

RIA Beyond Access Study

Rwanda Report

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Acronyms and Abbreviations

%	: Percent
EDPRS	: Economic Development Poverty Reduction Strategy
FDI	: Foreign Direct Investment
FGD	: Focus Group Discussion
GoR	: Government of Rwanda
ICT	: Information and Communication Technology
ICT4D	: ICT for Development
IMF	: International Monetary Fund
ISP	: Internet Service Provider
MDG	: Millennium Development Goal
MNO	: Mobile Network Operator
MYICT	: Ministry of ICT and Youth
NICI	: National Information Communication Infrastructure
NISR	: National Institute of Statistics of Rwanda
RIA	: Research ICT Africa
RRA	: Rwanda Revenue Authority
RURA	: Rwanda Utilities Regulatory Authority
Rwf	: Rwanda Franc (<i>During the survey period USD 1 = Rwf 833</i>)
USD	: United States Dollars
WB	: World Bank

Executive Summary

This report gives a summary of a study conducted in Rwanda aiming at obtaining qualitative information that reflects perceptions about how people use Internet when they have their data subsidized and when they do not. Nine Focus Group Discussions (FDGs) were conducted in that perspective in different geographical areas of the country over a two week period to a total of 110 participants from urban, peri-urban and rural locations and selected from a wide range of views and opinions conditioned by gender, income levels (*Ubudehe* categories applicable in Rwanda), employment status, education, and exposure (or not) to Internet use to test research hypotheses on the use and impacts of subsidized services.

The results from the discussions showed that, overall, there is no direct linkage between gender and the use of Internet apart from the time spent on Internet with males spending more time on Internet compare to females; and the locations of participants do not have substantial differences in terms of use of Internet due probably to the size of the country and availability of transport facilities across the country.

The more participants are educated the more they use Internet and spend more time on work related activities; with young people being more interested in social media and games while adults are more interested in email communication and local online news. It is a well-known economic fact that low-income households spend a higher share of their budgets on basic needs, and that a smaller share of spending goes toward basic needs as a household's income rises. FGD findings showed that the majority of participants from the first two categories of *Ubudehe* are non-users of Internet, and for those who use Internet, the spending on Internet is still very low and comes far after spending on basic needs - defined as the major budget components of housing, food and health care.

Results from FGDs also revealed that the use of subsidized data services in Rwanda constitute a great part of the data use as it allows Mobile Network Operators keep a big number of subscribers that effectively use Internet even though the content they use is very limited to two or three services. Participants do move beyond the use of subsidized services only when they still have their respective bundles with available data but they have a lesser understanding of the potential of Internet beyond the few services that they regularly use.

The majority of participants with mid or high income when asked how they would react if subsidized data was no longer available, responded that they may reduce the time spent on Internet while participants with low income responded that they may stop using Internet. Participants with low income tend to use low price bundles with limited data capacity particularly from AirTel and TIGO with options for *zero rated services* or other promotions while participants with relatively mid to high income prefer to take a monthly subscription on a flat rate basis or high price bundles that provide high capacity of data, mostly from MTN.

Barriers to use Internet include illiteracy and lack of understanding of foreign languages to manipulate devices and understand the Internet contents, financial resources to pay for smart phones and buy Internet data and limited awareness on the benefit of using Internet. This is particular true for participants living in rural areas.

There is a need to promote the optimal use of Internet through public awareness to allow users to make appropriate choices when they buy bundles or packs.

1. Introduction

1.1 Purpose of the study

The main purpose of the study was to obtain qualitative information through focus group discussions (FGDs) that reflects perceptions about how people in Rwanda use Internet when they have their data subsidized and when they do not. More specifically, the study sought to shed light into the factors influencing Internet use and the strategies that people employ in order to be able to access and use data for different purposes.

Apart from Rwanda, the study is also being conducted in Kenya, Nigeria and South Africa under the supervision of Research ICT Africa (RIA), a non-profit organization based in Cape Town, South Africa. Nine FGDs were carried out in different geographical locations of Rwanda over a two week period between November 10th and November 23rd, 2016 to a total of 110 participants to test the following research hypotheses:

- The use of subsidized services only forms part of data use;
- People do not move beyond the use of subsidized services;
- Using Internet first through subsidized services leave people with a lesser understanding of Internet.

To test these hypotheses, the study sought to understand the following issues:

- The reasons for peoples' use of their top 5 sites;
- Whether people are interested in using Internet beyond the top 10 services;
- To what degree did free or discounted access to Internet affect the decision of new Internet users to go online;

Participants of the FGDs were selected based on gender, location, education and income, and purposefully designed to include those who have been using Internet for more than a year, the more recent Internet users as well as non-Internet users using a set of questions to inform both existing supply side and past demand side data.

These findings are hoped to provide evidence that will inform and guide policy strategies in issues surrounding equal rating as well inform the household and individual ICT access and use survey to be carried out in the next round.

FGDs in Rwanda were carried out by a research team composed of a team leader (Mr. Albert Nsengiyumva), a research supervisor (Mr. Claude Bizimana) and two research assistants (Mr. Bienvenue Murangwa and Mr. Callixte Kalisa).

1.2 Methodology

This section specifies the approach and methodology used for the survey. While the survey used a wide approach with respect to zonal location and livelihood variation specific to Rwanda, the methodology used is quite similar to that used in the other countries involved in the RIA research project on how people within the country use Internet when they have their data subsidized and when they do not.

