Republic of Rwanda
MINISTRY OF YOUTH AND ICT

Rwanda Online...

Rwanda ICT Sector Profile-2014

"Excellence in Service Delivery"

March 2015

RDB | RWANDA DEVELOPMENT BOARD

rura *Inspiring development* | RWANDA UTILITIES REGULATORY AUTHORITY

nisr NATIONAL INSTITUTE OF STATISTICS OF RWANDA

Rwanda ICT Sector Profile-2014

"Excellence in Service Delivery"

Tracking ICT for Development
Towards Rwanda Socio-Economic
Transformation

March 2015

smart rwanda

CONNECT. INNOVATE. TRANSFORM

"Each milestone we reach allows
us to do more, to confront other

challenges and overcome them."

H.E President
Paul Kagame

About Ministry of Youth and ICT

The Ministry of Youth and ICT (MYICT) was established to address national priorities for economic growth and poverty reduction through the development and coordination of national policies and programs related to youth empowerment as well as Information and Communication Technology policies and programs.

Through youth economic empowerment, MYICT aims at raising a HAPPi Generation. HAPPi embed all qualities of the new Rwanda youth generation and stands for Healthy, Attitude, Patriotic, Productive and Innovative.

On the ICT Sector, the strategic objective of the Ministry is to accelerate Rwanda socio-economic transformation, improve productivity of the private sector by fostering adoption and optimal use of ICT by Rwandans.

For more information:

Website: www.myict.gov.rw
Twitter: RwandaYouthICT
Instagram: myictrwanda
Facebook: Ministry of Youth & ICT
YouTube: Myict Rwanda
Phone: +250-786791388
Email: info@myict.gov.rw

Hon. Jean Philbert NSENGIMANA
Minister
Ministry of Youth and ICT
Government of Rwanda

Foreword

As we publish the Rwanda ICT Sector Profile 2014, the Ministry of Youth and ICT joins all Rwandans to congratulate President of the Republic of Rwanda for receiving the "2014 World Telecommunication and Information Society Award". This award is the incontestable demonstration of his committed leadership and dedication towards promoting ICT development and broadband connectivity as a means of achieving sustainable development.

The Rwanda ICT Sector Profile is a compilation of indicators that have been selected to measure the Rwanda's ICT sector performance and track ICT for Development (ICT4D) towards Rwanda socio-Economic Transformation and provide valuable information for the formulation of National policies. It is an attempt to provide facts, figures and stories af the life transformed using ICTs.

During the year 2014, ICT grew at 25% while the rest of the economy grew at 7.1%. ICT contribution to GDP was valued at 3% representing more than all agriculture exports com-bined,. Phone and internet penetration standing at 70% and 28% respectively while we reached about 6.5 million mobile wallets.

This report highlight the performance of ICT Sector and the positioning of Rwanda in dif-ferent international rankings. Key ICT achievement have also been highlighted in order to inform readers of major developments that happened during the year 2014.

Rosemary Mbabazi
Permanent Secretary
Ministry of Youth and ICT
Government of Rwanda

Didier K. Nkurikiyimfura
Director General in Charge of ICT
Ministry of Youth and ICT
Government of Rwanda

Acknowledgement

This report is the result of collaborative efforts of several stakeholders who provided substantive inputs, contributions and suggestions. We wish to acknowledge the support and collaboration of the following institutions but not limited to: MIFOTRA, MINALOC, MINEDUC, MINECOFIN, MINAGRI, MoH, RDB, NISR, RURA, WDA, RRA, REB, NIDA.

We would like to thank MYICT family for their valuable commitment in the development of this ICT Sector Profile. A special recognition to Didier Nkurikiyimfura, Director General in Charge of ICT, for his coordination of this work.

MYICT would like to recognize the following people for their valuable contributions:

- Lambert NTAGWABIRA MYICT
- Gordon Kalema, MYICT
- Patrick Rwabidadi, MYICT
- Emmanuel Dusenge, MYICT

- Benoit Gasigwa, MYICT
- Sylvere NTIRAMPEBA, MYICT
- Claude Mugabo, MINALOC
- Theogene Kayumba, MINEDUC
- Alain Ngendahimana ,MINECOFIN
- Gaju Erick and Edith Munyana, MoH
- Sam Barigye, MINAGRI
- Moses Turatsinze, RDB
- Consolee UMULISA ,RURA
- Jean claude NYIRIMANZI NISR
- David Mugume, WDA
- Vicentie Nyangoma, REB
- Maurice Kayisure, NIDA

This report includes data from internationally recognised reports used to measure information society and e-Government developments, respectively the "Measuring the Information Society" of the International Telecommunication Union (ITU) and the "UN-e-Government Survey" of the United Nations (UN), which is greatly acknowledged.

What's Inside
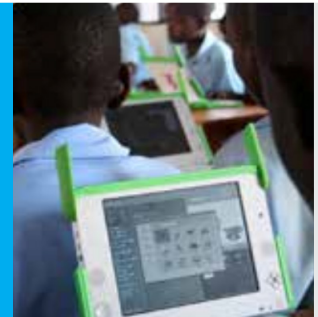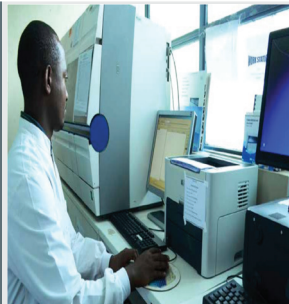
EXECUTIVE SUMMARY

For three years now, the Ministry of Youth and ICT provides an annual overview of statistical information covering the ICT sector performance and progress against its ICT for Development (ICT4D) strategy.

