case of disruptions in telephony services

	Mobile telephone	Fixed telephone
Douala	50.5	54.0
Yaounde	59.6	58.0
Adamawa	55.3	58.6
Centre	57.2	54.4
East	46.7	39.9
Far North	40.2	100.0
Littoral	61.6	84.6
North	60.7	74.8
North-West	55.4	57.5
West	55.8	78.5
South	45.9	36.4
South-West	28.0	26.7
Urban	***52.9***	***55.2***
Rural	***49.5***	***44.5***
Total	**51.9**	**53.8**

Source : 2014 AUP, TRB-NIS Survey

a) Level of satisfaction of enterprises

Overall, 56% of companies using ICT services indicated they were satisfied. The proportions of primary and tertiary sector enterprises satisfied with the services rendered by the operators (80% and 58.4% respectively) are higher than that of the secondary sector (46.5%).

Depending on the type of company, private companies are more likely to be satisfied with the services rendered by the operators (58.5%) than public enterprises (49.4%).

Table 31 : Distribution of companies per level of satisfaction with the services rendered by operators and according to their sector of activity

	Very satisfied	Satisfied	Not satisfied	Poor service	Very poor service	No appreciation	Total
Primary	6.7	80.0	6.7		6.7		100.0
Secondary	8.1	46.5	30.2	11.6		3.5	100.0
tertiary	10.2	58.4	20.5	5.4	4.2	1.2	100.0
Private structures	*7.5*	*58.5*	*22.5*	*8.0*	*2.0*	*1.5*	*100.0*
Public structures	*13.0*	*49.4*	*23.4*	*6.5*	*5.2*	*2.6*	*100.0*
Total	**9.0**	**56.0**	**22.7**	**7.6**	**2.9**	**1.8**	**100.0**

Source : 2014 AUP, TRB-NIS Survey

Main problems in telephony/internet

a) Telephony issues

✓ In entreprises

In general, the main problem encountered by companies in using telephone services is the regular network interruption (64.4%), followed by poor quality transmissions and receptions (16.9%) and the high cost of communications (12.3%).

Table 32 : Proportion (in %) of the main problems encountered in the use of telephony services

	Regular network interruption	Poor quality emissions and receptions	High communication costs	Inoperative/unsatisfactory cutomer service	Other	Total
Primary	71.4	21.4	7.1			100.0
Secondary	63.2	17.1	9.2	3.9	6.6	100.0
tertiary	65.2	15.2	14.5	1.4	3.6	100.0
Private structures	*63.3*	*17.5*	*12.4*	*2.3*	*4.5*	*100.0*
Public structures	*67.8*	*15.3*	*11.9*	*1.7*	*3.4*	*100.0*
Total	**64.4**	**16.9**	**12.3**	**2.1**	**4.2**	**100.0**

Source : 2014 AUP, TRB-NIS Survey

✓ For individuals

Overall, people reported having faced two major problems in telephony services: no network and the difficulty of accessing it, if it exists at all. On average, 61.9% of people have had problems of network access, and 46.4% experienced an absence of network.

Table 33 Percentage of people who experienced difficulties while using telephony services, according to the type of problem

	Absence of network	Difficult network access	Difficult access to certain services of operators	Other difficulties related to telephony services
Douala	55.0	60.2	25.0	6.7
Yaounde	68.4	65.1	31.8	5.7
Adamawa	47.6	71.5	36.3	21.9
Centre	45.1	57.5	31.3	18.1
East	47.6	63.0	43.5	12.2
far North	21.6	47.1	12.3	1.8
Littoral	31.6	67.4	26.0	3.8
North	55.2	55.0	30.7	2.4
North-West	45.5	74.1	37.4	11.7
West	47.9	70.7	23.1	4.8
South	50.9	59.0	32.5	3.7
South-West	51.4	71.0	40.2	11.9
Urban	***49.9***	***63.3***	***30.1***	***8.2***
Rural	***42.9***	***60.6***	***26.9***	***7.2***
Total	**46.4**	**61.9**	**28.5**	***7.7***

Source : 2014 AUP, TRB-NIS survey

Almost three Cameroonians in four (73 percent) using mobile phone reported having encountered difficulties to accede to the network. 70% have encountered network access difficulties in the use of fixed telephone. As for the lack of network, nearly 54% of respondents reported having suffered from it in the use of mobile phones and 63% in the use of fixed telephone.

Table 34 : Percentage of individuals who encountered problems while using telephony services, according to the type of telephone used and issues raised

	Absence of network	Difficult network access	Difficult access to certain services of operators	Other telephone services
Mobile Telephone	53.9	72.9	33.3	9.3
Fixed telephone	62.6	70.3	38.7	9.7

b) Source : 2014 AUP, TRB-NIS Survey

c) Internet issues

✓ In entreprises

In terms of Internet access, 65% of businesses (all sectors) reported to have suffered from network interruption. Public structures are the main victims (69%). Nearly 22% of businesses suffered from poor quality transmissions and receptions. Only 8.6% of companies say they have encountered difficulties related to the high cost of communications. Less than 2% of businesses (all sectors) experienced discourtesy from customer service.

Table 35 : Major problems encountered in using internet services

	Regular network interruption	Poor quality transmission and reception	High cost of communications	Inoperative/unsatisfactory customer service	Other	Total
Primary	64.3	28.6	7.1			100.0
Secondary	63.0	24.7	6.8	1.4	4.1	100.0
Tertiary	65.6	20.0	9.6	1.6	3.2	100.0
Private structures	*64.0*	*21.3*	*9.0*	*1.7*	*3.9*	*100.0*
Public structures	*69.0*	*23.8*	*7.1*			*100.0*
Combined	**65.0**	**21.8**	**8.6**	**1.4**	**3.2**	**100.0**

Source : 2014 AUP, TRB-NIS Survey

✓ Among individuals

In rural areas, almost all of the individuals who used the Internet (90%) reported having suffered from lack of network. Although quite large, the proportion is relatively low in urban areas (67.5%). Throughout the country, over 78% of people said they encountered problems of access to the Internet and 48.7% of Cameroonians have had difficulties in accessing certain services offered by operators. The southern region has the least number of people who reported having been victims of lack of Internet network compared to the largest proportion (86%) registered in the city of Douala.