This section further presents a short description of research areas, surveyed venues, participants profiling and how discussions were administered and groups composed.

a. Research areas

Following the categorization of enumeration areas in Rwanda divided into three groups; namely urban, peri-urban and rural by the National Institute of Statistics of Rwanda (NISR), the survey team administered nine focus group discussions across all the four provinces of the country and the capital city following the height given to the above enumeration areas as shown in the table 1 below.

Table 1: Research areas and categories

Province	Research areas and categories		
	Urban	Peri-urban	Rural
Kigali City	<i>Nyamirambo</i>	<i>Kabuga</i>	
	<i>Kicukiro</i>		
Northern province		<i>Musanze</i>	<i>Kidaho</i>
Southern province		<i>Nyanza</i>	<i>Cyabakamyi</i>
Western province			<i>Gatumba</i>
Eastern province			<i>Kiziguro</i>

Source: Primary data, 2016

b. Venue selection

The selection of FGD venues within the enumeration areas considered factors such as socioeconomic profile, accessibility, network coverage and data connectivity. FGDs took place in environments that allowed good discussions with participants, using audio recorders and taking photographs where they were allowed. Each of the FGD venue had mobile connectivity and Internet access, but with great variability of network options depending on whether the venue is located in urban, peri-urban or rural areas.

At each venue, the research team ensured that discussions were held in the local language to allow fruitful discussions and the groups' composition responded to requirements of the FGDs and studied characteristics (e.g. education level, employment status, income group and Internet awareness).

c. Participants' profile

A total of 110 people participated in the FGDs following the guiding principles of the survey to select a wide range of views and opinions conditioned by gender, income levels (*Ubudehe* categories applicable in Rwanda), employment status, education, and exposure (or not) to Internet use (the attendance list of participants to all FGDs is given in Appendix 2).

Out of the 110 participants, 71 (65%) were Internet users while 39 (35%) were non-users, coming from rural areas at 44%, peri-urban areas at 38% and urban areas at 18%. Male and female participants were equally represented (50% for each group) in the discussions, with slight differences between Internet users and non-users as shown in table 2 below.

Table 2: Distribution of participants by gender

	Male	Female	Total
Users	33	38	71
Non-users	22	17	39
Total	55	55	110

Source: Primary data, 2016

The cross-tabulation between the education level and use of Internet (table 3) reveals a positive correlation between the two dimensions, validating the insights from FGDs on the main reasons for not using Internet being the low level of literacy associated to a language barrier to read Internet contents and manipulate devices.

Table 3: Distribution of participants by education level

	Education level					Total
	University graduates & undergraduates	High school graduates	High school drop out	Primary level	Primary drop out	
Users	35	28	5	1	0	71
Non-users	0	11	9	8	11	39

Source: Primary data, 2016

As specified above, this survey used the *Ubudehe* categorization to reflect the household income. The FGD participants fall under three of the four categories of *Ubudehe* and findings show a median of 44% across the two categories (with 50% of users and 37% of no-users) using Internet (Table 4). And overwhelming majorities in the first two categories reported owning some form of mobile devices, but the “smartphones” more owned by people in the third category.

Table 4: Distribution of participants by level of household income

	Household income			Total
	Category I	Category II	Category III	
Users	0	7	64	71
Non-users	6	10	23	39

Source: Primary data, 2016

d. FGDs’ administration and group composition

FGDs were held over a two week period between November 10 and November 23, 2016, with one FGD exclusively dedicated to women and with the biggest number of participants compared to other FGDs (Table 5). The choice of a ‘women only’ focus group was purposive to test possible differences of opinions and views whether alone or in a mixed group.

There were no significant differences between opinions and views expressed by women, being alone in a group or mixed by their counterpart men or survey locations. Although Internet has frequently been characterized as male-dominated in the recent years (Weiser, 2000), opinions and views expressed by participants on Internet use barely differed by gender.

Table 5: Profile of each FGD

Date Completed	FGD Centre	Gender Type	Class	FGD Language	No. of Participants
10 th November 2016	Kabuga	Mixed	Peri-urban	<i>Kinyarwanda</i> (Local Language)	10
11 th November 2016	Nyamirambo	Mixed	Urban		10
15 th November 2016	Musanze	Mixed	Peri-urban		10
16 th November 2016	Kidaho	Mixed	Rural		11
17 th November 2016	Nyanza	Female	Peri-urban		22
18 th November 2016	Cyabakamyi	Mixed	Rural		17
19 th November 2016	Gatumba	Mixed	Rural		10
22 nd November 2016	Kiziguro	Mixed	Rural		10
23 rd November 2016	Kicukiro	Mixed	Urban		10

Source: Primary data, 2016

2. Country Overview

Rwanda is a small landlocked country in East Africa surrounded by the Democratic Republic of Congo (DRC) to the west, Tanzania to the east, Uganda to the north, and Burundi to the south. The population of Rwanda is approximately 11.8 million, of which 52% are women (NISR, 2017).

2.1 Socio-economic developments

With the support of the International Monetary Fund (IMF) and the World Bank (WB), Rwanda has been able to make important economic and structural reforms and sustain its economic growth rates over the last decade.

Rwanda's long-term development goals are defined in a strategy known as "Vision 2020" that seeks to transform the country from a low-income agriculture-based economy to a knowledge-based, service-oriented economy with a middle-income country status by 2020. To this end, the country is heavily investing in Information and Communication Technology (ICT) and in the same time attracting Foreign Direct Investments (FDIs) through Public-Private Partnership (PPP) in the various aspects of ICT development from Infrastructure, ICT equipment and devices, software applications and services as well as ICT training and capacity development as a whole.