In particular, this year, the ICT Sector Profile emphasizes the importance ICT enabled service delivery, as it has been focused throughout this period. Similarly, it also continued to highlight the remarkable achievements, which happened in the five sectors that have been identified as priority sectors in the implementation of ICT Sector Strategic Plan of the Economic Development and Poverty Reduction Strategy 2013-2018: Governance, Health sector, Education, Agriculture, Business & Finance sectors.

In 2014, ICT sector has continued to increasingly fuel the Rwandan GDP growth as it has been among the largest contributor to GDP growth (3%) and it is still persistent to be a primary target for foreign direct investment (FDI)
into the country. It attracted US 66,354,840 and it has continued to be on the forefront of the government's development strategy. Apart from the importance of the Telecom Sector in terms of revenue generation to the government, the broader ICT sector is also experiencing growth and gaining prominence. ICT also enables and advances the delivery of Government services, including education, health care, and security. Its significant contribution to economic growth could also be directly observed through investment and job creation in the development, production, and sales of ICT goods and services and indirectly through creation and distribution of technologies that enable health, trade and finances, agriculture, retail, and a host of other industries.

The Rwanda's telecomunication industry is continuing to see rapid growth in connections, subscribers and data traffic, and is playing a pivotal role in unlocking socio-economic progress across the Country. By December 2014, the number of active phone mobile-cellular phone subscribers has increased to 70%, from 63.5% in December 2013, hence a total addition of 1,057,861 new subscribers in a period for nearly a year. Consequently different sectors especially Financial Institutions and Utilities are increasingly digitising and mobilising their products and services, reducing costs and providing compelling new experiences for consumers.

On August 19th, 2014; the Government of Rwanda and Rwanda Online Platform Limited kicked off the beginning of the first phase of implementation   of the Rwanda Online platform set to establish an integrated public service platform that will exclusively offer Government to Business (G2B) and Government to Citizen (G2C) services in the country, accessible via internet and mobile devices.

November 11th, 2014 Rwandans launched the 4th Generation Long-Term Evolution (4G LTE) with an objective of providing coverage to 95% of Rwandans by June 2017; this is step forward and critical economic stimulus for an economy that's increasingly becoming digitally driven.

It is expected that 4G LTE will usher in a completely new era that will open up new opportunities to create businesses, spur innovation, create jobs and improve people's lives.

The health Sector has continued its tremendous, Rwanda Health Management information System (R-HMIS) in each of the country's over 500 health facilities in the past two years. Since the roll out of the initial system, many modules have been added and these include, death audit reporting for all maternal, Neonatal, and child deaths, Community Health Information System, eTB-a patient level system for tracking MDR (multi-drug resistant) to patients as well as the HIV reporting and Disease surveillance system which is currently being transitioned. The percentage of health centers connected to internet remained at 93.8%, however, increase in number of clinical emergencies supported through RapidSMS is 25%, while number of patients at community level tracked using RapidSMS reached 173,131 by December 2014 up from 158,510 in 2013, which make an increase of 9%.

Fot Finance Sector, Mobile Money subscribers across all networks has now reached 6,480,449 from 2,538,651 end December 2013 which was more than twice the number of subscribers in the previous year. December 2014 the number of mobile money transactions reached Frw 691.5 billion from up from Frw 330.4 billion amount transacted in the previous year.

In Education Sector, One Laptop per Child (OLPC) program has played a key role to the enhancement of education through introduction of technology in primary schools. It also allows primary schools students early access to computer skills and computer science understanding while expanding their knowledge on specific subjects like science, mathematics, languages and social sciences through online research or content hosted on servers.

In November 2014, The Government of Rwanda signed an agreement with Positivo BGH. Through thos agreement, Positivo was going to put up a production plant of laptops, computers, tablets and other electronic gadgets in Kigali.

Telecommunication Updates

Significant developments have taken place in the Rwanda's Telecommunication Sector. The major growth of mobile subscription is mainly due to the increased competition between the incumbent Telecom Operators, who offer access to data and voice services.

By December 2014, the number of active mobile-cellular phone subscribers has increased up to 70% of the total population, from 63.5% in December 2013. Also, as of December 2014, Rwanda had 7,747,019 mobile subscribers, hence a total addition of 1,057,861 new subscribers in a period of 12 months.

In The market share as per respective telecom operators; 52.7% of subscribers for MTN, 32.7% of subscribers for TIGO and 14.6% of subscribers for Airtel.

Rwanda, Nigeria and Morocco top table of affordable internet in Africa. In the report 'Affordability Index', the top five developing countries with the most affordable Internet are all African, and is topped by Rwanda, Nigeria and Morocco. (Affordability Report, 2014.

