

THE Regulator

www.rura.rw | 2018



Rwanda
Utilities
Regulatory
Authority

Sector Review

TAS 2018: Transforming Africa into digital Economies

RURA Introduces a regulatory Sandbox
to facilitate Rwanda's transition into
the 4th Industrial Revolution

Drone Technology at the forefront
of Healthcare Delivery



AFRICAN COUNTRIES SHOULD ENGAGE MORE IN SETTING INTERNATIONAL STANDARDS, RURA DG

Flying the African dream

Across Africa, Middle East & Asia



☎ (+250) 788177000 (24 hour Service)
✉ info@rwandair.com



RwandAir
Fly the dream of Africa

The Regulator



RURA Meetings/
events



Air & Road
Transport



ICT



Energy



Water &
Sanitation



Petroleum

Areas of focus

www.rura.rw | 2018

Table of Contents

08



12
Lead Story

TAS 2018: Transforming Africa into digital Economies

26

Rwanda to embrace satellite technology



33



38

ICT-based economy, a secret behind Rwanda's fast economic growth



18

RURA Introduces a regulatory Sandbox to facilitate Rwanda's transition into the 4th Industrial Revolution

32

5-Point Manifesto to trigger Africa's digital revolution

46

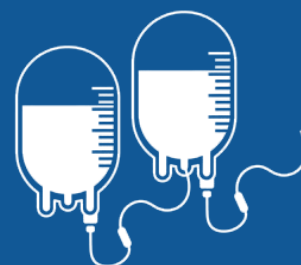
Drone Technology at the forefront of Healthcare Delivery

22

African countries should engage more in setting international standards, RURA DG

36

RURA Board approves acquisition of Tigo by Airtel Rwanda with hope for improved service delivery



PUBLISHER



This book is published by
THE LINK PUBLICATIONS LTD.

TEAM

PROJECT COORDINATOR:
HERBERT LUGABA

SENIOR WRITER AND CHIEF
EDITOR:
STEVENSON NZARAMBA
(PHD CANDIDATE)

SALES & MARKETING:
FRED NDOLI

CONTRIBUTORS:
EDWARD OJURU
DENIS BAYINGANA
IRENE AKALIZA

www.rura.rw | 2018

56

National ID
for faster,
efficient
service
delivery



62

Rwandair's
impeccable
rising path

76

Methane Gas extraction
doubles Rwanda's
Energy Output



87



72

Rwanda gears
up Energy
generation to
spur Socio-
economic
transformation

RURA takes over
regulatory responsibilities
of the Petroleum Sector
and starts with mapping
of all stakeholders



82

Liquefied Petroleum
Gas penetration is
impressive

84

SP Ltd embraces
digital edge in
delivery of its
services

90

With the current
pace, Rwanda
is set to attain
100% targets in
Water supply and
sanitation in 2024

GRAPHICS, CREATIVE
DESIGN &
PHOTOGRAPHY:
**NEW AFRICA
COMMUNICATIONS
GROUP**



COPY RIGHTS

All rights reserved. No part of this publication may be reproduced in any material form (including photocopying or storing in any medium by electronic means) without the prior written permission of the copyright holders. Application for the copyright holders' written permission to reproduce any part of this publication should be addressed to the publishers.

Rwanda Ranking on Global Scene

**Rwanda has
changed for
good and
for ever**

Global
Competitive Report
2015

Most Improved
Country Globally in
Human Development
since 1990

Global
Information Technology
Report 2015

1st
country in ICT
Promotion Globally

United Nations
Report 2018

4th
Largest
World Peacekeepers
Contributor to the UN

World Health
Organization 2017

1st
country in the World
to incorporate drone
technology in health
system

Global Gender
Gap Report 2017

1st
Country in Africa in
closing Gender Gap

H.E Paul Kagame
President of the Republic of
Rwanda, the Vision Bearer



The Regulator

Corruption Perception
Index 2017

3rd

Least Corrupt
Country in Africa

World Economic
Forum Report 2017

Safest country in
Africa and

9th

Globally

World Bank
Doing Business
Report 2018

2nd

Easiest Place to do
Business in Africa

World Travel
Guide 2017

3rd

Greenest Destination
Globally

Gallup Global
Report 2015

Safest Place to Walk
at Night in Africa and

5th

Globally



ICT Quotes



"For a landlocked country you want first of all to address the infrastructure problems, which is logistics, transport, communication and so on and so forth," Kagame tells Wired.co.uk. "But you also want to get involved in high value products and in services because these are not directly affected by the position we're in of being landlocked, or they are not as affected as much. So some of the things are just dictated by the nature of our economy, of our country." He added



"There are challenges here we need to address, but there are people here and there are ideas here. There are innovations that we can actually generate from within to solve our problems, so why not do that as these ones have a tendency to last and be more effective, because they are very sensitive to the challenges we have in the country."



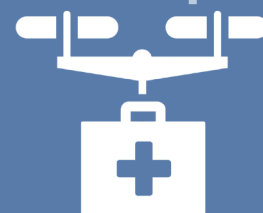
"For me, IT came and found me here, but it came at a time when I was already grown up and my involvement with it is limited. For [a] young person, the possibility to innovate and to solve problems is limitless, so the earlier you start that in education, the better -- that is one point," President Kagame said.



"Tablets are very useful devices," Kagame says, although he recognizes that a device is only as good as the content that can be accessed through it. "So we need to also concentrate on the creation of content ourselves."



"This use of unmanned commercial drones to transport essential medical products is a milestone for Rwanda in many respects. Rwandans have learned to embrace innovation, especially when it is clear, that it can help us solve the challenges we face. This attitude has enabled us to overcome great odds in the last twenty-two years, and makes us optimistic about how much more we can achieve, by working together with good partners. It starts with the right mindset, to get things working properly. "Good enough" is no longer enough. We need to aim for the best." - President Kagame speaking at the launch of Zipline medical delivery drones set to deliver blood across Rwanda, marking the first ever use of this technology to deliver health services



The Regulator



"One of the hard pieces of work lies in maintaining both the investment and especially the policy focus to get maximum benefit. President Paul Kagame's government has done that very well, encouraging both smart ICT policies and in general supporting a more business-friendly environment," Andrew Mack, former World Bank employee and regular contributor to East Africa Business Week, told IPS.