Table 76 : Percentage of people who encountered difficulties in using internet services per type

	Absence of network	Difficult network access	Difficult access to certain services of operators	Other telephone services
Douala	86.0	77.4	32.3	12.9
Yaounde	60.8	76.0	56.8	11.2
Adamawa	67.3	67.3	100.0	32.7
Centre	51.8	75.4	36.6	28.8
East	81.2	93.7	68.6	12.2
Littoral	47.6	94.2	88.3	11.7
North	74.1	100.0	74.1	25.9
North-West	66.7	55.6	88.9	.0
West	76.6	82.4	23.4	.0
South	41.8	83.6	58.7	8.5
South-West	77.0	85.5	53.9	14.5
Urban	***67.5***	***76.5***	***49.9***	***14.2***
Rural	***90.0***	***93.0***	***38.8***	***1.2***
Total	**70.0**	**78.3**	**48.7**	**12.8**

Source : 2014 AUP, TRB-NIS Survey

3.1. PERCEPTION OF TRB

Knowledge of TRB

- ✓ **By individuals**

At the national level, only 12 out of 100 people have heard of TRB. The rate is nearly 19% for people living in urban areas, against only 6.3% in rural areas. The area of Yaounde accounts for the largest proportion of people who have heard of TRB (41%). On the contrary, only 3% of the population of the Far North region has ever heard of TRB.

Table 87: Proportions of individuals who have heard of TRB or know about its mission, according to the level of education

	None		Primary		Secondary		Higher		Total	
	Have heard of TRB	Know about the mission of TRB	Have heard of TRB	Know about the mission of TRB	Have heard of TRB	Know about the mission of TRB	Have heard of TRB	Know about the mission of TRB	Have heard of TRB	Know about the mission of TRB
Douala	0.0	0.0	6.6	2.0	9.8	3.9	38.7	18.4	13.7	5.8
Yaounde	14.3	14.3	15.8	1.6	27.7	8.7	70.6	40.8	40.8	18.9
Adamawa	0.0	0.0	3.7	1.0	12.0	5.1	58.7	45.1	7.4	3.9
Centre	4.2	0.0	8.6	1.6	18.6	5.0	65.3	36.4	18.9	6.5
East	1.3	0.0	3.4	0.3	9.2	0.7	50.4	27.2	8.3	1.8
Far North	0.2	0.0	3.7	0.0	6.3	1.6	56.9	41.7	3.1	0.7
Littoral	7.7	7.8	3.1	0.0	12.2	2.2	42.4	25.2	11.3	3.5
North	1.0	0.4	7.5	1.3	15.5	6.3	80.8	22.7	8.3	2.6
North-West	1.4	0.0	4.4	1.2	5.9	1.2	28.1	10.1	6.1	1.6
West	0.0	0.0	3.0	0.0	6.6	0.5	37.3	10.4	7.2	1.0

South	7.6	0.0	8.5	1.3	18.8	5.8	55.5	29.5	17.5	5.6
South-West	0.0	0.0	3.8	1.1	9.2	1.3	23.4	7.1	10.3	2.4
Urban	***1.9***	***1.6***	***7.4***	***1.2***	***14.6***	***4.4***	***52.7***	***28.5***	***18.7***	***7.7***
Rural	***0.5***	***0.0***	***4.4***	***0.7***	***9.7***	***2.2***	***38.1***	***13.8***	***6.3***	***1.4***
Total	**0.8**	**0.3**	**5.5**	**0.9**	**12.7**	**3.6**	**50.4**	**26.1**	**12.4**	**4.5**

Source : 2014 AUP, TRB-NIS Survey

People who have heard of TRB are mostly those with a high education level. At the national level, 50.4% of people with a higher level of education are aware of the existence of TRB. In 7 out of 12 survey areas, more than half people of this profile have heard of TRB. This proportion reaches 70.6% in Yaounde. However, only 12.7% of those with secondary education and 5.5% of those with primary education have heard of TRB. These proportions remain high in Yaounde.

Among those who have heard of TRB, a majority does not know its role. Overall, only 5% of people know its role.

According to the area of residence, 8% of urban people know the role of TRB against only 1% in rural areas. It is in the Yaounde area that most people know the role of TRB, with a proportion of 19%. In contrast, the proportion is very low in the Far North and West regions with less than 1 out of 100 people.

Awareness of the role of TRB increases with the level of education of the population. The proportion of people who know its role varies from less than 1 in 100 for people with at least primary education to 26% for higher educated individuals. In rural areas, 14% of people with a higher level of education know the role of TRB. In the Adamawa, Centre and Far North regions, just over one in three people with a higher level of education know the role of TRB. In the West, Southwest and Northwest regions, this proportion is almost zero. Less than one in 10 with at least secondary education knows the role of TRB.

The persons interviewed know about the role of TRB without knowing precisely its activities. Overall, less than 2% of people know about the activities of TRB. Resolution of disputes between operators and sanctions meted out to them for non-compliance are the less known actions of TRB, this regardless of the region or area of residence.

Whatever the action undertaken by TRB, less than 1 out of 100 people in rural areas and 2 to 3% of people in urban areas know it. It's in Yaounde area that the proportion of people who know precisely the activities of TRB is the highest, whatever the activity. Indeed, just over 7% of people know that one of the roles of TRB is to ensure improved quality of services offered by ICT operators. On the contrary, although a metropolis, the situation in Douala is not so different from that of some regions like the Centre (except Yaoundé) and Adamawa.

Table 98: Proportion of people who knowing about TRB activities

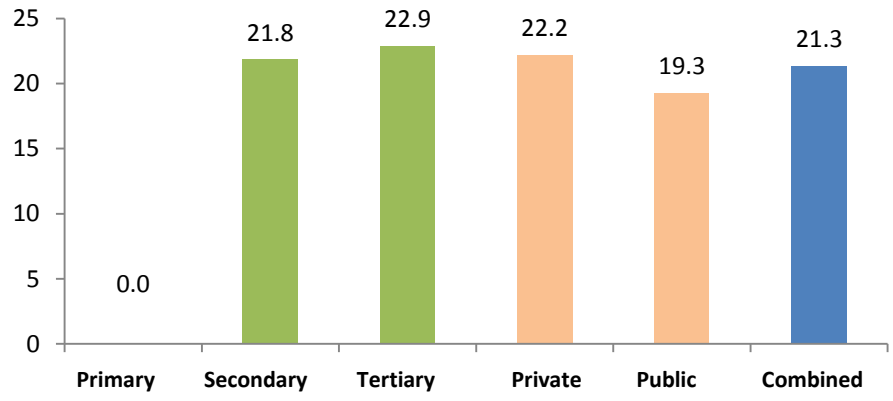
	Protection of subscribers vis-à-vis the operator	Improvement of quality of services	Improvement of quality of network coverage	Settlement of disputes between operators	Sanctions to operators in case of non-compliance	Others
Survey areas						
Douala	3.2	3.3	3.3	2.6	2.5	1.0
Yaounde	5.8	7.2	5.3	3.2	4.2	0.6
Adamawa	2.3	2.8	2.8	2.3	1.8	0.8
Centre	2.9	3.0	2.9	2.9	2.4	1.0
East	0.7	0.8	0.8	0.6	0.6	0.0
Far North	0.3	0.0	0.1	0.0	0.0	0.0
Littoral	1.3	1.4	1.6	1.0	0.6	0.3
North	1.4	1.3	1.7	1.0	0.9	0.0
North-West	0.4	0.4	0.9	0.9	0.1	0.0
West	0.2	0.2	0.2	0.1	0.1	0.0
South	1.9	1.4	2.9	0.4	0.4	0.1
South-West	14	1.4	1.2	0.9	0.8	0.1
Area of residence						
Urban	*3.0*	*3.3*	*3.1*	*2.2*	*2.1*	*0.6*
Rural	*0.7*	*0.5*	*0.7*	*0.5*	*0.4*	*0.1*
Level of education						
None	*1.0*	*2.0*	*1.0*	*2.0*	*2.0*	*2.0*
Primary	*1.4*	*1.5*	*1.2*	*1.5*	*1.7*	*2.3*
Secondary	*1.4*	*1.5*	*1.6*	*1.8*	*2.0*	*2.8*
Higher	*1.4*	*1.3*	*1.3*	*1.6*	*1.6*	*2.2*
Total	**1.8**	**1.9**	**1.9**	**1.3**	**1.2**	**0.3**