On the Data segment, the number of Internet subscriptions reached 3,111,992, up from 2,068,179 subscriptions in December 2013. This represents an Internet penetration rate of approximately 28% by December 2014. As result, 35.6 % of the Rwandan population are using Internet through their different devices.
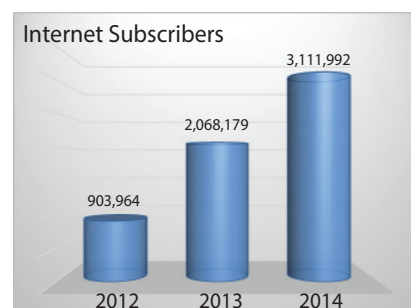
70%

Phone Penetration

MTN 52.7% Tigo 32.7% Airtel 14.6%
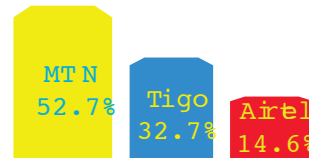
Market Share - Telecom Operators

28%

Internet Subscription

Internet Subscribers

	903,964	2,068,179	3,111,992
	2012	2013	2014

Smart Rwanda

SMART Rwanda Days is an annual event hich brings together various national stakeholders in the ICT sector–industry, experts, policy makers, development partnersto discuss how Rwanda can leverage Information Communication Technologies for economic transformation in line with the country's Vision and plans. For 2014, the event was held at Serena Hotel, Kigali, Rwanda on 2nd – 3rd October 2014. The two days conference was co-organised by the Ministry of Youth and ICT, Rwanda Development Board and Rwanda Utility Regulatory Authority. Additionally, this event was organized in conjunction with several other key partners including ITU, World Bank, Internet Corporation for Assigned Names and Numbers (ICANN), Internet Society (ISOC), VISA, Consumer News and Business Africa Channel (CNBC) among others. The theme for this year's SMART Rwanda Days is "Digitizing Rwanda" and will feature a number of high-level sessions including Digital Payments, Internet Economy, Content Localization, Open data, SMART Africa Initiative, Meeting of the Minds, Digital Innovation among others. Rwanda is at a critical juncture of its socio-economic development. The country is preparing to enter into the last 5 years of Vision 2020. By the target date, Rwanda will have been transformed into a predominantly knowledge-based economy. The role of digitization in achievement of this transformation cannot be overstated. The Smart Rwanda Days conference will thus be an opportunity for experts, policy makers as well as the industry players to identify the necessary actions to be taken to foster the maturity of digital ecosystem for Rwanda and Africa in general.

300
TRAFFIC INCREASE

250
PARTICIPANTS

Smart Africa Members

Northern Corridor leaders say the Integration Projects initiative is designed to generate sustainable political will necessary to fast track the implementation of the projects identified.

Networking is one of the buzzwords in the world of communication. With the adoption of a one network tarriff in the Northern Corridor, the art of communication is changing

REGIONAL INTRGRATION

Northern Corridor member countries adopt "One-Network-Area", roaming charges to be scrapped and cost of calls reduce by 60%. Rwanda, Kenya, Ugandaand South Sudan have mutually agreed to adopt a regional telecommunications framework for a One-Network-Area" by 31 December 2014. The regional framework for the One-Network-Area applies to telephone calls originating and terminating within the region and mandates members to adopt the following: Exemption of regional calls from surcharges applied by member states on international incoming calls. No additional charges to subscribers on account of roaming within the region. The One-Network-Area is being implemented as a result of resolutions made during the 5th Heads of State Summit for the Northern Corridor Integration Projects held in Nairobi, Kenya in May 2014.

Other Achievements

Rwanda launches 4G LTE internet

Rwanda has been re-elected a member state of the Council of the International Telecommunication Union (ITU) for 2014-2018. Rwanda earned 110 votes at the ITU Plenipotentiary Conference in Busan, South Korea.

The Rwanda's Minister of Youth and ICT, Jean Philbert Nsengimana stressed that "This is an opportunity to keep contributing to shaping the global ICT for Development agenda." He commends all ITU member states for renewed confidence to serve on ITU council.

Rwanda continues to be one of the fastest growing African countries in ICT, from e-commerce and e-services, mobile technologies, applications development and automation to becoming a regional centre for the training of top quality ICT professionals and research.
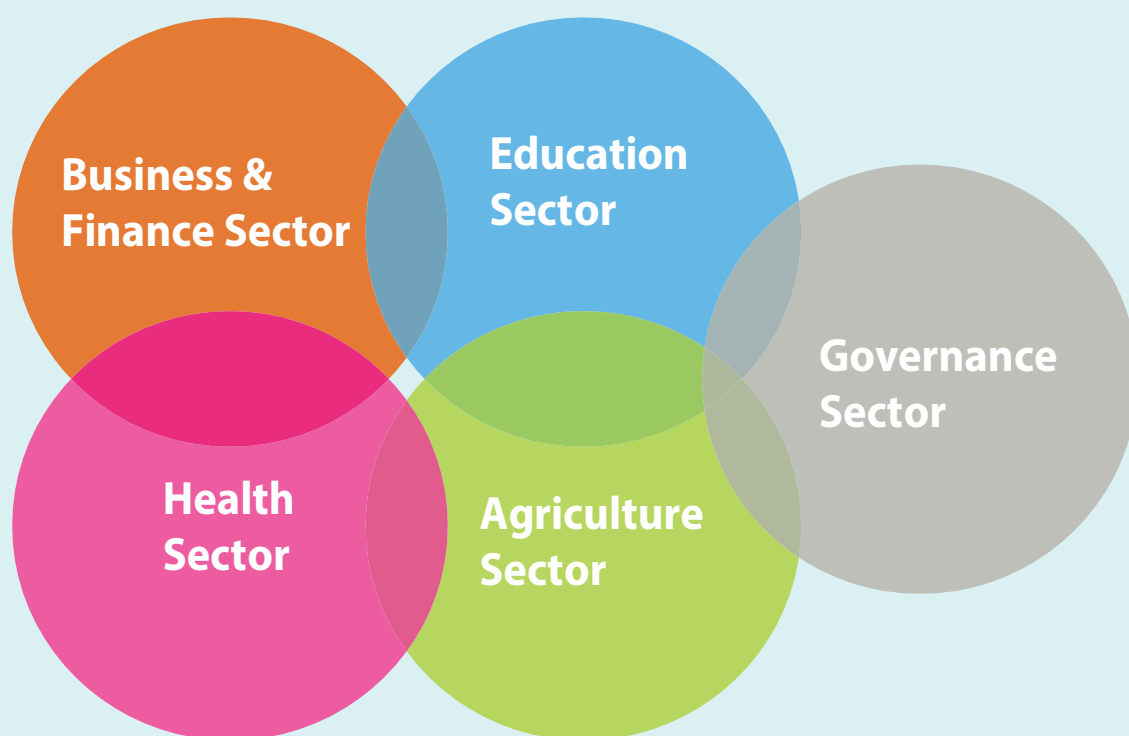
In November 2014 Rwanda Launched a Fourth Generation Long-Term Evolution (4G LTE) Internet services. In his speech, the Minister for Youth and ICT, Jean Philbert Nsengimana, said that the rollout of 4G LTE will speed up national development goals by speeding up ICT based services as well as creating jobs and proving new opportunities to deliver better services across the country. The launch of 4G LTE is one of many activities that our Government is putting in place so as to achieve a middle class knowledge based economy targets by 2020," Minister Nsengimana stressed