President Kagame explains a time when he was in an airport and the security staff were concerned about the influx of children into the building. "They were all over the place... I think the security people thought they would cause a security problem." It turns out that the children were simply trying to connect their laptops to the free airport Wi-Fi. "What they were doing is just enormously useful for their learning and the excitement for the activity of their brain, it being stimulated to that level."



"The internet is a needed public utility as much as water and electricity," declared President Paul Kagame at the Transform Africa summit held in Kigali.



"The Global Goals Provides a framework and opportunity to raise our focus beyond connecting people, towards innovation, transformation and growth." UN Broadband Commission for Sustainable Development.



"I congratulate the Rwandan people and the government for all achievements in the use of ICTs for sustainable development and for wide contributions. The progress of about 28 per cent internet penetration, more than 70 per cent mobile phone penetration and the recently adopted cybersecurity policy are some of the indicators of the government's efforts toward achieving the benefits of e-Governance systems." - The Secretary General of Commonwealth Telecommunications Organization (CTO), Professor Tim



"Africa is not as prosperous as it should be because our cities are too small and disconnected. This situation is changing rapidly and Africa looks set to emerge as one of the planet's great centres of growth, innovation, and opportunity in the generations ahead," said President Kagame.

Lt Colonel Patrick
Nyirishema, DG RURA



Foreword

RURA is pleased to unveil the first edition of *"The Regulator"*, a quarterly publication designed to bridge the communication gap between us and all stakeholders in the utilities sector.

Since 2002, Rwanda Utilities Regulatory Authority (RURA) has been regulating utilities such as Transportation of goods and persons, Information Communication Technology (ICT), Broadcasting, Postal services, Energy, Water and Sanitation, Downstream Petroleum and Gas and more recently, Radiation Protection. In this edition of the quarterly magazine, esteemed readers will find highlights of how far RURA has moved in streamlining delivery of utility services in Rwanda through regulation.

Under the visionary leadership of H.E President Paul Kagame, Rwanda is on the path to becoming a middle income country, and public utilities are crucial to achieving this vision. RURA as a regulator is the custodian of properly functioning and economically sustainable utility sectors. We have also been building capacity to provide regulatory guidance for emerging technologies and foster innovation in the country. All our efforts are geared towards contributing to the Government's vision of delivering economic growth and prosperity for all Rwandans.

RURA has developed the necessary capacity for Quality of Services monitoring and enforcement, handling of consumer complaints, setting tariffs and put in place regulatory tools to ensure services are accessibility and fairly priced. This has had a good impact in improving the quality of services to the public while at the same time creating a good environment for investors in the utilities sector by guaranteeing good return on their investments.

At the core of this regulatory journey, is the integration of IT in delivery of services. We have moved from a time when a consumer would have to carry cash to the service provider's office to settle bills, to a time when bills are paid using mobile phone platforms. A lot of progress has been made across all utilities. For example, in transport sector, we have moved from a chaotic and erratic transport system characterized by unpredictable small operators, to bigger and more accountable operators, with pre-defined routes and using smart cards to pay commuter fares.

The Government transport policy aims at establishing a modern urban mobility system, which enables efficient and environmentally friendly movement of people and goods within the City of Kigali and across the country. RURA is working with the Ministry of Infrastructure and all stakeholders (public institutions and private operators) to achieve this.

As a utilities regulator, our promise is to continue strengthening capacity across all regulated sectors, to ensure that the interests of all stakeholders (government policy objectives, consumers and investors) are met for sustainable economic development of Rwanda. We are striving to be at the forefront of smart regulation and to be a global point of reference for utility regulation in the information age.

I hope you will find the magazine informative and entertaining. Your feedback will be highly appreciated.

Lt Col Patrick Nyirishema
Director General



ICT has revolutionised sectors like health, education, banking, transport, trade and industry, security, justice, administration and media. For instance, leveraging e-medicine, e-learning, e-banking and e-payment has been critical in fast-tracking development.

Part of Spectrum Monitoring system
that monitors all frequencies (Mobile
phone, FM radios & VHF)





TAS 2018: Transforming Africa into digital Economies



President Kagame chaired different side meetings, including the Smart Africa board and Broadband Commission meetings

By the Link Team

The 2018 Transform Africa Summit has left behind a great sense of resolve in regard to what the African continent needs to do to leverage on technological advances to create digital economies that will drive the continent to greater heights. Over 4, 000 participants participated in this year's summit which started on May 7, 2018 and ended on May 10, 2018, under the theme 'Accelerating Africa's Single Digital Market' –with a major focus on how digital innovations and policies can help the continent implement the African Continental Free Trade Area (CFTA).



President Kagame making a keynote address during TAS 2018



Dr. Hamadoun Touré, the Executive Director of Smart Africa speaking at TAS 2018

President Paul Kagame, the current Chairman of the African Union (AU) and the Chairman of Smart Africa, which is behind the annual flagship event, rallied the continent to embrace technology as a driver and enabler of socio-economic development if it has to meet its development goals. "There is no doubt that technology is the foundation of modern, high-income economies. That is why we are investing so much in physical infrastructure and in the education required to use it,"

"These efforts are already bearing fruit.

However, even the most advanced technology cannot compensate for shortcomings in other areas which are essential for economic competitiveness," President Kagame said during the official opening ceremony. President Kagame, who also chairs the Broadband Commission, said that modern technology will go a long way in fostering regional integration and cooperation, which are currently central among the continent's ambitions.

President Kagame said that for the continent to fully implement the CFTA, which was signed in Kigali on March 21, political will, both from governments and the private sector, will be essential, but at the heart of it all, technology and digital reforms must act as enablers. "This agreement will transform Africa, but only if we translate its provisions into reality on the ground," he said.

"A favourable investment climate is critical in order to build trust in African economies, attract the right partnerships, and spur innovation. Indeed, many African countries are already among the leaders in business-friendly reforms," President Kagame said.

He however added that achieving good rankings is not an end in itself but the goal should be to attract more and better investment, which he said requires effectively communicating the facts to global markets, and "even to our own investors right here in Africa".