Source : 2014 AUP, TRB-NIS Survey

Despite the fact that the vast majority of people with a higher level of education know the role of TRB, those who know precisely what TRB is doing are few. Regardless of the activity, less than 2% of people with a higher level of education know it. Overall, the proportion of people who know the role of TRB without stating one precisely increases with the level of education.

The companies who know the activities of TRB towards streamlining the telecommunications industry are few. Only 21.3% say they know it.

Graph 3: Percentage by activity of enterprises that know of the action of TRB towards streamlining the telecommunications sector



Source : 2014 AUP, TRB-NIS Survey

Almost no company in the primary sector knows about the role of TRB. However, in the secondary and tertiary sectors, approximately 22% and 23% respectively know it. This proportion is virtually the same regardless of the sector activity (public[9] or private) of these companies.

Appreciation of TRB activities

- ✓ **By individuals**

People mostly think that TRB does not fulfill its missions in an acceptable manner. For about 90% of people, TRB plays its role at most moderately. This assessment is generally the same regardless of the area of residence and for most regions. In the East, West and South regions, 4 in 10 think that TRB does not play its role. Except for the North West and Adamawa where the activities undertaken by TRB are relatively better appreciated, more than a quarter of people in other regions believe that TRB does not fulfill its missions effectively.

[9] Public administrations are decentralised services (divisional), central services perfectly know about TRB and its mission.

Table 109: Distribution of people according to their level of appreciation of the activities undertaken by TRB

	Does not play its role at all	Faintly	Fairly	Fully	Total
Survey area					
Douala	31.8	27.8	30.4	10	100
Yaounde	24.7	32.6	36.6	6.1	100
Adamawa	25.8	23.1	31.8	19.4	100
Centre	18.6	27.2	40.7	13.5	100
East	43.8	28.1	22.6	5.6	100
Far North	29.4	36.8	25.4	8.3	100
Littoral	30.4	25.5	35.3	8.8	100
North	16.2	33.3	36.5	14	100
North-West	24.7	17.1	40.2	18	100
West	34.2	34	23	8.7	100
South	40.1	28.4	22.4	9	100
South-West	28.5	30.1	28.6	12.8	100
Area of residence					
Urban	*28.5*	*28*	*32.6*	*10.8*	*100*
Rural	*27.1*	*31.3*	*30.4*	*11.3*	*100*
Total	**27.8**	**29.6**	**31.5**	**11.1**	**100**

Source : 2014 AUP, TRB-NIS Survey

In the Centre and North regions, only less than one in five think that TRB does not play its role and just over 13% think it does at least good enough.

✓ **By entreprises**

Overall, for the majority of companies, the actions of TRB are ineffective. Only 17% of companies think they are good while 23% think they are bad. Appreciation of the activities of ART by companies depends on the sector of activity to which they belong. Only 16% of private companies think TRB's action is good and for 20% it is poor. One public administration in three says the activities are ineffective.

Table 40: Distribution of enterprises by level of appreciation of the actions of TRB according to the business line

	Good	Fair	bad	NSP	Total
Primary					
Secondary	21.1	52.6	21.1	5.3	100.0
tertiary	15.4	61.5	23.1		100.0
Private entreprises	15.6	62.2	20.0	2.2	100.0
Public administrations	20.0	46.7	33.3		100.0
Total	**16.7**	**58.3**	**23.3**	**1.7**	**100.0**

Source : 2014 AUP, TRB-NIS Survey

Expectations

✓ **Of individuals**

The expectations of the population vis à vis TRB are diverse. The prevailing concern, whatever the region or area of residence is the improvement of the quality of network coverage by the different operators. Overall, slightly more than three out of four expressed this expectation. The proportion varies from 64.6% (Far North) to 87.0% (Adamawa). It was voiced in almost the same proportions in urban and rural areas, or an average of three out of four people.

Unlike the Douala area where this expectation is overriding, improving the quality of services overcomes other expectations in the Yaounde area with 81.6% of people just like in some areas like the Adamawa, North-West and South-West, where four out of five people want this quality to be enhanced. The Far North is the region where people least expect TRB to improve the quality of services.

With a 12-point difference, urban populations need more an improvement of the quality of services than those in rural areas. The trend is the same in terms of the need for consumer protection against operators but this time with 8 points difference between urban and rural areas.

Table 111: Proportions of individuals according to their expectations from TRB

	Protection of consumers against the operator	Improvement of the quality of service	improvement of the quality of network coverage	Sanctions to operators for non-compliance
Douala	58.2	65.9	73.3	37.0
Yaounde	68.1	81.6	74.1	48.2
Adamawa	76.7	84.3	87.0	67.2
Centre	48.8	63.7	72.3	39.0
East	39.1	60.5	76.1	41.9
Far Nord	13.7	20.5	64.6	4.1
Littoral	49.6	60.4	80.3	22.8
North	74.7	74.2	81.1	60.3
North-West	74.9	83.4	86.8	43.7
West	68.2	71.4	79.6	52.2
South	48.6	57.4	81.1	27.2
South-West	62.6	81.7	86.2	55.7
Urban	***58.8***	***70.4***	***75.3***	***42.3***
Rural	***51.2***	***58.0***	***78.3***	***36.8***
Total	**54.9**	**64.1**	**76.9**	**39.5**

Source : 2014 AUP, TRB-NIS Survey

The need for protection of subscribers vis à vis operators is highly expressed in the Adamawa, North and Northwest by about three quarters of the populations concerned, and much less required in the Far North region (13.7%).
People are least interested in sanctions to operators for non-compliance whatever the region or area of residence. Overall only 39.5% of people stated this expectation. The populations of the Adamawa, North, West and South-West regions are those who mostly expressed this expectation, compared to the Far North, where only 4.1% of the population did.

- ✓ **By administrations/enterprises**

Enterprises do not have the same expectations as the population. Whatever the industry, the most recurrent demands are the reduction or even cancellation of communication costs, regulation of prices to satisfy customers, better national network coverage and better quality of telecommunications services. Public administrations and the sector companies are relatively less likely to express expectations.