The Economic Development & Poverty Reduction Strategy (EDPRS) 20013-17 is the medium-term framework for achieving Vision2020 and follows the Millennium Development Goals (MDG) benchmarks and targets to transform the country's economy and people's standard of living through ICT development across all sectors and homegrown policies and initiatives translated into sustainable development programs.

One of the homegrown initiatives used in this study as a proxy to the household income is *Ubudehe*, which refers to the long-standing Rwandan practice and culture of collective action and mutual support to solve problems within a community. The *Ubudehe* categorization process is used to reflect participants' degree of social and economic vulnerabilities. *Ubudehe* comprises four categories of households (poorest, poor, middle class and rich) based on a set of criteria that measures the level of wealth per household¹.

¹ Ubudehe Categories:

- Category One — people in these families (1,480,167 people) live in extreme poverty without the ability to own or rent a house and often struggle to get food and basic items like soap. They comprise 16% of the total households in the country (376,192 households).
- Category Two — which is made up of those who own a house or able to rent one, can eat at least twice a day and can earn wages working for others often in non-permanent jobs – totals 703,461 households, representing 29.8%.
- Category Three — with families of at least one family member self-employed or working as an employee in the private or public sector or several family members doing business activities or their farms generating a surplus for markets. They comprise 53.7% of all the households in the country and inhabited by more than 5.7 million people.
- Category Four — which comprises those who are very rich being big farmers, successful business people and top employees in the public and private sectors, has included 11,664 households representing 0.5% of the total households.

2.2 ICT developments

a. National ICT policy

In order to transform Rwanda into a knowledge-based economy, GoR integrated ICT in the Vision 2020 and EDPRS to enable Rwanda leap-frog the key stages of industrialization and transform her agro-based economy into a service, information-rich and knowledge-based one that is globally competitive (GoR, 2015a).

In 1998, the Rwandan ICT for Development (ICT4D) policy was adopted to implement policies and plans that would address Rwanda's developmental challenges in the information and technology age, in order to accelerate the country's socio-economic development. In 2000 GoR began implementing the ICT4D policy, commonly known as the National Information Communication Infrastructure (NICI). The first NICI (2005) was placed on creating a conducive environment by establishing the institutional, legal and regulatory framework for ICT development, putting in place the necessary mechanisms, liberalization of the telecoms market, reduction of entry barriers to the telecom market as well as an effective implementation and coordination mechanism (GoR, 2015a).

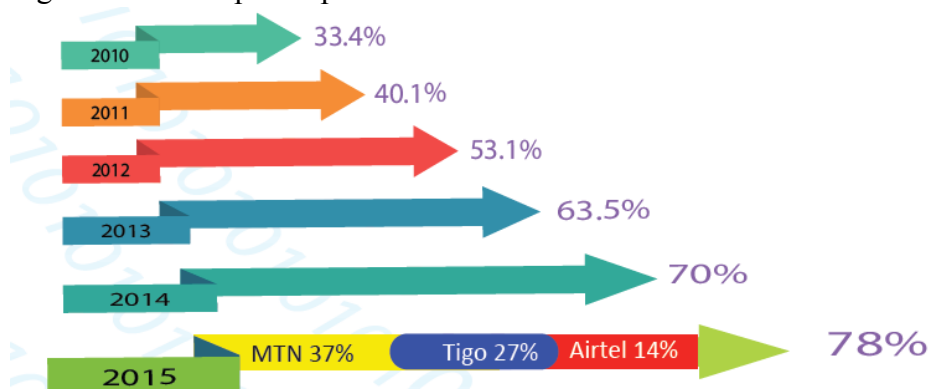
The second plan (NICI-2010) focused on providing world-class communications infrastructure as a backbone for current and future communications requirements. Several projects ranging from increased nationwide coverage of telecommunications networks, versatile and high capacity national optic fiber backbone network, national data center as well as a centralized monitoring and operations center were among the accomplishments of NICI II (GoR, 2015a).

The third NICI (2015) and the current plan -and final phase of the NICI process (2020) emphasis was placed on services development across EDPRS priority areas to fuel continued growth (GoR, 2015a).

b. Mobile phone and Internet penetration

Mobile phones have largely contributed to the increase of Internet use and penetration particularly for the youth and low income earners (McKinsey & Company, 2014). In addition, technology evolution and competition among technology vendors, telecom operators, and service providers over the years has contributed to a continuous decrease of price for voice, data, as well as devices including feature phones and smartphones. This has contributed to increasing the mobile phone penetration rate and thus Internet penetration rate particularly for mobile Internet.

Figure 1: Mobile phone penetration rate



Source: GoR, ICT Sector Profile, 2015

By December 2015, the number of active cellular phone subscribers has increased to 77.8%, from 70% in December 2014, hence a total addition of 1,012,600 new subscribers in a period for nearly a year (GoR, 2015b).