"We must work harder to ensure that Afri-

can private capital is mobilised to participate fully in major projects on our continent,"

"There is this myth that we always have to look outside the continent to fund major initiatives. But this simply cannot be true when Africa is losing billions every year through lost taxes, sending private assets abroad, and other factors," he said.

Africa not poor

During the summit, President Kagame demystified the narrative that Africa is a poor continent; pointing out that Africa is not poor but stereotyping and lack of self-belief have led to Africans embracing the poor mentality.

"The issue has more to do with the mindset, that it is normal to use our money for consumption, while we leave strategic, long-term investing to others. It means that no matter how much we earn, we would remain poor,"

"Whether this comes from colonialism or not, is irrelevant. It is up to us to identify mindsets that hold us back as a continent, and change how we do business," President Kagame said.

President Kagame and many of the key speakers affirmed that the application of technology and innovation would help the continent harness its full potential and that coupled with the abundant resources would help propel the continent to desired levels of development.





President Kagame, ECONET Founder and CEO Strive Masiyiwa and other guests during the meeting at TAS 2018



President Kagame greets delegates before addressing TAS 2018

The Executive Director of Smart Africa, Dr. Hamadoun Touré, said that it is time Africa took its place on the high table and cease being just part of the menu for the whole world to devour.

"This beautiful building is sending a message to the world that Africa Rising is not just an empty narrative but an indication that Africa is taking its place on the high table & not just being part of the menu," he said.

He reiterated that since the Transform Africa Summit started four years ago, it has become a platform for the continent to seek ways to transform itself into a digital single market, with the leadership of able minds such as President Kagame and other partners such as Carnegie Mellon University.

Dr Touré said that the summit has brought together the continent's policy makers, scholars, innovators and creators to seek ways of unlocking the continent's value chains and come up with technology-powered ideas that would help the continent address challenges hampering development.

"It has become more apparent to us that if we come up with well-established, harmonised, and forward-looking regulatory

frameworks, create connectivity among our people by putting in place necessary infrastructure, we can achieve our development targets,"

"The summit has also proved to us that turning our countries into digital economies would make it easy for us to implement the CFTA by using technology to break barriers that are currently holding us back," said Dr Touré. He also pointed out that membership to Smart African has increased from 22 countries to 24.

Among the key topics tackled during the summit is how digital economies can unlock the continent's agricultural potential and boost industrialisation. Smart Africa has mapped out a \$300bn investment plan, which if achieved is expected to propel the continent to tremendous levels of development.

The summit focussed on how government and private sector partnerships can be leverage to be an enabler of development with Heads of State and Governments, their representatives, First Ladies, UN Broadband Commissioners, Ministers, Public & Private Sector, International organisations, Industry

leaders, Investors, Entrepreneurs, Young innovators, Civil Society and Academia all giving their views.

Delegates called for the scaling up of access to internet by making it accessible to many and less expensive and the need to harmonise spectrum standards for all to benefit.

Prominent speakers such as Nicholas Negroponte and Billionaire businessman Carlos Slim Helu called for improved access to connectivity and the need to make it a human right rather than a commercial good.

Prof. Jared Cohon, President Emeritus and University Professor, Civil and Environmental Engineering, Public Policy at Carnegie Mellon University, said that achieving a single digital will, among other things, open economies leading to impacts such as job creation and set the continent on the right development path.

Transform African Summit is an annual summit which is hosted in Rwanda since the last four years, bringing together the world's best tech minds.

TAS 2018 Pictorial



- 1 President Kagame addressing the opening ceremony
- 2 From left, Clare Akamanzi, RDB CEO, Strive Masiyiwa, Dr Hamadou Touré and President Kagame share ideas.
- 3 RURA Director General Lt Col. Patrick Nyirishema in one of the discussions at TAS 2018
- 4 President Kagame chairing a meeting at TAS 2018



RURA Introduces a regulatory Sandbox to facilitate Rwanda's transition into the 4th Industrial Revolution

By Stevenson Nzaramba

The fourth industrial revolution is a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries. The fourth industrial revolution builds on the digital revolution, representing new ways in which technology becomes embedded within societies and even human body. The 4th industrial revolution is marked by emerging technology breakthroughs in a number of fields including robotics, artificial intelligence, nanotechnology, quantum, computing and biotechnology.



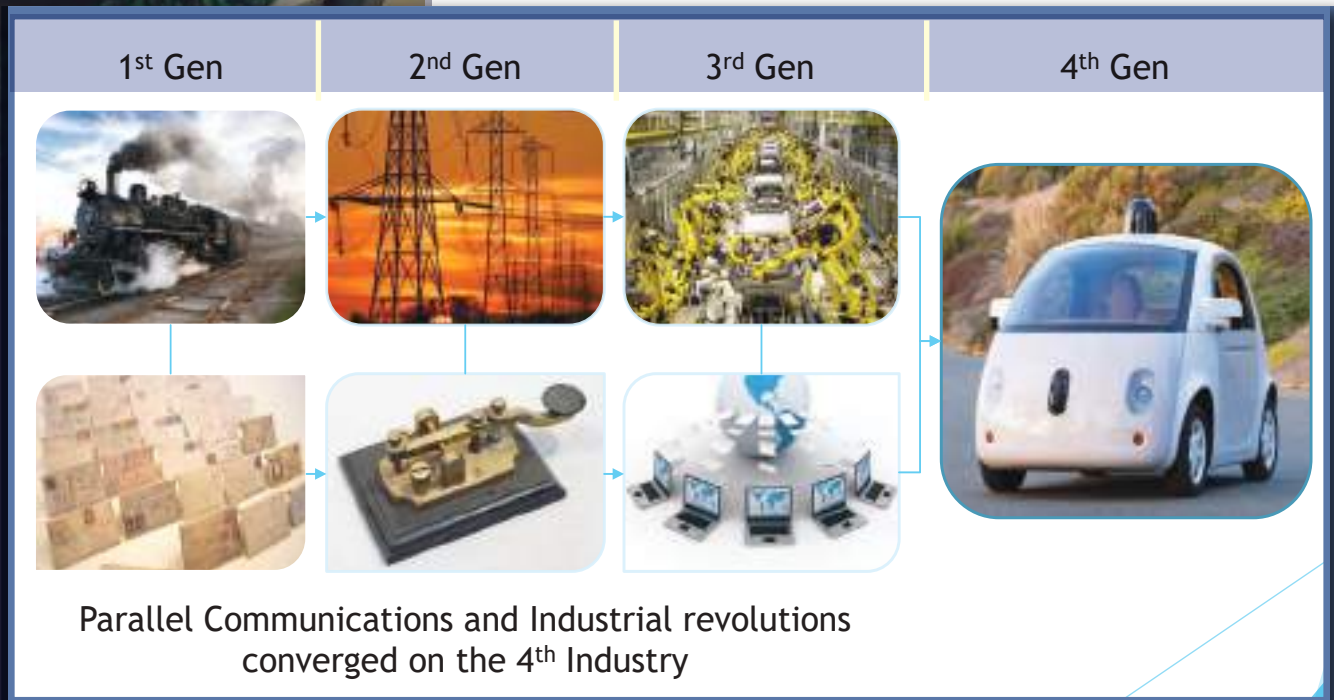
During the Workshop on the 4th Industrial revolution that took place on 2nd February 2018 at Marriot Hotel, The Director General of Rwanda Utilities and Regulatory Authority Lt Col Patrick Nyirishema noted that “it is the opportune time for Rwanda to start to hold conversations towards transiting into industrial revolution. Looking at the emerging technologies, we decided with stakeholders to organize and bring together people who