The Alliance for Affordable Internet (A4AI) has ranked Rwanda as the African country with the most affordable internet. The Alliance announced the rankings at the Mobile World Congress in Barcelona, Spain. In the 'Affordability Report', countries are ranked according to various drivers such as effective broadband structures, enhanced competition, spectrum allocation, and infrastructure sharing models. The report's 'Affordability Index' divides the 51 countries monitored by A4AI into two categories: "emerging" and "developing". The top five developing countries taking the most effective steps towards affordable Internet are all-African, and is topped by Rwanda, Nigeria and Morocco.

Rwanda elected as member of ITU council

ICT for Development (ICT4D) in key priority Sectors

Business & Finance Sector

Education Sector

Governance Sector

Health Sector

Agriculture Sector

The year 2014 was characterized by several achievements in five priority sectors, namely the Governance, Health, Education, Agriculture, Finance /Business sectors. The sections below provide key highlights for the year. Detailed statistics have been provided in the Annex Section of this report.
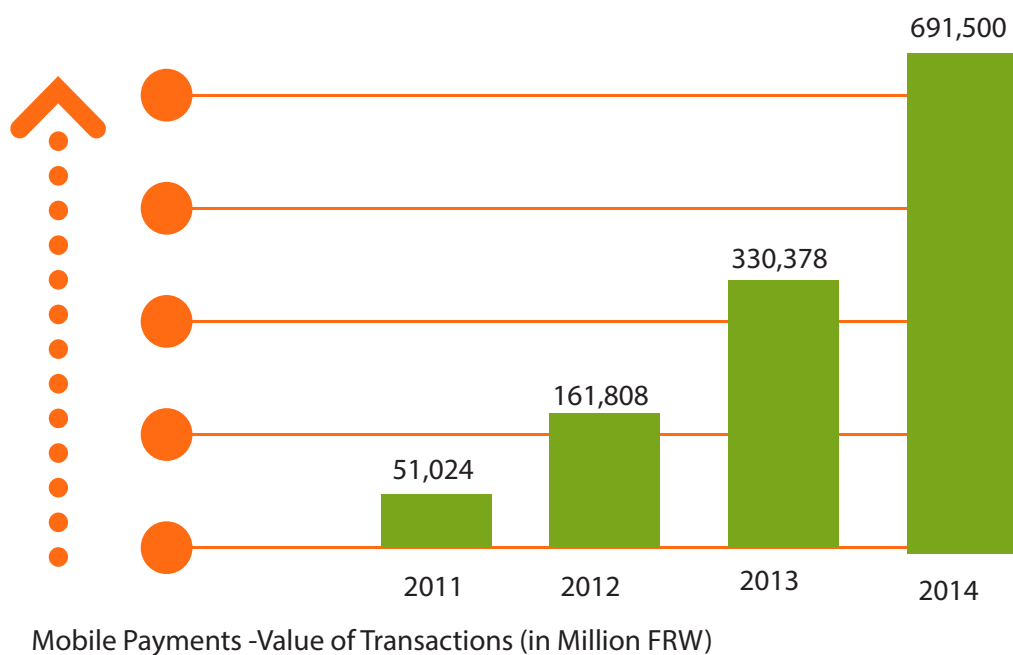
01
Business & Finance Sector

This sector has perhaps the most remarkable developments in terms of utilization of ICT and value creation, which made it the choice of this topic in this section of the ICT Sector Profile.

By December 2014, Rwanda had a total of 6,480,449 mobile payments subscribers. Compared to 2013, there was a net increase of 3,941,798 new subscribers in just a period of 12 months. As a direct effect, the volume of transactions increased more than doubled, reaching 691.5 billion.