Table 42: Proportions of enterprises according to their expectations from TRB

	Primary	Secondary	tertiary	Private	Public	**Total**
Participation in the opening of internet and telephone network to the public	68.8	75.9	61.9	74.5	51.2	**67.7**
Reducing/cancelling telephone and internet communication costs	81.3	89.7	78.4	89.2	66.7	**82.6**
Satisfaction of customers' expectations through price regulation	87.5	80.5	78.4	81.9	75	**79.9**
Better national network coverage	87.5	90.8	76.7	84.3	75	**81.6**
Promoting enhanced development of infrastructures and universal access	75	72.4	65.3	74.5	56	**69.1**
Enhanced quality of telecommunication services	87.5	88.5	71.6	84.3	61.9	**77.8**
Ensure the security of systems through safety audits	68.8	71.3	58	69.6	47.6	**63.2**
Listening to consumer associations	62.5	58.6	54	56.9	56	**56.6**
Other expectations	0	3.4	1.7	3.4	1.2	**2.8**

Source : 2014 AUP, TRB-NIS Survey

CONCLUSION ET RECOMMENDATIONS

CONCLUSION

The main objective of the survey was to produce a set of relevant indicators to gain visibility on the access, usage and perception of electronic communications services among consumers in Cameroon, and the calculation of the Digital Access Index (DAI) and the ICT Development Index (IDI). Elements to this survey were offers in terms of ICTs, behaviors and attitudes of ICT consumers, and finally the perception people have of the role of TRB in the telecommunications landscape in Cameroon.

The study was carried out nationwide, both in urban and rural areas. The observation units consisted of households and businesses. The survey yielded the following results:

- 11.8% of households have a computer and 6.7% have internet connection at home, which is an improvement compared to the 2011EDS-MICS results that showed 7.4% for computer ownership and 2.4% for connection to the internet. However, the space analysis of these two indicators revealed a digital divide between urban and rural areas. Actually, possession of computers by households in rural areas was 3.3% against 20.7% in urban areas. For Internet access at home, it is 1.4% in rural areas against 12.3% in urban areas.
- Men use more communication tools that women, regardless of the device. The differences between the proportions of men and women using a computer and the Internet network are approximately nine points.
- Communication tools such as fixed or mobile phone, computer, internet are much more used in urban areas. This use is closely linked to the level of education, which means, the more educated we are the more likely we are to use them. The gap widens further when we go from the mobile phone to the computer and then to the Internet. Despite insufficient national network coverage, few people mentioned the lack of network as a reason for not using the phone. The use of the internet in community access centers is very low. Similarly, internet by phone is not yet common among consumers.
- Concerning companies, the private sector is plugging in more rapidly than the public sector. Indeed, 89% of private companies have an Internet connection against 46.5% in the public sector. In terms of usage, the Internet connection is used primarily for messaging. An even larger gap is observed in the possession of mobile phones. The possession of a website, intranet or extranet is still limited in enterprises, especially in the public sector
- The DAI of Cameroon is 0.356, reflecting progress towards achieving the objective of the ECSD, that is moving from 0.16 in 2002 to 0.50 in 2022. Concerning the IDI, it stands at 2.03 against 1.60 in 2011, which is a significant improvement.
- TRB is not yet appropriately visible to the public, less than one in five have heard of TRB and less than one in 10 knows its role.

RECOMMENDATIONS

In light of these results, it is clear that Cameroon made significant progress in accessing ICTs. However, the digital divide between urban and rural areas is still tangible and consumers do not fully use the potential of ICTs. Therefore actions must be taken by the actors of the ICT sector to address the situation, amongst which:

- ✓ Bridging the digital divide by improving the level of access in rural areas through the implementation of Decree No2013/0398/PM of February 27, 2013 on the modalities for achieving universal service and the development of electronic communications in Cameroon. Enacting the decree will enable to speed up coverage in rural areas, with special focus on poor people's access with the funding from the Special Telecommunications Fund (SFT);
- ✓ *Reducing electronic communications rates in all market segments.; which calls for further opening up of the Cameroonian market to new operators to promote heightened competition;*
- ✓ *Trainings on the opportunities of the Internet for enterprises, provided by employer organisations and actors of the ICT sector. In fact, enterprises use the Internet mostly for messaging, which is just a very partial use of the potential of this communication tool.*
- ✓ *Producing the IDI and the DAI regularly for spatial and temporal comparisons. A sound and effective methodology for calculating the average cost of Internet access must be worked out and implemented;*
- ✓ *Promoting the development of an industry of content;*
- ✓ *Promoting the intranet in private and public administrations;*
- ✓ *Devising and implementing a communication strategy to promote the image and role of TRB amongst the population in general and consumers in particular; and working towards meeting people's expectations of improved quality of service and network coverage by industry players.*

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APPENDICES

Appendix 1: additional tables

Table 43 : Summary of indicators contained in the TOR

Objectives	Indicators	Value	Year
Assessing the level of penetration of telecommunication services (telephony, internet, intranet, interphone, etc.) in households and enterprises (public and private)	1. % of households with at least one telephone (fixed, CTphone-CDMA, mobile)	28.5	2014
	2. % of households with only a landline	4.6	2004
	3. % of households without a fixed telephone (mobile phone only)	25.8	2014
	4. % of households with both a fixed line and a mobile cell phone	19	2014
	5. % of households with a computer	11.8	2014
	6. % of households with internet connection at home	6.7	2014
	7. % of households with internet access per type of access (narrowband, broadband)		
	8. % of enterprises with internet access	76.5	2014
	9. % of companies with a web site	40.6	2014
	10. % of companies with interphone service	39.9	2014
	11. % of households with a radio set	59.3	2014
	12. % of households with a television set	57.3	2014
	13. % of households with access to electricity	64	2014
Identifying the main uses of telecommunication services in households and enterprises	14. Measuring the proportion of individuals who used internet connection (from any location) in the last 12 months	16.2	2014
	15. Proportion of individuals who used a computer (from any location) in the last 12 months	21.2	2014
	16. Proportion of individuals who used the internet (any locations) during the last 12 months	16.2	2014
	17. The reasons for using/not using the internet in the past 12 months		
	18. Internet activities undertaken by individuals in the last 12 months (from any location)	Table 44	2014
	19. Identifying and measuring the proportion of internet-based activities		
	20. Identifying internet activities of the past 12 months (information, mail sending and reception, various downloads, banking services, commercial services, learning etc.)	Table 44	2014
	21. Proportion of people using a mobile cell phone	78.9	2014
	22. Frequency of individual use of the internet over the past 12 months (from any locations)	Table 45	2014
	23. Average number of computers per household		
	24. Assessing the average number of internet-connected computers per household		
	25. Average number of internet-connected computers per company	Table 20	2014
	26. Time slots for the use of the internet in one day		
	27. Measuring the proportion of business activities via the internet	Table 22	2014
	28. The main internet connection places (home, cyber café, workplace, etc.) of household members in the past 12 months	Table 45	2014