As illustrated in the table 6 below, the total number of mobile Internet subscribers covers more than 99% of the total Internet subscribers (RURA, 2016). The table 6 also illustrates the breakdown of Internet subscribers per category and per operator

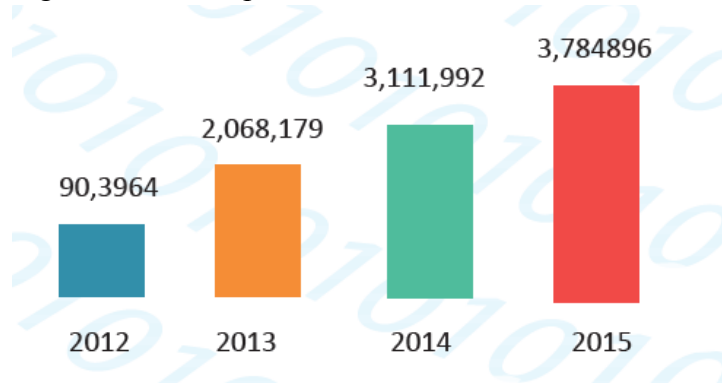
Table 6: Internet subscribers per category per operator as of September 2016

Operator	Fixed Internet		Mobile Internet	Total
	Narrowband(≤ 256 kbps)	Broadband(≥ 256 kbps)		
Liquid Telecom	16	456		472
MTN Rwanda	176	19,201	1,558,669	1,578,046
Tigo Rwanda ltd		115	1,505,773	1,505,888
New Airtel ltd	13	50	85	148
ISPA ltd	43	200		243
4G Networks ltd		47		47
BSC ltd		1,274	2,397	3,671
Axiom Networks		89	17	106
Airtel rwanda ltd		68	893,866	893,934
Gmax Ltd			162	162
Popconn Ltd			91	91
Truconnect			271	271
Tnsp's			583	583
4NetAfrica Ltd			55	55
Universalinks Group			545	545
Piramie INC			61	61
Total	248	21,500	3,962,575	3,984,323

Source: RURA, Active mobile telephone subscriptions as of October 2016, 2016

On the data segment, the number of Internet subscriptions reached 3,784,896, up from 3,111,992 subscriptions in December 2014 (GoR, 2015b). This represents an Internet penetration rate of approximately 33.5% by December 2015. As result, 35.6 % of the Rwandan population is using Internet (GoR, 2015b).

Figure 2: Internet penetration



Source: GoR, ICT Sector Profile, 2015

2.3 Development challenges

Despite the socio-economic and Internet developments highlighted above and the heavy investments made by the GoR in the ICT sector, Rwanda still faces challenges of a weak private sector largely dominated by the informal sector and this suggest an important paradigm shift to enhance quantitatively and qualitatively products and services delivered by the private sector. Other challenges include poor infrastructure and lack of access to electricity in some of the remote areas that constitute major constraints to private investment.

3. Main Findings of the FGDs

3.1 General considerations

Over the last five years, Internet has been widely advertised within the Rwandan community through classical media like TV, radio and newspapers and also through public awareness campaigns spearheaded by the Ministry of ICT and Youth (MYICT) and Internet Service Providers (ISPs)/ Mobile Network Operator (MNOs). The results of this undertaking can be seen in the way participants in the various FGDs across the country, particularly the youth, were knowledgeable about Internet potential and expectations.

The discussions with selected participants categorized by age, gender, location, levels of education and income, and employment status revealed the following findings:

- Overall, there is no direct linkage between gender and the use of Internet apart from the time spent on Internet: i) males spend more time on Internet compare to females. The latter claimed that they have other family obligations to cater for therefore they cannot afford to spend more time even though they would love to; ii) males particularly youth do spend time for all kinds of entertainments like movies, betting, games, YouTube...as they can do so even from home while females have not the opportunity to do so particularly women as they first have to deal with family matters while at home.
- The more participants are educated the more the use Internet and they spend more time on work related activities particularly doing research, communicating with partners and colleagues and searching for innovative ideas.
- The locations of participants have not shown substantial differences in terms of use of Internet and this is may be due to the size of the country particularly the relatively low distances between urban, peri-urban and rural coupled with availability of public transport facilities that allow people to move from one location to another and on regular basis. The main difference is in term of possible options for Internet access between urban/peri-urban and rural. Participants living in the rural area have limited choices of Internet providers and therefore are subject to one provider like MTN as this is the only one available.
- The distribution of participants by age is indeed of importance particularly between youth and adults. Young people (20–30 years old) are more interested in social media, local online news and YouTube while adults (35 and above) are more interested in email communication particularly for work related activities, research and local online news.
- The level of education has a direct linkage with the use of Internet. The majority of full users have at least graduated from secondary education while the majority of non-users have dropped out from primary education therefore they have difficulties with reading and understanding foreign languages like English and French. In addition, they have low income and cannot afford to pay for Smart phones.

- Identification of participants by the level of income correlate with the level of education and is equally important: the more the level of income is high the more participants spend for Internet use and diversification of content.

3.2 Motivations, incentives and expectations for Internet use

a. Easy and cheap communication

More generally, full users were motivated by access to easy and cheap communication as alternative to phone calls particularly for international communication. Shared and relatively cheap Internet access through private cyber cafes particularly in Kigali and peri-urban were the major incentives for full users in the early stage of Internet when mobile Internet have not yet been introduced. While for new users, mobile Internet coupled with public WiFi particularly in Kigali City as well as availability of affordable bundles constitute the major incentives for Internet use even though the capacity of data as per bundles that they can afford is still low.

b. Education and academic research

Internet has provided an opportunity to access various education contents and publication of academic research in various fields therefore it offers a great repository of contents in various forms to allow scholars to get access to learning materials, documented research reports and variety of eBooks that could not be found in the local libraries. All full users who have reached upper secondary education and higher education have discovered Internet from schools and they have mainly been using it for education and research purposes.