are in the system of technology to leverage to the development of Rwanda”.

He further noted that Rwanda is at an exciting time moving from Vision 2020 to Vision 2050 as this will shape the flagships of Vision 2050. He noted that the biggest driver of vision 2050 will be the 4th Industrial revolution. He further highlighted that our generation should take advantage of the good Leadership of his Excellency President Paul Kagame. The DG noted that revolutions change the rules of the game and status quo changes creating a big room for improvement.



The sandbox framework will create and encourage innovation, taking into consideration the risks posed and made responsive to support time to market new technological solutions in a cost efficient manner



What is RURA's role in transitioning into the 4th Industrial Revolution?

RURA is a multi-sector regulator trying to enable the transition into the 4th Industrial revolution in regulated sectors including transport, energy, cyber security and sanitation among others. In order to facilitate this transition and enable innovation, RURA is working on a regulatory sandbox. The regulatory sandbox will be a framework set up by a regulator that allows innovators to conduct live experiments in a controlled environment under the regulator's supervision.

According to RURA's analyst, Fiacre Mushimire, "the sandbox framework aims at encouraging the use of new technologies in various regulated sectors such as financial services sector, transportation, postal services and to improve operational and customer engagement capabilities by leveraging analytics and cloud computing and storage". He further noted that the fast evolving technological landscape where new and emerging technologies are becoming

more diverse and sophisticated requires a responsive and progressive regulatory framework to facilitate the development, testing and adoption of promising technological innovations.

The sandbox framework will create and encourage innovation, taking into consideration the risks posed and made responsive to support time to market new technological solutions in a cost efficient manner. The 4th industrial revolution is being driven by efficiency, reducing the cost of labour, increasing productivity, data driven decision making for managers, customer feedback and community based innovations.

What can be done?

In the plenary discussions, participants discussed the way forward as acknowledging changes ahead, embracing a world of disruptive change, subjecting our structures to the levels of transparency and efficiency that will enable us maintain our competitive edge and understand the change on people, privacy, consumption patterns and how we develop our carriers.

DG Patrick speaking during the workshop



Participants listening attentively during the Workshop on 4th Industrial Revolution



African countries should engage more in setting international standards, RURA DG

By The Link Team

The Study Groups of ITU's Telecommunication Standardization Sector (ITU-T) that drew experts from around the world to develop international standards known as ITU-T Recommendations have called on African countries to be more involved in setting international standards which act as defining elements in the global infrastructure of information and communication technologies (ICTs).



Apart from the conference tackling the bridging standardization gap on the African continent and beyond, it also marked the celebration of the 50th Anniversary since the creation of the first four ITU-T Study Group 3 Regional Groups in 1968 and was held together with two very important events taking place in the continent during the same month of February.

The first event was the African Regional Standardization Forum (RSF) for Bridging the Standardization Gap on Economic, Regulatory and Policy Trends in a Fast-Changing Digital World held on 5 February 2018 focusing on emerging economic, regulatory and policy trends. The Forum was hosted by the Rwanda Utilities Regulatory Authority (RURA) at the Kigali Marriott Hotel in Kigali and was followed by the meeting of ITU-T Study Group 3 Regional Group for Africa (SG3RG-AFR) on economic and policy issues from 5-8 February 2018 at the same venue.

The forum discussed economic and policy matters all of which were aimed at propelling Africa into the future. Experts who attended the meeting indicated that there was need to engage several players from different countries across the world in setting international standards which would accommodate all new technologies that are being developed.

Patrick Nyirishema, the Director General of Rwanda Utilities Regulatory Authority (RURA), one of the organizers of the forum, underlined the importance of why African countries have to be part of the contributors in setting international standards at the global stage. "Africa should be more involved in bridging the shape of global standards. The times when standards were developed by other continents and literally adapted by Africa are past, we want to change this and continue being part of the developers of these," he noted.

He went on to say that the forum was an ideal platform for players to address the standardization needs and draft recommendations that align with countries' priorities. "This forum is also an opportunity for everyone to take part in creating and adopting standards that would drive the fast changing digital world," he said.

Lara Srivastava, the head of International Telecommunication Union (ITU's) 'Bridging the Standardization Gap (BSG) Programme', emphasized during the conference that ITU-T is leading efforts to improve the capacity of developing countries to participate in the development and implementation of ICT standards.

The disparity between developing and developed countries in their standards capability continues to be a factor in the persistence of the digital divide. This disparity diminishes opportunities for economic develop-

“

52

Today Africa has written standards, making it one of the ITU regions with a high number of contributions

ment and technological innovation. It is critical to have a platform where different stakeholders take part in decisions that benefit them, highlighting that the standardization forum was yet another moment to remind countries of the importance of setting standards for technologies.