Assessing the perception of the quality of telecommunication services, the final spending of users of those services and the level of awareness of TRB role and identify the main problems experienced by the consumers	29. Awareness of services (telephony and/or internet) offered by Internet Access Providers and/or telephone operators	Table 26	2014
	30. Level of satisfaction of services rendered by those providers	Table 30	2014
	31. Monthly share of telephony spending on the total household expenditure		
	32. Monthly share of internet service spending on the total household expenditure		
	33. Average household consumption expenditure for telephony services per day, per week or per month		
	34. Average household monthly consumption expenditure for the internet		
	35. % of households having encountered at least one problem during the last 7 days in using telephony services	Table 33	
	36. % of households knowing about the services made available to clients « customer service ») in case of inconvenience experienced in using telephony services	44.5	2014
	37. % of households having solicited customer services for an inconvenience		
	38. Average company monthly consumption expenditure for telephony		
	39. Average company monthly consumption expenditure for the internet		
	40. % of enterprises having experienced at least an inconvenience in the last 7 days		
	41. Main problems encountered in telephony services	Table 31	2014
	42. % of households knowing about TRB	Table 36	2014
	43. % of households aware of the role of TRB	Table 36	2014
	44. Level of appreciation of TRB activities	Table 37	2014
	45. Expectations with regard to TRB policy	Tables 40 and 41	2014
	46. Number of sets (processor speed : output rate)		
	47. DAI (Digital Access Index)	0.355	2014
	48. Classification of networks depending on the bandwidth		
Appraising the two synthetic indicators necessary for international benchmarking	49. ICT Development index (IDI)	2.02	2014
	50. Digital access index	0.355	2014

Source : 2014AUP, TRB-NIS Survey

Table 44 : Proportion of individuals who used the internet, according to the access used

	Wired connection				Wireless connection			
	RTC	**ADSL**	**Optical fiber**	**WIFI**	**WIMAX**	**GPRS/ EDGE**	**CDMA**	**VSAT (SOHO)**
Combined	10.7	20.2	8.7	13.8	5.2	20.2	23.9	.7
Urban network	11.1	20.6	9.1	13.6	4.7	19.0	25.3	.8
Rural area	7.6	16.9	6.2	14.7	8.2	28.5	13.6	.0
Douala	21.5	40.3	5.3	11.6	.3	21.8	35.9	.3
Yaounde	1.3	8.8	19.0	15.6	8.2	7.7	26.5	.4
Adamawa	9.4	35.9	3.6	14.1	3.5	51.4	2.3	.0
Centre - Yaounde	6.0	12.1	8.7	33.1	8.3	15.2	17.7	.7
East	11.3	71.0	.0	4.2	1.0	19.6	20.0	.0
Far- North	.0	.0	.0	.0	4.8	66.4	.0	.0
Littoral - Douala	7.9	24.7	6.3	2.4	1.6	32.9	28.7	.0
North	2.2	35.9	4.2	.0	.0	25.4	46.9	.0
North-West	.0	.0	.0	16.5	9.1	37.9	.0	.0
West	17.0	2.7	.0	7.2	8.0	10.9	17.0	.9
South	14.2	10.8	14.3	11.6	.0	13.3	3.6	3.6
South-West	23.7	15.4	3.8	18.9	7.8	34.9	13.9	3.1

Source : 2014 AUP, TRB-NIS Survey

Table 45 : Proportion of individuals who used the internet, by activity

	Proportion of individuals who used the internet, by activity													
	Getting information about goods and services	Getting information about health or health services	Getting information about general government organisations	Interact with general government organisations	Sending or reveiving electronic mails	Internet telephony/VoIP	Posting information or instant messages	Buying or ordering goods or services	Banking services on the internet	Educational or learning activities	Using or downloading video or electronic games	Downloading movies, images, watching television or video listening to radio or music	Downloading software	Reading or downloading newspapers, magazines or books online
Combined	**40.6**	**20.3**	**20.6**	**6.8**	**82.4**	**21.2**	**60.9**	**5.5**	**5.0**	**52.4**	**27.1**	**45.1**	**26.7**	**36.2**
Urban area	41.1	19.7	20.5	6.8	84.1	21.5	63.0	5.7	5.2	52.0	26.6	44.5	26.2	37.0
Rural area	36.6	24.3	21.3	7.2	70.0	19.2	46.2	4.3	3.5	55.1	30.5	49.3	30.1	30.2
Douala	35.9	14.4	8.6	2.5	90.2	23.5	55.9	6.6	3.3	34.9	21.0	42.7	21.5	28.6
Yaounde	47.0	22.5	28.4	11.3	85.8	26.1	78.5	5.0	7.7	61.6	27.2	41.3	32.2	42.4
Adamawa	28.6	20.5	32.2	3.5	78.3	3.6	66.5	.0	5.9	46.6	56.9	55.1	38.0	43.8
Centre - Yaounde	61.2	20.0	24.8	10.2	64.1	23.4	48.0	12.6	9.0	48.4	39.5	62.1	33.9	39.3
East	35.3	16.6	12.4	7.3	66.8	16.8	63.8	.0	2.1	68.6	13.4	42.7	31.1	40.7
Far- North	19.2	9.6	9.6	.0	56.9	.0	28.4	.0	.0	56.9	19.2	62.3	18.8	32.9
Littoral - Douala	45.8	25.8	29.8	8.8	84.8	13.6	56.9	2.4	4.0	56.2	33.7	38.4	35.2	44.8
North	33.9	19.0	25.4	8.4	72.5	8.4	31.7	4.2	.0	68.3	33.9	44.3	19.0	32.3
North-West	12.7	12.7	14.5	9.1	87.4	16.2	49.0	5.4	7.2	72.8	36.2	45.6	27.3	21.7
West	59.8	36.6	29.4	.9	74.9	15.3	51.8	3.6	.0	31.1	22.3	50.8	13.5	44.5
South	28.4	8.0	11.6	3.6	67.1	10.7	45.2	4.5	9.0	55.7	28.6	46.1	39.8	35.9
South-West	25.5	24.1	18.2	7.4	91.1	27.7	64.8	7.3	4.3	67.8	25.8	39.5	22.1	28.2