As people in emerging and developing economies grow richer and become better educated, technology use is likely to grow. In previous years, within every country surveyed with sufficient sample size to analyze, people with more education and higher incomes are more likely to use Internet or own a smartphone than those with lower incomes and less education (Poushter, 2016).

The key expectations from the users include:

- Easy access to publication to support research and enhance understanding of scientific experiences;
- Opening up opportunities for friendship and partnership;
- Enhancing productivity and marketing of products, services and business opportunities.

Fidele, a student at University of Rwanda from Nyamirambo says: *“I use Google and Wikipedia for my class assignments, especially when in a presence of new word or topic that I have to learn about. As an engineering student, I also benefit a lot by reading **conver.com** to search for new design technologies”.*

When he was asked how he learns graphic design online, **Yasiri** from Musanze answered: *“ For instance, when I want to learn how to use Adobe Illustrator in designing an image, I go on Google and write in the search space 'How to design an image using Adobe Illustrator'”*

then google gives me various options that allow me to choose a suitable one for my research”.

c. Easy access to information

More than any other communication platform, Internet has revolutionized access to Information in a way that is fast, relatively cheap and almost spontaneous. In addition, it has brought in an aspect of interactivity in real time through social media, chat, email... that has made it one of the most powerful communication tools worldwide. Almost all participants; females and males, adults and youth, rural, peri-urban and urban dwellers; have a common need to read local online news on regular basis.

Emertha, a female participant from Musanze: *the first thing I do when I wake up is to check my WhatsApp messages, chat with friends and I then read online local new from igihe.com and umurimo.com. I reconnect again at lunch time during the break and evening hours”.*

Emmanuel, a male participant from Gatumba: *I started using Internet in 2013. My main interest was to follow football news, especially the European Champion’s League as well as communicating with friends”.*

Pascal, a male participant from Cyabakamyi: *I started using Internet in 2009 by opening my first email account. My main motivation was to communicate with colleagues about work and related reports but it is also a good opportunity to get up to date information”.*

Aline, a female participant from Kicukiro: *“I am a fun of WhatsApp and Facebook as I can easily communicate with my friends wherever they are. I also check online news particularly Igihe.com and use email communication on regular basis”.*

The youth across the various locations and from different Background are all engaged in different interactions through Social Media and this has become the number one Internet service where the Youth spend more time particularly on WhatsApp and Facebook.

d. Work related websites and business facilitation

Internet has become an important information and communication tool that facilitate productivity through communication and data sharing for both public civil servants and private businesses across various sectors of the economy. This has been testified by several participants across the different locations like teachers in secondary education, civil servants working in local government offices and private business representatives.

Thierry, a male participant from Kiziguro: *“As secondary school teachers, we use Internet mostly for research and prepare our subjects”.*

Eric, a male participants from Kidaho: *“I mainly use Irembo website for work purposes, RRA website for tax declaration and online news platforms such as igihe.com, ukwezi.com and umuseke.com. I also use the social media particularly WhatsApp and Facebook”.*

3.3 Preferred internet contents and time allocation

a. Five preferred websites and online services

Five Internet contents and services emerge as the most preferred by the majority of participants:

- Local online news (on top of them igihe.com and umuseke.rw);
- Social media (on top of them WhatsApp and Facebook);
- Email communication (on top of them Google and Yahoo!);
- YouTube;
- Online public services (on top of them Irembo.rw)

b. Diversity of contents

Participants across the 9 FGD locations have little differences in terms of diversity of contents that they use. In all the 9 FGD locations, they were three web sites or services that have emerged as the most popular and frequently used. Those include local online news (e.g. igihe.com and umuseke.rw), social media (e.g. WhatsApp and Facebook) and Google search. The three types of Internet contents and services cut across the locations, age distribution, education level, gender and income level.

c. Discovery of new contents

Similarly the sources of discovery of new content are linked to the preferred Internet contents or services that the participants like. The majority of participants across the different locations discover new content mainly on social media like WhatsApp and Facebook and local online news (Igihe.com and Kigali Today). Others discover new contents by searching on Google and YouTube. A few participants particularly adults both males and females discover new contents on TV or radio during special programs providing information on latest developments on Internet.

d. Time spent in relation to daily activities

Overall, the time spent on Internet on daily basis varies depending on age, status of employment and the use of promotional packages including *zero rated services*:

- Young participants across the 9 locations spend on average three to four hours per day and are mostly using social media like WhatsApp and Facebook as well as searching for new content.
- Amongst the young participants, there is a good number of unemployed that spend at least three hours a day searching particularly for job opportunities or possible partnership connections and news related contents.

- There is a category of participants that use Internet for work or business related activities and they do spend at least six hours a day.
- The regular employees from public and private sectors spend between one to two hours per day.

The availability of bundles with *zero rated services* and promotions is an important factor for participants as it can influence both time and content on Internet on a daily basis. This is particularly true for participants with low income including the youth that are either still in school or are unemployed.

3.4 Use of subsidized data services

This particular question has attracted interesting discussions particularly in urban and peri-urban areas where there is high competition and therefore promotional bundles amongst the three MNOs. The purpose was indeed to test the following three hypothesis:

- The use of subsidized services only forms part of the data use;
- People do not move beyond the use of subsidized services;
- Using Internet first through subsidized services leave people with a lesser understanding of Internet.