“It is good to note that today, Africa has 52 written contribution standards, making it one of the ITU regions with a high number of contributions. This means that Africa has in the recent past put in place many standards in regard to ICTs” said Lara. She went on to say that International standards increase competition and reduce costs, they enable companies in developing countries to access the global market-

place, but also enable global players to access emerging markets.

Other standards that experts were pushing for include those that relate to the reduction of roaming costs and charges on mobile financial services, and privacy in big data, among others. The goal of bridging the standardization gap has been moving up the ITU agenda since the 2002 Plenipotentiary Conference in Marrakesh (Morocco) which adopted Resolution 123 calling for initiatives to assist in closing this gap.

Later, the 2004 World Telecommunication Standardization Assembly (WTSA) held in Florianopolis (Brazil) adopted Resolution 44 (“Bridging the standardization gap between de-

veloping and developed countries”). Resolution 44 was updated by WTSA in 2008, held in Johannesburg (South Africa) giving further impetus to the work of ITU-T in this area.

In October 2010, the Plenipotentiary Conference held in Guadalajara (Mexico) established bridging the standardization gap (BSG) as one of the three strategic objectives of ITU-T. ITU’s Plenipotentiary Conference in 2014 held in Busan (Korea) then confirmed BSG as one of the 5 strategic objectives of ITU’s standardization sector (ITU-T).



The Minister for information and Technology Jean De Dieu Rurangirwa, listens as the Director General of RURA Patrick Nyirishema speaks during the conference.



everywhere you go

MTN Rwanda transforms Networks to effectively serve the demand of their growing clients

MTN Rwanda is in a drive to transform their network as they prepare to effectively meet the demands of their growing clients. The transformation and modernization plan which kicked off on 29th March 2018, is aimed at ensuring seamless data quality and delivering the best customer experience across the country. MTN's Chief Technology and Information Officer, Mohamad Kiwan, said the MTN Network Transformation plan began with modernizing and expanding the mobile network for voice in the last quarter of 2017.

"Preparations to start on data modernization which started on 29th March, is still ongoing and it is expected to be completed by mid-May. We started with the final phase of data migration from the old network capacity to the new network capacity for Kigali. This will allow us to be ready for the growing demand on the market," he said.

MTN has invested \$20 million on the U900 project that will enhance 3G coverage, data volume and improved data speeds using the 900 MHz spectrum. 272 sites in Kigali will be upgraded with new equipment using the new U900 technology for 3G. Modernizing the network with future proof technology is to accommodate the increasing number of smartphone users and meet the demand of new



Muhamad Kiwan, Chief Technological officer MTN Rwanda

services and applications. Implementing this technology involves many activities, which includes removing old existing equipment and replacing that with new equipment with double the capacity of the current network.

"During this period however, there will be some degradation in the quality of service in some areas where the migration is ongoing. We highly appreciate the patience of our customers during this process as we upgrade our network," Mr Kiwan added.

MTN is committed to accomplishing its goal of improving on the quality of service for its esteemed customers with flawless 3G speeds and more so, the highest quality of service, all within 6 weeks.

**Mohamad Kiwan,
Chief Technology & Information Officer (CTIO)
MTN Rwanda**



Rwanda to embrace satellite technology

By Denis Bayingana

Rwanda is currently readying itself for satellite technology as one of the key tools to monitor implementation of the Sustainable Development Goals (SDGs) in the country. This was mentioned during the 5 Day Workshop that run from 12th to 16th March 2018 at Marriot Hotel hosted by RURA in collaboration with East Africa Communications Organisations (EACO) on satellite regulations. The workshop on satellite regulations brought together delegates from different African countries including ICT regulators and telecom.

According to the Director-General, Rwanda Utilities Regulatory Authority (RURA) Patrick Nyirishema, satellite communication can play a significant role in facilitating the implementation of SDGs. "African countries acknowledge ICT as a pillar for socio-economic growth. And, satellites play a key role in connecting Africa to the rest of the World," Nyirishema said. He added, "Definitely, satellite is very important particularly for SDGs, we need to have the means to link various parts of work, to monitor targets, to collect required data from across the continents, analyse it and help to inform policy and regulation and all development interventions."

The workshop, which attracted delegates from African countries including ICT regulators, and representatives of

International Telecommunication Union (ITU), aimed at raising awareness about satellite regulatory issues. "This workshop was very important not just for Rwanda but for the East African region and the continent in general because satellite is a critical and important technology for communications. Africa is a large continent and a very big part of Africa relies on satellite to be connected to the rest of the world, whether it's for TV, Internet or communication in general," said Nyirishema.

According to the Director-General of RURA, the cost of launching satellite has gone down in the recent past and what would stop the country from building and launching its first satellite in the orbit is not just the skilled manpower and resources but also other processes including regulatory matters which was partly addressed in the workshop.



Executive Secretary-EACO, DG RURA during a group photo with participants

“We (Rwanda) are already looking at getting involved with CubeSat and Microsatellites. This is a trend, we have seen some countries do that and we are exploring that, we are taking steps towards that. But that leads to a bigger objective, which we hope that, as continent, we can organize ourselves to launch even bigger satellites and build a knowhow to do that,” he said. “Africa and Rwanda, to be specific, use satellite. But what we are asking ourselves most is why African countries have not managed to launch satellites.”

“We have realised that all the cost of being able to launch a satellite is going down. It’s not about the knowledge and resources but also it is about the process for the country to be able to successfully launch the satellite”. The DG added that a time when Africa is trying to claim its position in space, it is good to have ITU experts come here to train African experts to have a complete understanding



Participants attending the workshop on satellite regulations at Marriot Hotel



of what is required to successfully launch a satellite from a process standpoint.

He said, there are a few countries that have already launched their satellites. "We are looking at getting more countries or regional blocs or the continent working together to also get into the space-faring nations and to build own satellites." Ally Simba, the Executive-Secretary of East African Communications Organisation, said that they are looking at ways of securing an orbit location, for the region to be able to launch a satellite and all the process involved. Simba noted that, as the East African region

embarks on the move to build a single market, it is imperative to look at what is needed to have regional experts in the region trained in satellite regulatory matters.