Source : AUP, TRB-NIS 2014 Survey

Table 46 : Use of ICTs according to gender and age

	Combined	Gender		Age		
		Men	Women	15 - 24	25 - 44	45 and +
Proportion of individuals having used a mobile phone	79.0	84.2	74.4	76.3	84.8	74.7
Proportion of individuals having used a computer	21.2	25.9	17.0	29.6	21.2	10.3
Proportion of individuals having used the internet	16.1	20.4	12.3	21.3	17.5	7.3
Location of internet use						
Home	46.9	48.1	45.1	42.1	50.4	49.1
Workplace	22.8	25.5	18.8	3.7	33.1	55.7
Place of study	16.3	17.3	14.8	25.3	10.7	1.8
Another person's home	7.3	7.5	7.0	7.7	7.0	6.8
Community internet access centre	2.9	3.5	2.1	3.7	2.2	2.7
Commercial internet access facility	62.5	59.3	67.3	69.9	60.4	40.8
Through mobile phone (any locations	23.2	27.2	17.2	26.4	23.1	8.5
Through other mobile sets (any locations)	5.0	6.4	2.9	4.7	5.5	4.6
Frequency of use of the internet						
At least once a day	31.7	33.9	28.4	23.9	37.4	37.8
At least once a week but not every day	45.0	45.3	44.5	50.4	41.7	34.3
Less than once a week	12.2	10.5	14.8	15.4	9.3	11.6
Less than once a month	8.2	6.5	10.9	6.6	9.2	11.6
Activity on the internet						
Getting information on goods and services	40.7	45.4	33.8	32.1	46.4	51.5
Getting information on health or health services	20.4	20.0	20.9	14.9	23.9	27.4
Getting information on general government organisations	20.7	24.5	15.0	13.2	24.7	34.1
Interact with general government organisations	6.9	7.5	5.9	2.9	7.6	19.4
Sending or receiving electronic mails	82.7	81.2	85.1	77.4	86.2	86.7
Internet telephony /VoIP	21.3	22.3	19.8	16.9	25.8	19.6
Posing information or instant messages	61.1	59.7	63.2	60.2	63.0	54.7
Buying or ordering goods or services	5.6	7.0	3.4	2.2	8.0	8.5
Internet banking	5.0	6.4	3.1	2.8	6.6	6.9
Educational and learning activities	52.5	51.2	54.5	55.9	51.5	42.0
Using or downloading video or electronic games	27.1	33.7	17.3	36.6	22.4	8.5
Downloading movies, images, watching TV or video, listening to radio or music	45.2	49.8	38.3	56.7	40.1	19.0
Downloading software	26.8	32.6	18.0	24.5	29.5	24.1
Reading or downloading newspapers, magazines or books online	36.3	40.5	30.0	28.6	41.0	46.4

Source : 2014 AUP, ART-NIS Survey

Table 47 : Use of ICTs according to the level of studies

	Combined	None	Primary	Secondary	Higher
Proportion of individuals who used a mobile phone	79.5	55.1	74.4	88.1	98.6
Proportion of individuals who used a computer	21.4	.8	3.6	28.1	79.0
Proportion individuals who used the internet	16.3	.5	1.7	18.9	74.4
Location of internet use					
Home	46.6	14.0	39.7	37.9	57.3
Workplace	22.7	13.6	16.9	14.4	32.4
Place of study	16.3	.0	.0	14.0	20.1
Another person's home	7.3	.0	2.8	7.0	8.1
Community internet access facility	2.9	.0	4.5	3.5	2.1
Commercial internet access facility	62.3	55.6	62.4	59.9	64.9
Through a mobile phone (any locations)	23.1	16.9	14.7	22.2	24.5
Through other mobile sets (any locations)	5.0	.0	1.9	2.7	7.8
Frequency of use of the internet					
At least once a day	31.5		20.4	24.8	40.1
At least once a week but not every day	44.8	41.5	45.6	44.9	44.3
Less than once a week	12.2	28.1	11.0	15.6	8.5
Less than once a month	8.3	30.4	15.5	11.0	4.4
Activities on the internet					
Getting information on goods and service	40.6	16.9	34.9	35.4	47.1
Getting information on health and health services	20.3	14.0	16.7	16.0	25.6
Getting information on general government organisations	20.6	14.0	8.6	14.9	28.0
Interacting with general government organisations	6.8	14.0	2.5	4.7	9.5
Sending or receinving electronic mails	82.4	83.1	74.3	78.2	87.4
Internet telephony /VoIP	21.2	14.0	14.6	14.1	29.2
Posting information ot instant messages	60.9	14.0	45.1	54.8	68.9
Buying or ordering goods or services	5.5	.0	4.5	3.9	7.4
Internet banking	5.0	.0	3.7	3.8	6.5
Educational and learning activities	52.4	56.0	27.6	45.1	62.4
Using or downloading video or electronic games	27.1	16.9	28.8	28.6	25.6
Downloading movies, images, watching TV or video, listening to radio or music	45.1	58.5	36.8	46.7	44.2
Downloading software	26.7	14.0	9.4	18.1	37.4
Reading or downloading newspapers, magazines or books online	36.2	27.9	19.9	27.9	46.6

Source : 2014 AUP, ART-NIS Survey

Table 48 **: Use of ICTs according to socio professional categories**

		Socioprofessional category in basic employment elle dans l'emploi principal					Total
		Executive senior staff, engineer and Cadre supérieur, ingénieur et assimilé	Employer	Self-employed worker Travailleur pour compte propre	Family-aid Aide-familial	Others	
Use of ICTs in the last 3 months							
Mobile phone		95.3	98.8	78.5	69.4	80.9	82.3
Computer		46.3	50	8.2	10.9	10.2	18
Internet		37.4	49.8	6	8.4	7.2	14.1
Location of internet use							
Home		49.9	69.4	46.8	45.3	54.5	49.4
Workplace		59.3	43.1	22.4	4.9	28.7	46.3
Place of study		5	4.3	2.7	11.9	20.2	4.9
Another person's home		6.7	9.9	6.2	0	0	6.3
Type of connection used							
Community internet access facility		2	0	6	0	0	2.9
Commercial internet access facility		49.8	31.1	51.7	75.3	49	50.7
Anywhere through a mobile cell phone		18.9	25.3	24.2	10.4	18.5	20.2
Anywhere through other mobile access devices		6.1	5.6	1.7	8.6	13.8	5.1
Average frequency of use of the internet in the last three months	At lest once a day	44.6	37.3	30.8	15.2	44.8	39.8
	At least once a week but not every day	39.4	58.4	44.8	56.7	36.7	41.7
	Less than once a week	9.2		11.5	6.9	12.6	9.7
	Less than once a month	6.8	4.3	12.9	21.1	5.9	8.9

Source : 2014 AUP, TRB-NIS Survey

Table 49 : Reasons for using ICTs according to socio-professional category

	Socio-professional category of the main job					Combined
	Senior executive, engineer and related categories	Employer	Own-aacount worker	caregiver	Others	
Getting information on goods and services	50.5	55.4	46.6	30.5	52.6	48.9
Getting information o health or health services	28.2	41.1	19.7	11.9	20.5	25.4
Getting information on general gevernment organisations	30.8	30	16	13.4	34.7	26.2
Interacting with general government organisations	12.1	18.9	7	4.3	8.9	10.5
Sending or receiving emails	88.4	93.4	81.2	82.4	85.2	86.2
Calling via the internet /VOIP	26.1	19.9	17.8	17	23.8	23.3
Posting information or instant messages	63.6	19.1	56.3	41.9	63.5	60
Buying or ordering goods or services	8.6	19.9	8.5	4.3	0	8.4
Internet banking	9.6	6.8	4.5	4.3	3	7.8
Educational or learning activities	52.9	38.6	31.7	25.1	75.1	46.4
Using or downloading video or electronic games	19.4	8.6	22	17.6	8.8	19.6
Downloading movies, images, watching TV or video, listening to radio or music	34.7	35.3	41.1	43.9	26.8	36.6
Downloading software	31.6	21	17.8	7.9	29.6	26.8
Reading or downloading newspapers, magazines or books online	46.6	51.7	29.7	30	51.2	41.6