MORE THAN

6M
MOBILE PAYMENTS
SUBSCRIBERS

6.480,449

2.538,651

1,440,541

639,673

2011   2012   2013   2014

Mobile Payments Subscribers

691,500

330,378

161,808

51,024

2011   2012   2013   2014

Mobile Payments -Value of Transactions (in Million FRW)
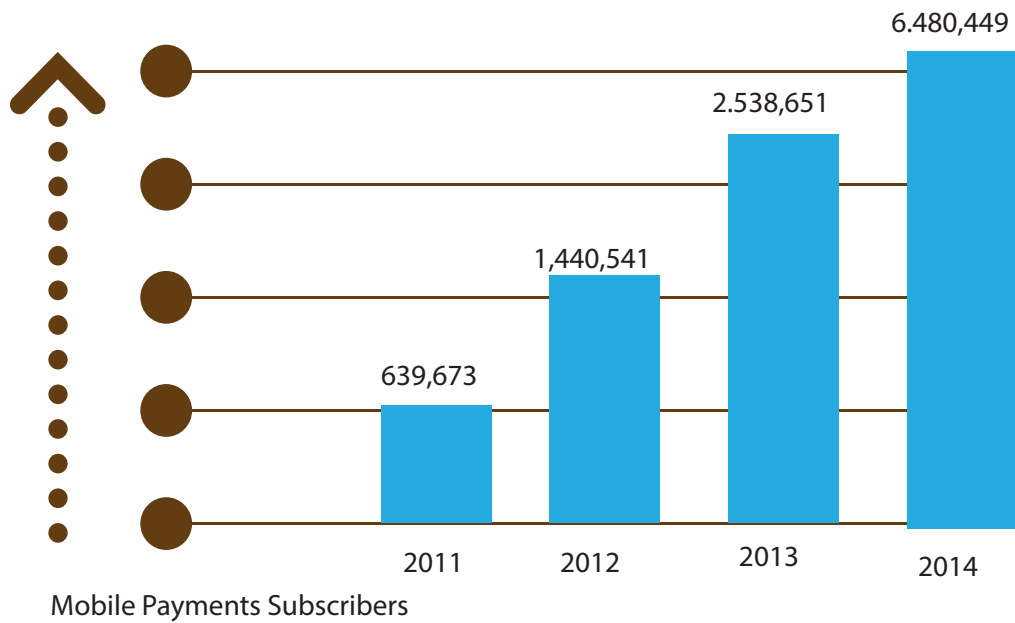
Growth rates of the payment through modernized systems, has been improved in the use of Rwanda Integrated Payments Processing System (RIPPS) in the first quarter of 2014 as customer transactions increased by 30.7% with the value of 2,024 billion in 2014 , from 1,549 billion in 2013 .

The number of POS increased by 22% whiles the volume of POS transactions increased by 88.4%.

The number of ATMs increased by 6% whiles the number debit cards tripled and credit cards increased by 131%. The Volume of ATM Transaction reduced by 6.8 %. This was due to different partnership between Telecos and Banks to enable both their clients to cash out from their accounts through their mobile phones and vice versa while they also facilitated bill payments.

17
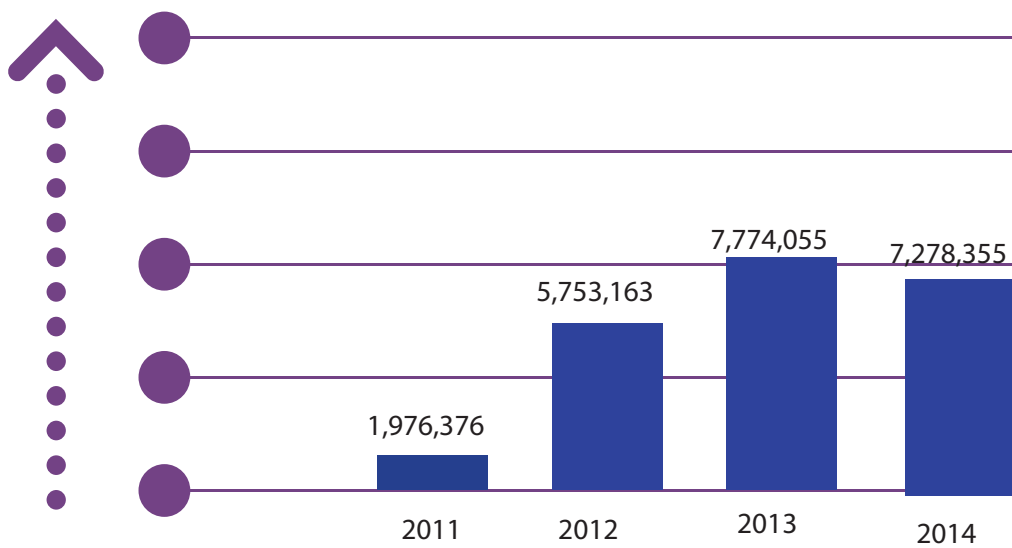
Volume of ATM Transactions

The Rwanda Revenue Authority began introducing the e-filing system in November 2011, and over the past three years use of the system picked up among taxpayers.
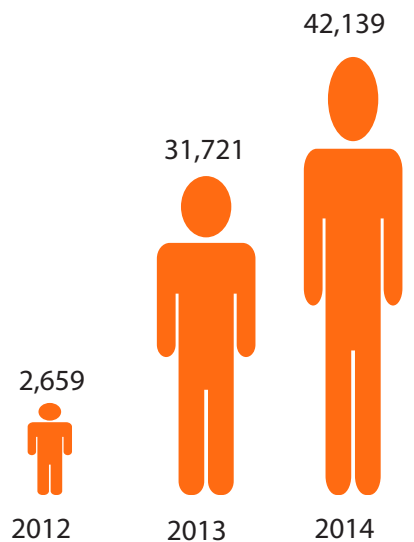
Number of Subscribers for e-Filing