"We are at a time when satellite launches are increasing and, as the East African region, we are looking at how to launch a regional satellite. We have put that in our strategic plan for the next three years to see what the six countries in the region can do to have own satellite for communication," he said.

But Simba is positive that once experts play their role well, then politicians

will be left with no choice but to give it a go ahead. "I think the issues of political will is all about experts telling politicians how important it is to have our satellite in space. We will do our job to move a step further towards implementation," vowed Simba.

He observed that ICT is an enabler of any other sector, adding that without communication you are not able to do any development activities. "That is why we believe that this satellite project its intended targets. For instance, if you can get 10 per cent of broadband penetration you can increase GDP by 1 per cent. If we can have a satellite that connects our region, then we increase broadband penetration and grow our GDP," he said.

Akim Falou Dine, an expert from International Telecommunication Union Space Services department, meeting the media on the progress made in Africa's satellite communications, said that this training of regional experts will go a long way in helping the continent better understand satellite regulation and pave way for Africa to claim its position in the orbit. "I think the future of Africa (owning an equal share in the orbit) is very paramount because Africa is very big and with the big population, satellite can help them to be connected to the world," Dine said.

Currently, there are less than 10 countries in Africa that have launched satellites in the orbit. When asked what limits Africa in this aspect, he pointed to skills gap and not having the required resources for satellite launch, among other factors. "To be able to launch a satellite, you need resources, skilled people (knowledge) and to understand the involved regulation. Only countries like Nigeria, Egypt, Kenya, Ghana and South African have broadband CubeSat," Dine said.

To build a small satellite such as CubeSat, according to Dine, it requires about \$20,000 and the cost of launching the satellite in orbit goes for about \$80,000. Dine said that his mandate during the five-day workshop was to help interested participating countries to prepare their application programme interface (API).

“

Currently,
there are less
than

10

countries in
Africa that
have launched
satellites in
the orbit

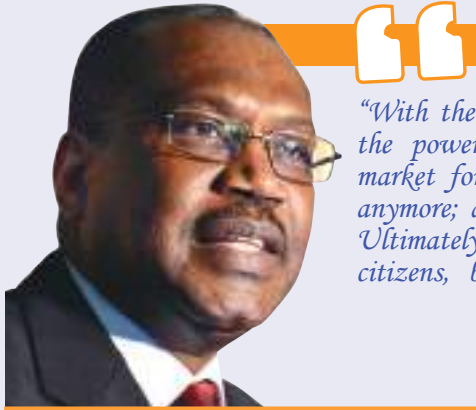
Quote



“Investment in ICTs is essential in taking any country to the next level of productivity and efficiency. Investing in ICTs is not at the expense of other sectors, investing in ICTs results in benefits for every sector and the earlier you start the better.”

H.E Paul Kagame,

President of the Republic of Rwanda
Chairman, Smart Africa Board



"With the adoption of the Smart Africa Manifesto, Africa is looking at harnessing the power of Technology to help attain its goal of creating a single digital market for Africa. Our leaders envision a continent where borders do not matter anymore; a continent where the policies and regulation walls have been torn down. Ultimately, they envision moving from 54 national markets into a single one where citizens, businesses and Governments can fully benefit from digital economies."

Dr. Hamadoun Touré
Executive Director, Smart Africa

Smart Africa's ambitious but achievable goal is to attract \$300 billion worth of investments in ICTs through 13 priority (flagship) projects designed to accelerate socio-economic development in the continent.

The flagship projects are: Smart Cities & Communities, Data Centres, Creative Economy, Cyber security, High Tech Parks, Digital Literacy, Intra-Africa Cross-border Connectivity, ICT Industry development, Digital Economy, Capacity Building/Smart Africa Scholarships, big data/Data Measurement for Development, Access (Broadband) & Green Economy as well as Entrepreneurship Youth Innovation and Job creation. Below are details of two of the 13 projects:

Smart Cities & Communities (Rwanda)

The United Nations predicts that Africa's urban population will shoot up by 16% with over 56% of Africans living in cities by 2050. Africa will therefore face numerous challenges in providing social services such as transport, housing, education, health, water, energy and safety to the growing urban population of mainly younger people.

The Smart Cities project seeks to integrate shared ICT infrastructure and services into management and provision of critical public utilities and services in rural and urban settings to achieve smart energy, smart trans-

port, smart water and sanitation, smart social services and smart environment.

The project will leverage innovative public private partnership models involving Mobile Network Operators, Internet Service Providers (ISPs), city and local government authorities to provide affordable broadband connectivity to citizens. This will see all public spaces such as markets, buses and bus parks, libraries, schools, hospitals and public buildings provide affordable or free broadband connectivity.

As pioneer of Smart Cities, a blueprint for Africa's push to integrate ICTs as a key component in socio-economic development, Rwanda has rolled out several initiatives. Today, there are more than 200 services online with 80 of them hosted on one platform, Irempo, a one-stop portal for e-government services. The government has involved the private sector in its quest to create smart cities with

Flagship projects target \$300bn investments in ICTs

 Rep. of Rwanda SMART Cities & Communities	 Rep. of Uganda Big Data & Data Measurement for Development	 Rep. of Senegal Access (Broadband) & Green Economy	 Rep. of Gabon ICT Industry Development
 Rep. of Kenya Digital Economy	 Rep. of Guinea Intra-african cross-border connectivity	 Rep. of South Sudan Africa Digital Literacy	 Rep. of Chad Creative Economy
 Rep. of Cote d'Ivoire Cyber Security	 Rep. of Mali Entrepreneurship Youth Innovation and Job Creation	 Rep. of Angola High Tech Parks	 Rep. of Djibouti Data Centers

the signing of the \$50 million MoU between a United Arab Emirates firm, Cheikh Rakadh and Rwanda's Ngali Holdings to finance City of Kigali Smart Master Plan. In 2016, the city also rolled out buses with free Wi-Fi and cashless payment service (Tap- and-go). Other Smart Cities projects include Vision City, a tech-enabled neighborhood with solar powered street lamps and free Wi-Fi in the town square.