Subsidized data including *zero rated services* and other promotional packages play a significant role in the overall Internet use in Rwanda. This is reflected in the way participants chose their bundles and keep using specific bundles as long as they respectively provide subsidized data including *zero rated services* and promotions.

At least 50% of participants are aware of existing subsidized data and promotions even though they did not know the meaning of subsidized data. We had to explain the meaning every time we were introducing the question and the participants that enjoy subsidized data or any form of promotion were able to express the way they benefit the service and the reasons they fill it is important to keep those promotional bundles.

The majority of participants that use AirTel or TIGO bundles have made their choices based on promotional packages including *zero rated services* and a good number of them are also using MTN packs to allow them to get alternative access when AirTel or TIGO have a low signal or not operational at all. In terms of category of users, mainly participants with low income tend to choice bundles with *zero rated services* on AirTel and TIGO even though the signal can be instable or slow in some areas.

Subsidized data or *zero rated services* are particularly popular on what's up and Facebook and this is probably the reason why those two contents are the most popular amongst the social media used in Rwanda. Speaking to an AirTel sales representative, he suggested that they are planning to close the current *zero rated services* due to the fact that the majority of users that are benefiting from *zero rated services* are no longer using other services therefore are not spending on data and this may create a huge loss for AirTel. They are looking for other types of promotional packages that can attract users with possibility to keep spending on data as opposed to the current *zero rated services*.

The majority of participants with mid or high income when asked how they would react if subsidized data was no longer available, responded that they may reduce the time spent on Internet while participants with low income responded that they may stop using Internet.

Following the feedback from different participants who use subsidized data services on regular basis, our tentative answers to the above hypothesis are as follows:

- The use of subsidized data services in Rwanda constitute a great part of the data use as it allows the MNOs to keep a big number of subscribers that effectively use Internet even though the content they use is very limited to two or three services. This is particularly true for users that buy cheap bundles or packs with *zero rated services*. We can also assume that there is a cross subsidization of data between cheap bundles and the bundles that offer unlimited data to use within a given time as these bundles are very popular across the three MNOs.
- The majority of participants do move beyond the use of subsidized services especially when they still have their respective bundles with available data but once the data is over they can keep using subsidized data on a limited number of services until they buy a new bundle as allowed by some MNOs like AirTel. This is what AirTel is going to change in order to push the subscribers to buy new bundles once the existing one ends.
- The majority of participants including the ones that use subsidized services are still using a limited number of services therefore they have a lesser understanding of the potential of Internet beyond the few services that they regularly use. Meanwhile participants who use subsidized services are more affected as they tend to use a limited number of services. In addition, MNOs as part of their promotional offers have come up with new bundles that only allow to use a few number of services and this will actually contribute further to a lesser understanding of Internet. There is a need to promote the optimal use of Internet through public awareness to allow users to make appropriate choices when they buy bundles or packs.

3.5 Use of Internet

There is a wide selection of choices from participants in the use of Internet from providers, types of bundles and spending. Participants have also raised specific barriers they face in order to effectively access and use Internet.

a. Factors influencing the choice of MNOs

Out of 71 Internet users, 35 (49%) use MTN, 19 (27%) use TIGO while 17 (24%) are on AirTel. This is somehow reflecting the national distribution of Internet users per MNO as given in Figure 1 (statistics of 2015).

The factors that influence the choices of participants are as follows:

- Participants using MTN prefer to use it because of its availability, reliability and strength across the country even though it is more expensive compare to AirTel and TIGO.
- Participants using TIGO prefer to use it because it provides flexibility and various promotional packages including bundles and packs like free usage every day between 6 and 8 am in the morning. It also has a variety of bundles that include promotions in

terms of free time and subsidized data that facilitate users with low income. Although, the main challenge is the unavailability of the signal in some locations.

- Participants using AirTel prefer to use it because it is very flexible in terms of offering bundles with *zero rated services* and other promotions. It is also the most innovative providers as it keeps bringing new packs that allow young users with low income to enjoy Internet. Unfortunately, it is mostly accessible in urban and peri-urban and not available in different remote areas.

b. Preferences for different mobile packages

The most popular mobile packages amongst participants are bundles as they provide flexibility in terms of amount to spend, data capacity and duration of use.

Participants with low income tend to use low price bundles with limited data capacity particularly from AirTel and TIGO with options for *zero rated services* or other promotions while participants with relatively mid to high income prefer to take a monthly subscription on a flat rate basis or high price bundles that provide high capacity of data.

The bundles and packs that are most popular from participants' answers include (the list of all bundles and packs offered by the three MNOs during the survey period is given in Appendix 1):

- An MTN bundle of Rwf 1,000 (approx. USD 1.2) that provides 500 Mb on weekly basis
- An MTN bundle of Rwf 100 (USD 0.12) that provides 18 Mb on a daily basis
- A TIGO pack of Rwf 100 (USD 0.24) that provides 17 Mbs on a daily basis
- An AirTel bundle of Rwf 500 (USD 0.6) that provides 1 Gb on monthly basis
- An MTN bundle of Rwf 800 (USD 0.96) that provide 24 hours unlimited data

The types of bundles and packs from the three MNOs keep changing almost every week due to tough competition going on and some promotions offers including *zero rated services* are not even publicized on the website to prevent competitors to access the information.

c. Use of WiFi and public data

WiFi and public data are widely available in Kigali City and peri-urban while in rural area, WiFi can be accessible at the local administration offices known as sectors and some businesses like hotels and agro-processing centers where available.