These data show that the consumers' behavior is changing with time, with people preferring to use payment instruments such as mobile banking and ATMs. This is the result of the collaboration between the Government of Rwanda, local banks and telecommunication companies. They jointly stepped up their effort to increase financial literacy, increase payment systems quality, reduce and prevent fraud and increase interoperability of the mobile financial services ecosystem that addresses the financial needs of all Rwandans - particularly those that are financially excluded or inder-served.

18

02
Education Sector

Agreement with POSITIVO
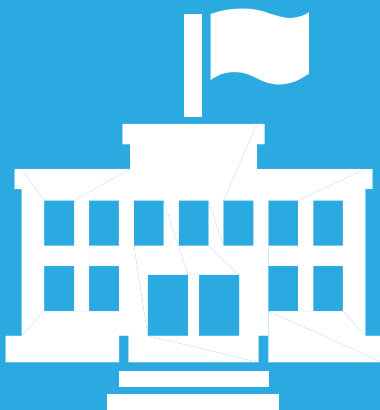
Rwanda Education System is moving toward a student's centric education supported by the integration of technology. The use of technology enables better teaching and better learning with students using digital, multimedia rich, interactive lessons enabling self-pace and collaborative learning.

In November 2014, The Government of Rwanda signed an agreement with Positivo BGH. Through this agreement, Positivo is going to put up a production plant of laptops, computers, tablets, and other electronic gadgets in Kigali. This plant will produce and sell ICT equipment to local markets and this will help a dissemination of ICT devices to schools and the key factor of successful implementation of technology in education of Rwanda.

Positivo exhibition stand in Innovation Africa Summit 2014

In recent years, the government of Rwanda has enhanced online learning to deliver cost effective, easily accessible and ever-current education to all ages and social backgrounds, regardless of time and geography. Since the system started; 5,357 students graduated in different courses. An increase of 69% in 4 years.

Students in e-Learning Session

Innovation Africa

In November 2014, Rwanda hosted Innovation Africa Summit 2014. The summit was participated by over 400 decision makers namely ministers, higher education, large and global IT companies such as HP, Microsoft, Intel, IBM, Oracle, Google and many more.

The key issues in this large meeting was national education strategies, last mile connectivity, investment in ICT for education, skills development, curriculum, training and the use technology to empower teachers and students.

As a supplement to traditional patterns of health care delivery, Telemedicine and e-Diagnosis has improved the way medical professionals share medical expertise. Numerous benefits ranging from creation of a network of specialists; improving access by health care practitioners to specialists; to improving the quality of diagnostics and treatment.

Collaborative programs of practice-based initiatives have streamlined intake, improved communication, reduced gaps in referrals and services and reduced duplicate information collection among health care service providers. The percentage of health centers connected to internet increased to 93.8%, this allows the health centers to access health information systems and medical records systems and provide better and timely reporting.

Increase in Number of clinical emergencies supported through RapidSMS is 25%, while Number of Patients at community level tracked using RapidSMS reached 173,131 by December 2014 up from 158,510 in 2013, which make an increase of 9%. With strong partnership with private sector the Number of registered private clinics and dispensaries reporting routinely using HMIS has increased from 221 to 275 in 2014.
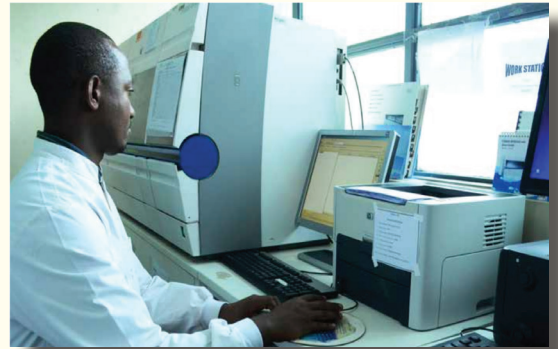
95.8%

PERCENTAGE OF HEALTH FACILITIES CONNECTED TO THE INTERNET

Number of Emergency calls for Ambulances "11,546"

HMIS data managers assisted through HMIS e-support messaging "1067"

Number of registered private clinics and dispensaries reporting routinely using HMIS "275"

04
Governance
Sector

A total of 12 institutions are now connected to the National identification Authority Database using online secure authentication, namely Traffic Police, RRA, MTN, TIGO, AIRTEL, B.N.R /Credit Reference Bureau, Immigration. Through this secure access, these institutions are able to provide better and quicker services to their constituencies.

The GCC is a centralized business intelligence and analytics system providing historical, current and predictive information on projects across all government institutions. The information provided includes objectives, targets and performance over a fixed time. 80-inches screens were been delivered and installed in 10 ministries (except MINALOC where the room is still under renovation). 3X3 video walls have been installed both at OTP and PMO. Under this track, a Discovery report of readiness in ministries and blue print report was developed and signed off. The discovery report consists of summarized KPIs from each ministry and this was developed after intensive consultations with line ministries.