Source : 2014 AUP, TRB-NIS Survey

Appendix 2 : ICT access costs

Table : Landline tariffs

Tariffs		
- Residential lines	30 000 F CFA	
- Professional line	3 000 F CFA	
Wired communciations costs	*PEAK*	*OFF PEAK*
- Regional communications	50 F CFA/mn	
- National communications	70 F CFA/mn	35 F CFA/mn
- Communications to internet servers	10 F CFA/mn	
- fixed-to-mobile communications	145 F CFA/mn	145 F CFA/mn

- **CTphone**

Table : Basic CTphone tariffs

Tariffs	*Cost/min peak hours*	*Cost/off-peak hours, public holidays or non-working day*
Per minute cost towards Camtel	70F CFA	35 FCFA/mn(tax inxluded)
Per minute cost towards other national operators	85 F CFA	

Table: CTphone fleet offers

Destinations	**Peak hours**	**Off-peak hours**
	From Monday to Friday 7:00 am to 8pm and Saturday from 7am to 2pm	**From Monday to Friday 8pm to 7 am; Saturday from 2pm to Monday 7am an public holidays**
Intra Fleet calls	25/Min	25 F/Min
Calls to other CTphones (outside fleet) and to national fixed	50 F/Min	25 F/Min
Call to mobile networks (national)	82 F/Min	82 F/Min
SMS towards CTphones	20 F	20 F
SMS towards national mobiles	45 F	45 F

- Target : General Public, enterprises, SMEs, SMIs, independent profession, etc.
- Billing type: Prepaid, Postpaid with the possibility of credit limitation.

Table: Costs for international telephone calls in 2013

Zones	**Peak hours**	**Off-peak hours**	**VoIP**
- Africa :	440/mn	308/mn	100 to 200/ mn (Tax included)
- America :	400 to 800/mn	280 to 560/mn	
- Asia :	800/mn	560/mn	
- Europe :	320 to 400/mn	224 to 280/mn	

:

Table: Internet rates in 2013

CTPhone/Commercial branch	**Internet (153.6 kbts/seconde)**	**RATES**	
Unlimited package (24H/24)		23 850	Fcfa
Night package (6pm – 07am)		20 000	Fcfa
Hourly package (100H)		5 000	F cfa
Hourly package (200H)		10 000	Fcfa
Hourly package (360H)		15 000	F cfa
Direct pricing (5Fcfa/mn) or 200Fcfa/Hour	Off-peak hour		
Direct pricing (10Fcfa/mn) or 300Fcfa/Hour	Peak hour		
ADSL	Unlimited broadband internet	RATES	
Residential	128/64	29 900	Fcfa
	256/64	35 000	Fcfa
Professional	128/64	35 000	Fcfa
	256/64	59 675	Fcfa
	256/128	149 062	Fcfa
	512/128	238 500	Fcfa
	512/256	298 125	Fcfa
	1024/256	477 000	Fcfa
	1024/512	596 000	Fcfa
PSTN		RATES	
Commissioning		15 000	Fcfa
Free for old customers			
100 H		10 000	Fcfa
Package 100H		10 000	Fcfa
Unlimited 24H/24		15 000	Fcfa
WIMAX		Monthly charges Fcfa before tax	
Residential internet	128 Kbps	42 000	Fcfa
	128 Kbps	80 000	Fcfa
Professional Electron (for SMEs, SMIs, Institutions and Cybers)	256 Kbps	250 000	Fcfa
	256 Kbps	430 000	Fcfa
	512 Kbps	745 000	Fcfa
Professional Gold (Major enterprises; Government)	512 Kbps	1 290 000	Fcfa
	1024 Kbps	2 185 000	Fcfa
	2084 Kbps	3 985 000	Fcfa
Dial-up / charges for 30 days	Payable fees Fcfa before tax	Payable fees Fcfa tax included	
package 100H	8.386	10.000	Fcfa
Unlimited connection	12.579	15.000	Fcfa
CTPhone communication costs	Time	Payable fees Fcfa tax inxluded	
Camtel to Camtel	Peak hour	75	Fcfa
Camtel to Camtel	Off-peak hour	35	Fcfa
Camtel to other national operators		85	Fcfa

Table: Internet Tariffs in 2013

		Tariff	Volume	Validity
CDMA	Direct pricing	0,005F	1Ko	
	FakoAcces	1 500F	400Mo	30 days
	Fako Smart	6 000F	1,6Go	30 days
	Fako Confort	10 000F	1Go	30 days
	Fako Top	25 000F	10Go	30 days
	Fako Pro	50 000F	30Go	30 days
	Fako Night	3 000F	3Go	(8pm to 6am) 30 days
	Fako Day	500F	150Go	24 hours
	FakoWeek	5 000F	2Go	7 days
ADSL	128/64kb/s	25 000		
	256/128kb/s	59 625	Double play	29 900
	512/256kb/s	298 125	Double play	149 900
	1024/512kb/s	596 250		
LS Internet (before tax)	256kb/s	720 000		
	512kb/s	1 260 000		
	1Mb/s	2 160 000		
	2Mb/s	3 960 000		
	4Mb/s	7 920 000		

i) For the mobile network :Orange

Basic subscription rate (General public)	SIM card at 500 FCFA / SIM with bonus: initial 500 F credit + 50 SMS
One-minute cost for local call	Peak hours : on net = 89FCFA / min with 30 sec increments. Off net = 110FCFA off-peak hours: on net = 100FCFA / 3 min. then 100FCFA / 10 min. Off net = 100 FCFA / min.
Top-up cards value	Scratch cards: 1 000 FCFA / 2 000 FCFA / 3 000 FCFA / 5 000 FCFA / 10 000 FCFA / 25 000 FCFA
Promotional offers	Joker Chrono +: calls at 1FCFA/S on net SMS 25FCFA on net
	Joker Top: 1st minute of the call billed at 89 FCFA then 50 FCFA from the 2nd minute
	Fall of international prices or 99FCFA for zone1 (France - USA - UK - India - Belgium - Canada - Germany - Italy - Lebanon - China - Spain
	New tariff option: Favourite number in international / voice tariff from 69FCFA /min. and varies from ane country to another
INTERNET TARIFFS	No connection costs
broadband connection rates	25 000 FCFA / 40 000 FCFA / 75 000 FCFA (general public: the rates vary according to the subsciption)