Participants in urban and peri-urban locations namely *Kicukiro*, *Nyamirambo* and *Kabuga* use WiFi and public data as alternatives to mobile Internet while participants in rural locations have to travel to nearest access point in order to use public WiFi.

d. How much people spend on Internet on day/week/monthly basis

It has been very difficult to understand participants' answers on spending on Internet in relation to other spending needs. We have tried to understand the factors that determine spending on Internet and some of the obvious factors include the income level of participants, the education level, the types of content and availability of alternative means for Internet access such as free WiFi and private cyber cafes.

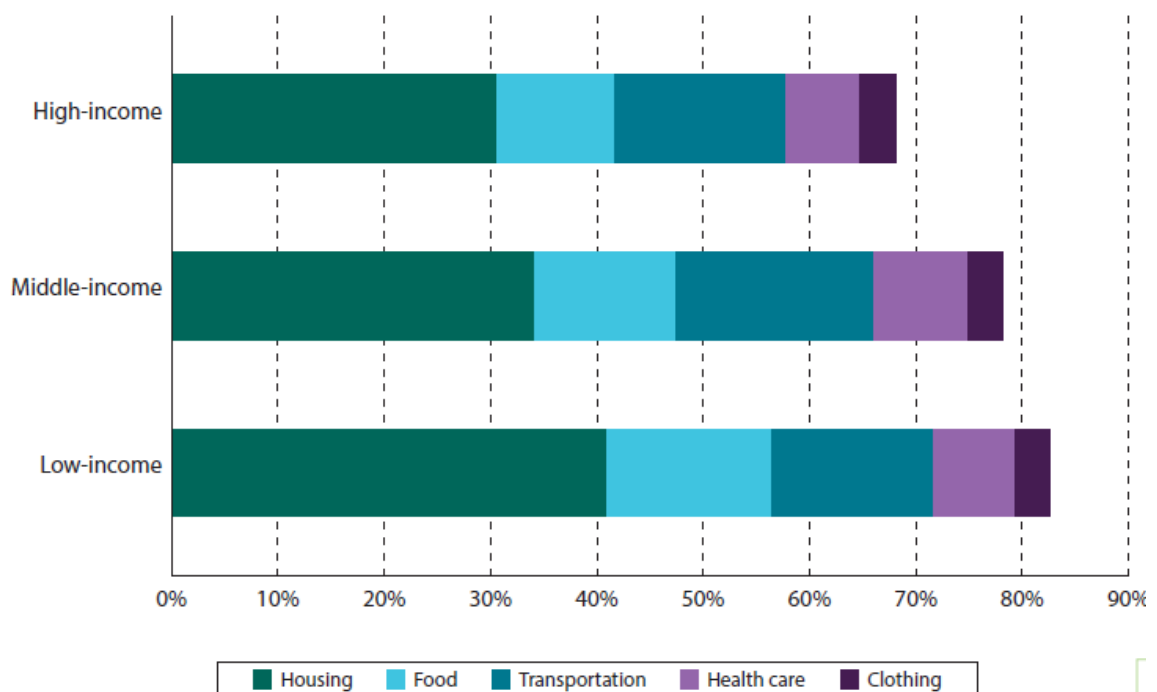
Participants in *Kicukiro* FGD has the highest average monthly spending of Rwf 8,000 (approx. USD 10). The district of *Kicukiro* in Kigali City is the first out of the thirty districts in the country where the level of poverty is the lowest. In addition, the area has good coverage of three main MNOs, availability of public WiFi and Cyber cafes.

Participants in *Nyanza* FGD has the second average monthly spending of Rwf 6,700 (approx.USD 8). The majority of participants use Internet for work or private business purposes and this suggest that they use it on regular basis and combine mobile Internet and cyber cafes as well.

Participants in *Nyamirambo* FGD has the lowest average monthly spending of Rwf 3,100 (approx. USD 3.7). *Nyamirambo* is a one the popular neighborhood close to Kigali City downtown with a good number of cyber cafes and public WiFi. In addition, the majority of participants have low income.

In some of the FGD locations, like *Kiziguro* and *Kicukiro*, the majority of participants ranked the use of Internet as a priority only after spending on basic needs - defined as the major budget components of housing, food and health care- and spending on Internet is still very low. This is in line with findings that show that low-income households today allocate a greater share of their spending to basic needs than do high-income households (Schanzenbach *et al.*, 2015).

Figure 3: Share of household expenditures on basic needs, by income



Source: Schanzenbach *et al.*, 2015

e. Barriers to use Internet

The country has made significant progress in terms of Internet access and usage over the last six years or so. This is mainly due to mobile internet as it can be seen in the latest statistics on

Internet subscribers. Meanwhile, they are still barriers to access and use Internet as per different feedback from the participants.

- Non users

The 39 non-users across the 9 FGD locations are not able to use Internet due to the following reasons:

- The number one reason is illiteracy and lack of understanding of foreign languages like English and French to manipulate devices and understand the Internet contents. This is particularly true for participants who dropped out from primary and secondary school.
- The second reason is the lack of financial resources to pay for smart phones and buy Internet data.
- The third one is the limited awareness on the benefit of using Internet. This is particular true for participants living in rural areas.

- Internet users

Participants that use Internet came up with the following barriers:

- expensive smart phone devices;
- high price of data despite available low prices of bundles;
- Instable and low connectivity in some areas particularly for participants that use AirTel and TIGO as well as participants in urban that use WiFi in public spaces like bus stations and buses.