12

Institutions connectd to NIDA Database

100

**services have been selected and will be automated in 4 phases**

On August 19th, 2014; the Government of Rwanda and Rwanda Online Platform Limited kicked off the beginning of the first phase of implementation of the Rwanda Online platform set to establish an integrated public service platform that will exclusively offer Government to Business (G2B) and Government to Citizen (G2C) services in the country, accessible via internet and mobile devices. The agreement between the Government of Rwanda and Rwanda Online Platform Limited, signed in April of the 2014 year, granted the concession to Rwanda Online Platform to Build and Operate the Platform for twenty-five (25) years, after which it will be transferred back to the Government of Rwanda. A total of 100 services were identified for automation and will be implemented in four phases. Go-live for the system is set for mid June 2015 and the following services will be accessed through the platform on the in-service date: Population Registry, Birth certificate, Registration for test/exam, Provisional and, Practical Driving License, Criminal Record Clearance Certificate, Building permits, Transfer of land title, Land-Subdivision Issuance of Trading License (Patent).

The number of farmers using Fertilizer Voucher Management System has an increase of 11% from 1,671,599 in 2013 to 1,859,413 in 2014. This has efficiently empowered the distribution of fertilizers to farmers.

ESoko, is system developed for electronic market price information used to collect and provide real time market prices for agricultural commodities on Rwandan markets. This system seeks to empower farmers by enabling them to make more informed market pricing decisions in order to improve on their livelihood.
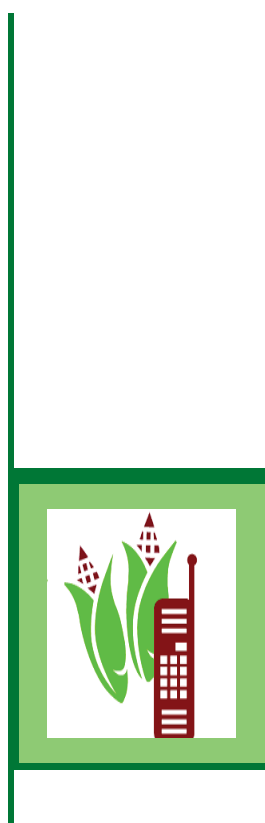
Key indicators	2012	2013	2014
Applications			
e-Soko			
Number of SMS-based transactions	9,893	11,815	11,320
Number of Web-based transactions	3,652	4,640	4,939
Fertilizer Voucher Management System			
Number of farmers using the system	1,503,448	1,671,599	1,859,413
Number of vouchers issued	501,149	557,200	642,246
Volume of fertilizers issued (in tons)	32,525	32,802	33,233
mFarmers fertilizers and seed distribution tracking system			
Number of cooperatives and agro dealers using system	-	-	721
Number of fertilizer importers using system	-	-	5
Number of seed companies using system	-	-	3

Key Achievements

Challenges & Way Forward

Skills development remains at the heart of a sustainable knowledge-based economy. This challenge will continue to be addressed by the Ministry of Youth and ICT and all its partners during the next year by focusing on developing the ICT digital literacy program intended for government employees and the community.

Though the country internet penetration has reached 28%, this percentage remains very low. The Ministry of Youth and ICT plan for next year is to increase broadband subscriptions by increasing the coverage of the 3G and 4G networks.

The number of ICT innovation centers in Rwanda is still low and there is a challenge of increasing the quality of the solutions proposed by these centers. The main focus for next year will be to strengthen these ICT Innovation centers and increase the quality of the developed solutions.

Annex

ICT Sector Structure, Efficiency and Capacity

Key indicators	2011	2012	2013	2014
Sector structure				
Separate telecommunications/ICT regulator	Yes	Yes	Yes	Yes
Status of main fixe line operator	Mixed	Mixed	Private	Private
Level of competition (competition-C, partial comp.-P, monopoly-M)				
International gateways	C	C	C	C
Mobile telephone service	C	C	C	C
Internet service	C	C	C	C
Foreign ownership (Percentage allowed)	100%	100%	100%	100%
Reg. treatment of VoIP (banned, closed, no framework, allowed)	A	A	A	A
Sector efficiency and capacity				
Telecommunications revenue (% of GDP)	26.7%	2.76%	2.73%	2.8%
Telecommunications investment (% of revenue)	28.4%	40.1%	32.3%	22%

Financial Inclusion

Key indicators	2011	2012	2013	2014
Payments				
Smart FMIS				
Number of subscribers	893	1,292	1,960	1956
Number of payments voucher processed	131,461	137,560	126,768	129,651
Mobile Payments				
Number of subscribers	639,673	1,440,541	2,538,651	6,480,449
Volume of transactions	3,420,885	22,191,674	57,147,777	104,800,000
Value of transactions (In Million RwF)	51,024	161,808	330,378	691,500
Payment Systems				
Instruments				
Number of Automated Teller Machines (ATMs)	167	292	333	354
Number of Points of Sale (POS) terminals	168	666	946	1,152
Number of debit cards	115	389,269	487,498	638,869
Number of credit cards	516	418	845	2,540
ATM transactions				
Volume of ATM transactions	1,976,376	5,753,163	7,774,053	7,278,355
Value of ATM transactions (In million RwF)	122,536	180,566	260,585	345,699
Pos transactions				
Volume of POS transactions	38,440	54,632	305,636	575,867
Value of POS transactions (In million RwF)	73	8,487	17,930	22,868
Tax				
e-filing				
Number of subscribers	-	2,659	31,721	42,139
Volume of transactions	-	17,482	212,381	339,863