Entrepreneurship, Youth Innovation and Job creation (Mali)

According to the UN population report 2015, about 1.3 billion of the projected world population in 2050, will be in Africa. And the 10 countries

with the youngest population in the world will be in Africa; therefore accounting for the world's largest workforce. However, 70% of those future jobs don't exist today in a continent with the highest unemployment rate and where automation is a threat to job opportunities.

This project therefore positions education and innovation to support the creation of innovation and co-working spaces for young digital entrepreneurs. The project will also help the youth with mid-level digital skills to earn wages through offshore services, such as information technology outsourcing, business process outsourcing and crowd sourcing. It will also help them tap into micro work opportunities, which offers task-oriented opportunities for data entry, coding, tagging and other text-based tasks.

5 - point Manifesto to trigger Africa's digital revolution

Smart Africa Manifesto was adopted by seven heads of state during the inaugural Transform Africa Summit in Kigali in 2013 to usher the continent into a digital era. It is hinged on five principles; to put ICT at the centre of socio-economic development, improved access to ICTs, improve accountability and efficiency through ICT, put the private first and leverage ICT to promote sustainable development.



1 ICT at the centre of socio-economic development agenda

The heads of state committed to integrating ICT in national development agendas as a tool to increase productivity, reduce poverty and create prosperity for all. This will be done by facilitating innovation, create content and applications that are context-appropriate, development-oriented and scalable to deliver social and economic benefits in key sectors such education, healthcare, business and agriculture. Developing capacity of the people to utilize ICTs and be fully

empowered participants of the ICT-driven economy and society is a crucial aspect of this drive.

2 Improve access to ICT, especially Broadband

The second principle is a promise to build on the continent's relative progress in connectivity to spread ICT access, especially in underserved areas, so as to realize universal access to quality and affordable ICTs. In order to achieve this, collaboration with the private sector and among fellow African countries will be strengthened in continuous investment

in infrastructure, including cross-border and regional networks. Continuous policy harmonization to create a uniform enabling environment across the continent will support private investments.

3 Improve accountability, efficiency and openness through ICT

The founding members committed to implement national e-Government policies by integrating ICT in service delivery to promote accountability, improve efficiency

and openness. At the core of this is encouragement of the usage of government-to-citizens, government-to-business and government-to-government services online. A strong commitment was made to promote, at a country level, Open Data initiatives to drive accountability, transparency and improve decision making while respecting country-specific confidentiality, privacy and national security.

4 Put the Private Sector First

The founders rightly believe that private sector-driven socio-economic



The Regulator



transformation is more sustainable and pledge continued fostering of an enabling environment for private investments to drive job creation, productivity and competitiveness through technology and innovation. The idea is to deploy ICT to increase access to markets and information for business and bolster efforts to transform Africa from net consumer to a producer of ICTs. To achieve this, local innovation hubs with the requisite business development, financial and technological capabilities will be rolled out.

President Paul Kagame inspects Pulpils using laptops. Rwanda's One Laptop Per Child initiatives prove African governments can catalyze innovation

5 Leverage ICT to promote sustainable development

Perhaps the most exciting of all, is the commitment to leveraging ICTs to empower women, youth and persons with physical impairments to bridge the gender gap and promote social inclusion for sustainable socio-economic development. In the same vein, it is noted that pressure on environmental resources poses a challenge to development in the continent and hence the need to deploy ICT to address climate change, clean energy, e-waste, urbanisation, disaster management as well as innovations in cyber security, cloud computing, mobility, shared infrastructure and, shared services.

Strategic Vision

Smart Africa has a clear and well-articulated strategic vision to “Transform Africa into a single digital market.”

Under this vision, the continent intends to achieve several strategic objectives. They include: harmonized policy, legal and regulatory frameworks and investment codes to attract investors; generate more demand for ICTs to encourage investments; establish favourable market conditions and enhance African market for ICTs; enable creation of new industries to fa-

cilitate creation of new jobs that are supported by 21st century skills and above all, attract investments worth \$300 by 2025.

The investments will be in infrastructure development such as expanding broadband coverage, satellite technology, data centres, big data analytics, e-applications, cyber security, smart cities and e-government, e-agriculture, e-education and e-health. Other areas for which investments are needed include manufacturing of electronic

devices, e-commerce, application development, innovations and capacity development.

In order to attain this vision, Smart Africa will bank on a strong partnership government, citizens, private sector, civil society and the academia at national and continental level.

It will also sustain political will, well trained motivated workforce, strong innovation and entrepreneurship spirit as well as a culture of communication and information sharing.

Strategic Outcome

As a result, Africa will migrate to a digital era comprising of a One Area Network of affordable voice and data charges (roaming) to facilitate closer integration and commerce.

Other anticipated gains include ICT-supported universal education, capacity to assemble and manufacture electronic devices to reduce the trade imbalance and create jobs, broader broadband connectivity in schools, hospitals, community centres, and in key infrastructure areas such airports, ports and all public areas.

OAN

makes communication cheaper to boost trade

Following the groundbreaking Transform Africa Summit of 2013, several initiatives aimed accelerating Africa's socio-economic development through ICT, have been kick-started. One such initiative is the One Africa Network (OAN), created in line with the pan-African vision of facilitating increased trade in traffic and value-added services between participating African countries.

Launched in April 2016, OAN marked a turning point in fast-tracking Smart Africa strategic vision of transforming Africa into a single digital market. Eleven out of the 22 member-countries have signed up to the One Africa network.

Strategic goals

The OAN has seven strategic goals designed to make communication in Africa more accessible and affordable in order to facilitate development.

They are:

- Secure and affordable communication exchange platform and free roaming zone within Africa.
- Maintain the sovereignty of African nations to oversee their own traffic
- Boost intra-Africa traffic, trade and economic growth
- Encourage intra-African traffic, and keep this within Africa
- Support free movement of people, goods and services across the continent
- Support the open-sky with an open waves policy
- Protect African borders from bypass fraud, economic threats and the security risks these present.