Appendix 3 : Extrapolation of results

Owing to the fact that sample distribution was not proportional amongst the various strata, survey weights had to be applied in all the analyses to ensure actual national representation of residential areas as well as fields of study. To facilitate the calculation of sample weightings, survey probabilities for each stage of the drawing were calculated by stratum and by cluster, leading to the assumptions below:

- a_h the number of EAs selected in stratum h in the first stage (this is also the number of clusters retained at the end of this first stage) ;
- P_{1hi} the probability to draw the ist cluster of stratum h ;
- m_i is the estimated number of households of the ist EA of stratum h (provided by the GCPH) ;
- α_h the number of clusters drawn in the second stage in stratum h ;
- P_{2hki} the probability to draw cluster k from the ist EA in the second stage (this is the probability to draw cluster k among the population of clusters made up of the EAs selected in the first stage, that is including cluster i) ;
- P_{3hki} the probability to draw a household in cluster k ;
- m_k' is the number of households enumerated in the kst cluster.

Probability P to draw a household in the final sample is given in the following formula:

$P = P_{1hi}. P_{2hki}. P_{3hki,}$ where :

- $P_{1hi} = a_h . \frac{m_i}{\sum m_i} . t_{hij}$ [10] , where t_{hij} is the estimated size of the segment (cluster) j chosen proportionally with EA i of stratum h. Note that $t_{hij} = 1$ if the cluster has not been segmented, and the total of t_{hij} is 1;
- $P_{2hki} = \frac{\alpha_h}{a_h}$ (selection with equal probability);
- $P_{3hki} = \frac{b}{m_k'}$ (selection with equal probability), where b=8 for urban strata and 12 for rural strata.

$$P = \alpha_h . \frac{b}{m_k'} . \frac{m_i}{\sum m_i} . t_{hij}$$

The survey weight for each household (or each member of the household aged 15 or more) is therefore the inverse of probability P.

[10] See sample of the EDS-MICS survey.

Appendix 4: Excerpts of the classification of ICT-related activities and products

035004 Telecommunications

This includes the provision of telecommunications and related services, which is the transmission of voice, data, text, sound and video. The specific activities involved are cabling, call-boxes, telecentres, cyber cafés, value added telecommunications services, internet access services.

The transmission facilities that carry out these activities may be based on a single technology or a combination of technologies. These activities include:

- ✓ operating and maintaining or providing access to facilities for the transmission of voice, data, text, sound and video using a wired telecommunications infrastructure;
- ✓ operating and maintaining switching and transmission facilities to provide point-to-point communications via landlines, microwave or a combination of landlines and satellite linkups;
- ✓ operating cable distribution systems (e.g. for distribution of data and television signals);
- ✓ furnishing telegraph and other non-vocal communications using own facilities;
- ✓ Purchasing access and network capacity to owners and operators of networks and using such capacity to provide telecommunications services to enterprises and households;
- ✓ Provision of internet access by the operator of the wired infrastructure ;
- ✓ Operating, maintaining and providing access to facilities for the transmission of voice, data text, sound and video using a wireless telecommunications infrastructure ;
- ✓ Operating and maintaining cellular telephony and other wireless telecommunication networks ;
- ✓ Purchasing access and network capacities to owners and operators of networks and using such capacity to provide wireless telecommunication services (except satellite transmission) to enterprises and households ;
- ✓ Provision of internet access by the operator of the wireless infrastructure ;
- ✓ Operating, maintaining and providing access to facilities for the transmission of voice, data, text, sound and video using a satellite telecommunications infrastructure;
- ✓ Transmission and distribution to the public over direct broadcasting satellites of programmes or programme packages (or channel packages) containing image, sound and text provided by radio and television channels or networks ;
- ✓ Provision of internet access by the operator of the satellite infrastructure ;
- ✓ Provision of specialised telecommunications applications, such as satellite tracking, telemetry and radar station operations;
- ✓ Operating satellite terminal stations and related facilities connected with one or more terrestrial communications systems and capable of ensuring telecommunications with satellite systems ;
- ✓ Provision of internet access by the Internet Access provider (ISP), over networks not owned or controlled by the ISP, such as dial-up internet access etc.;
- ✓ Provision of telephone and internet access in facilities open to the public;
- ✓ Provision of telecommunications services over existing telecommunications connections such as VOIP (voice over internet protocol);
- ✓ Telecommunications resellers (i.e. purchasing and reselling network capacity without providing additional services)

Appendix 5 : Production team of the National Institute of Statistics

TECHNICAL CREW

Supervision (2)

TEDOU Joseph	Director General
SHE ETOUNDI Joseph Guy Benjamin	Deputy Director General

Central Coordination (11)

Technical Coordinator (1)

OKOUDA Barnabé	Head of Department

Assistant Technical Coordinator (2)

ABANDA Ambroise	Head of Division
TCHAMAGO KOUEDEU Olivier	Head of Unit

Members of the Coordination team (8)

TATSINKOU Christophe	Head of Unit
KANA KENFACK Christophe	Head of Unit
TCHOMTHE Séverin	Head of Unit
TALLA Jacques	Chargé d'étude assistant
TIOBO'O Cédric	Chargé d'étude assistant
MOUGA Amisobel	Chargé d'étude assistant
DJEUKWI Vicky Laure	Senior staff
MBENTY Jacqueline	Executive Assistant
MENGUELLE Gabriel	Driver

Training of collection and sensitisation agents (11)

TALLA Jacques	Chargé d'étude assistant
TIOBO'O Cédric	Chargé d'étude assistant
NGAH Adèle Zooriphie	Chargé d'étude assistant
ESSAMBE Vincent	Chargé d'étude assistant
DJEMNA Elvis	Chargé d'étude assistant
MOUGA Amisobel	Chargé d'étude assistant
GERME Léonie	Senior staff
MODOU Sanda	Senior staff
NKORO Jacques	Senior staff
NHANNAG Samuel	Senior staff
KAMGUE Max	Senior staff

Field Supervisors (12)

Regional Heads of service

Harnessing Supervisor (2)

MBA Martin	Head of Division
NDEFFO GOUOPE Guy Ferdinand	Head of Unit

Harnessing Controllers (3)

TCHOUDJA Victorien	Chargé d'étude assistant
MAVASSI Fabien	Chargé d'étude assistant
ALOGO SAMBA	Senior staff

Heads of Regional Branches of INS (Sensitisation and Logistics)

DITOUPOURI	Adamawa
TCHOUANGTE Robert	Centre
TAKOUGANG ZEUKENG Eric Hervé	East
KWAYEP DIMOU Leonel	Far - North
TAMCHE Joseph	Littoral
CHOUNDONG Norbert	North
ZAFACK Martin	North-West
NGO NYEMB	West
MBARGA OWONA Paul	South
ETO Guy Sylvain	South-West

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