4. Conclusions

Overall, the use of Internet is progressively becoming a common need for the various segments of the Rwandan society independently of their ages, gender, education, income level and locations. Rwanda being a small country with a relatively good roads network, even those living in remote areas where Internet connectivity is not available or is very slow, can easily move to the nearest place to use Internet when need be.

Tremendous success in terms of raising the number of Internet users has been made over the last six years or so and this has been achieved thanks to the introduction of mobile Internet as almost all users get access to Internet using their mobile devices as well as competition between the three MNOs that have allowed to introduce innovative options including bundles and packs to allow various income segments of users to use Internet.

The majority of participants spend more time on social media like WhatsApp and Facebook and local online news and these contents are not necessarily instructive or productive. This suggests the need for further sensitization in the optimal use of Internet by balancing between entertainment and productive use. Equally important is the need to educate Internet users in some of the aspects that can negatively affect young and lower educated users.

The average spending on Internet from the participants is very low compare to the average levels of income and other spending needs like foods, transport and voice communication even though the majority of participants claim that Internet is one of their three main priorities.

Despite efforts by the GoR to facilitate access to Internet by availing public WiFi in various public spaces including buses, bus stations, district and sector offices as well as public access points, there is still a huge gap in remote peri-urban and rural areas particularly in locations where those facilitations are most needed. As illustration, places like *Cyabakamyi* and *Kiziguro* are in need of alternative Internet connectivity options like WiFi to allow many users particularly the youth and the business community to use Internet.

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Appendices

Appendix 1: Internet bundles and packs offered by the three MNOs (*applicable during the survey period*)

MTN Internet bundles

Bundle	Price (Rwf)	Validity period	What you get
5 MB	50	Daily	All websites browsing & streaming
15 MB (Social Pack)	100	Daily	Whatsapp, Twitter & Facebook
50 MB	200	Daily	All websites browsing & streaming
150 MB	350	Daily	All websites browsing & streaming
300 MB	500	Daily	All websites browsing & streaming
1 GB	800	Daily	All websites browsing & streaming
500 MB	1000	Weekly	All websites browsing & streaming
1 GB	2,000	Weekly	All websites browsing & streaming
1 GB/day	5,000	Weekly	All websites browsing & streaming
750 MB	2,000	Monthly	All websites browsing & streaming
1 GB (Social Pack)	2,000	Monthly	Whatsapp, Twitter & Facebook
3 GB	5,000	Monthly	All websites browsing & streaming
5 GB	15,000	Monthly	All websites browsing & streaming
1 GB/day	21,000	Monthly	All websites browsing & streaming
10 GB	25,000	Monthly	All websites browsing & streaming
20 GB	43,000	Monthly	All websites browsing & streaming

Source: http://www.mtn.co.rw/Content/Pages/78/MTN_Internet_Bundles

TIGO Internet packs

Pack	What you get	Price (Rwf)	Valid
Surf 100	17 MBS	100	24 Hours
Surf 200	60 MBS	200	24 Hours
Surf 300	200 MBS	300	24 Hours
Surf 500	500 MB	500	48 Hours
Surf 800	1.2 GB	800	48 Hours
Surf 1,000	750 MB	1,000	7 Days
Monthly 3,000	3 GB	3,000	1 Month

Pack	What you get	Price (Rwf)	Valid
Monthly 5,000	5 GB	5,000	1 Month
Surf 8,000	8 GB	8,000	60 Days
Surf 21,000	30 GB	21,000	60 Days

Source: <http://www.tigo.co.rw/internetpacks>

AIRTEL Rwanda Internet bundles

Bundles			
Bundle	Price (Rwf)	Data Allowance	Validity
Daily	50	7 MBs	24 Hours
Daily	100	18 MBs	24 Hours
Daily	200	65 MBs	24 Hours
Daily	300	210 MBs	24 Hours
Daily	500	650 MBs	24 Hours
Daily	800	1.6 GBs	24 Hours
2 Days	500	530 MBs	48 Hours
2 Days	800	1.3 GBs	48 Hours
Weekly	1,000	800 MBs	One week
Weekly	2,000	1.6 GBs	One week
Weekly	5,000	7 GBs	One week
Monthly	3,000	3.2 GBs	30 Days
Monthly	5,000	5.2 GBs	30 Days
Monthly	15,000	16 GBs	30 Days
Monthly	21,000	36 GBs	30 Days
Monthly	40,000	90 GBs	30 Days
60 Days	8,000	8 GBs	60 Days
60 Days	21,000	30 GBs	60 Days
60 Days	150,000	210 GBs	60 Days
60 Days	280,000	420 GBs	60 Days

Bundles (Age limited: 16 years to 25 years)			
Bundle	Price (Rwf)	Data Benefits	Validity
Daily	50	60 MBs + Unlimited Whatsapp	24 Hours
Daily	100	122 MBs + Unlimited Whatsapp	24 Hours
Daily	150	186 MBs + Unlimited Whatsapp	24 Hours
Weekly	400	500 MBs + Unlimited Whatsapp, Facebook & Twitter	One week
Weekly	500	630 MBs + Unlimited Whatsapp, Facebook & Twitter	One week
Weekly	1,000	1320 MBs + Unlimited Whatsapp, Facebook & Twitter	One week
Monthly	500	25 MBs + Unlimited Whatsapp, Facebook & Twitter	30 Days

Source: <http://africa.airtel.com/wps/wcm/connect/AfricaRevamp/Rwanda/home/personal/internet/special-offers/data-bundles/>