ICT in Education

Key indicators	2012	2013	2014
Primary education			
Computer to teacher ratio	1:17	1:8	1:8
Computer to pupils ratio	1:40	1:15	1:15
Percentage of schools with computer infrastructure	39%	49%	49%
Total number of OLPC laptops distributed	152,768	203,763	204,321
Total number of schools covered by the OLPC program	292	407	409
Percentage of schools connected to the Internet	6%	6%	8%
Percentage of schools with a network computer lab	1%	1%	2%
Secondary education			
Computer to teachers ratio	1:6	1:7	1:6
Computer to students ratio	1:40	1:44	1:32
Percentage of schools connected to the Internet	18%	14%	16,9%
Percentage of schools with a networked computer lab	25%	31%	31%
Tertiary education			
Computer to admin. staff ratio	1:2	1:1	1:2
Computer to acad. staff ratio	1:4	1:2	1:3
Computer to student ratio	1:19	1:10	1:7
Percentage of institutions connected to Internet	100%	100%	100%
Percentage of institutions with a network computer lab	100%	100%	100%
ICT skills development			
Total number of TVET students enrolled in ICT-related programs	7,959	12,532	12631
Male	4,001	6,641	7171
Female	3,955	5,891	5814
ICT Awareness			
Number of citizens reached by ICT awareness campaigns	N/Av.	165,800	223,900

Key Indicators	2013	2014
Infrastructure		
Hospitals		
Total number of public and private nonprofit hospitals	*48*	*48*
% of public and private non profit Hospitals with telemedicine infrastructures	*21%*	*21%*
Percentage of institutions connected to Internet	*100%*	*100%*
Health Centers		
Total number of Health Centers	*468*	*477*
Total number of Health Centers connected to Internet	*451*	*457*
Percentage of Health Facilities Connected to internet	*93.8%*	*95.8%*
Application and system		
Electronic Medical record (EMD)		
Number of Hospitals using less paper in medical records	*3*	*6*
% of Hospitals using less paper in medical records	*6%*	*10%*
Health Management Information System		
Number of Health facilities reporting into HMIS	*797*	*802*
HMIS data managers assisted through HMIS e-support messaging	*1,473*	*1067*
Rapid SMS		
Number of Patients at community level tracked using RapidSMS	*158,510*	*173,131*
Number of clinical emergencies supported through RapidSMS	*176*	*220*
Telemedecine		
Number of Hospitals using Telemedicine	*13*	*13*
%Hospitals using Telemedicine	*27%*	*27%*
Calls for medical assistance		
Number of emergency calls for ambulance (SAMU)	*25,010*	*11,564*
Number of call received for clarification on health issues	*9,878*	*5,870*
EDPRS2/HSSP Indicators		
Number of registered private clinics and dispensaries reporting routinely using HMIS	*221*	*275*

Governance Sector

Percentage of districts connected to the Internet	100%	100%	100%
Total number of Business development Centers and Public access points	95	95	95
Sectors			
Percentage of institutions connected to the Internet (modems included)	33.4%	100%	100%
Video conference			
Total number of budget agencies connected	16	56	60
National ID			
Cumulative Number of ID cards produced	5,687,210	6,199,533	6,492,248
Cumulative Number of driving licenses produced	141,777	190,068	206,467
Cumulative Number of refugee cards produced	15,216	15,542	21970
Cumulative Number of institutions connected to N.I.D.A database using online authentication	7	11	12
Document tracking and workflow management system			
Cumulative Number of budget agencies connected	7	55	68
Number of subscribers	748	4,069	4,854
Volume of transactions (since of the start of the system in 2012)	5,070	131,894	366,183
Percentage of government institution using IPPIS	94%	97%	98%

List of Abbreviations

A4AI   : Alliance for Affordable Internet
ATM   : Automatic Teller Machine
BNR   : Banque Nationale du Rwanda
CNBC   : Consumer News and Business Channel
FDI   :Foreign Domestic Investment
GCC   :Government Command Center
GDP   : Gross Domestic Product
GNI   : Gross National Income
G2B   : Government to Business
G2C   : Government to Citizens
G2G   : Government to Government
HMIS   : Health Management Information System
ICANN   : Internet Corporation for Assigned Names
ICT   : Information and Communication Technology
ICT4D   :ICT for Development
ISOC   : Internet Society
IT   : Information Technology
ITU   : International Telecommunications Union
KPI   : Key Performance Indicator
LTE   : Long Term Evolution
MDR   : Multi Drug Resistant
MINAGRI   : Ministry of Agriculture
MINALOC   : Ministry of Local Government
MINECOFIN : Ministry of Finance and Economic Planning
MINEDUC   : Ministry of Education
MYICT   : Ministry of Youth and ICT
MoH   : Ministry of Health
NIDA   :National ID Agency
NISR   :National Institute of Statistics of Rwanda
OLPC   :One Laptop Per Child
PMO   :Prime Minister Office
POS   :Point of Sale
RDB   :Rwanda Development Board
REB   :Rwanda Education Board
R-HMIS   :Rwanda Health Management System
RIPPS   :Rwanda Integrated Payment Process System
RURA   :Rwanda Utility and Regulatory Authority
USD   :United States Dollar
WDA   :Workforce Development Authority