■ Improve the quality of service of the communications within Africa

ARTEF Platform

In order to achieve these goals, member states will establish the OAN Traffic Exchange and Financial Settlements (ARTEF) Platform. ARTEF Platform will have three nodes with capacity to handle all intra African calls, manage all voice exchange (including roaming) and capability to expand and manage data exchanges (including cross border mobile money transfers).

Benefits

The framework, which only applies to traffic originating and terminating within the member states of Smart Africa, will eliminate surcharges on international incoming traffic, no roaming charges within the region while retail price per minute for calls in the area will be capped at the highest local rates.

Calls from subscribers traveling in the Smart Africa member-states will be charged at local rates in the network of the visited country. For the operators, the initiative will spur growth in traffic and revenues.

Council of Regulators to remove obstacles to ICTs



Africa is comprised of 54 countries with different ICT regulatory frameworks. Founding fathers of the Smart Africa agenda therefore recognize the fact that a harmonized regulatory framework is a prerequisite for ICTs play an enabling role in accelerating Africa's socio-economic development.

The Council of African Regulators was therefore formed to support initiatives to transform the continent into a single digital market; using ICT by ensuring that regressive regulations do not stifle innovation.

In this regard, Smart Africa secretariat engages regulatory authorities of member-countries by bringing them together to share experience, challenges, success stories and failures through the Council.

The main objective of the

Council is to encourage collective action to define the type of regulatory environment needed to achieve Africa's digital revolution that will spur business growth across the continent. The Council also encourages regulators to act proactive and innovative in their approach to facilitate new innovations in ICT to flourish unhindered.

The advent of new innovations like blockchain technologies, that are coming to revolutionize business in all sectors, has made even more urgent the need for regulators to act proactive and innovative.

In 2000, ITU supported the creation of the Global Symposium for Regulators to strengthen collaboration, share best practices and proactively respond to concerns in the tel-

communications industry.

The creation of the Council of African Regulators was therefore a natural way to strengthen African collaboration and work more closely to support the digital transformation agenda.

The most recent meeting of the Council took place in Conakry, Guinea from December 14-15, 2017 during which an agreement was reached to advance the One Africa Network and the effective implementation of the One Area Network Clearinghouse. The meeting also agreed to implement the roaming hub and to work closely to harmonize African ICT/Telecommunications policies and regulatory frameworks.

RURA Board approves acquisition of Tigo by Airtel Rwanda with hope for improved service delivery



Airtel Headquarters in Kigali



By Stevenson Nzaramba

On 23rd January 2018, the Regulatory Board authorized acquisition of Tigo Rwanda Ltd by Airtel Rwanda Limited by transfer of all shares of Millicom International Cellular S.A in Rwanda to Airtel Rwanda Limited. According to RURA's press release dated on 23rd January 2018, "the consolidation of the two operators (Airtel and Tigo) is expected to bring industry stability, improved quality of services and product innovation for the benefit of the Rwandan consumers".

According to RURA, the acquisition shall not affect the existing subscribers of Tigo Rwanda, they will continue to be served, seamlessly during and after the consolidation. Subscribers will not be required to change their existing Tigo telephone numbers and existing Tigo cash services will not be affected. The regulatory Authority asserted that it is, it's primary responsibility to protect the consumers during this process.

According to Sunit Mital, the Chairman Airtel Bharti, the consolidation will lead to a greater industry stability, scalability, provision of better quality services and innovation that will benefit the customers. He further alluded that the merger will benefit Rwandans through improved coverage and enhanced customer experience a cross a wider network of customer touchpoints. The merger will enhance the mobile financial services foot print through combined agent networks and platforms.

The chairman said that the retailers will continue with their business as usual and will have a better opportunity to serve a wider customer base of Airtel and Tigo customers hence increasing their profit margins. Customers are guaranteed security of their Airtel and Tigo money on their e-wallets. Their funds will be safe and they will continue to use their Airtel Money and Tigo cash to pay for goods and services. Their funds will be held in trust by Airtel's partner banks. Current Sim-cards and phone numbers will not change. Clients will continue to enjoy all services they are currently enjoying.



Cashless economy

ICT-based economy, a secret behind Rwanda's fast economic growth

By Stevenson Nzaramba

Information Communications Technology (ICT) is not only a recipe for fueling economic transformation but it is also invaluable in catching up with the new dynamics of reshaping the economy. The government of Rwanda has massively invested in ICT solutions since the inception of its ambitious plan to build a sustainable and robust economy based on skilled human capital and ICT. The global competitiveness report 2014 ranked Rwanda the first country worldwide in promoting ICT.

In contrast to traditional ways of completing tasks across all sectors of the economy that were highly labor-intensive and time consuming, ICT solutions have proved more effective in cloud computing, mobile computing, information management, cyber security, et cetera.

It is against this backdrop that Rwanda Utilities Regulatory Authority (RURA) a multi-sector regulator established in 2002 to mainly regulate public utilities and done much to promote ICT solutions in all the sectors, one of the secrets behind Rwanda's fast economic growth currently averaged at eight per cent, is the use of ICT.

RURA leverages ICT to contribute to economic transformation by setting up reconciliatory mechanisms to see to it that telecommunications and internet services are more affordable, accessible, reliable and offered at competitive rates.

Besides, Rwanda's regulatory body ensures that telecommunications service providers offer high quality services to Rwandan citizenry through monitoring and regulation. Quality of calls, ability to reconcile international tariffs, managing the subscribers and roll out frequencies countrywide, are some of the crucial areas RURA monitors to allay consumer exploitation as well as ensure that ICT providers uphold value for money for clients to get maximum satisfaction per unit consumed.

ICT has revolutionized sectors like health, education, banking, transport, trade and industry, security, justice, administration and media. For instance, leveraging e-medicine, e-learning, e-banking and e-payment has been critical in fast-tracking development. Further, it (ICT) enabled the government of Rwanda to employ sufficient checks and balances particularly in the public service sub-sector since ICT systems are by far more efficient and transparent, especially in managing the taxpayer's money.



The global competitiveness report 2014 ranked Rwanda the first country worldwide in promoting ICT



Primary School pupils learning ICT.

Moreover, embracing ICT has plugged the dent associated with the humans' corruptive nature in regard to data computing and storage, especially when such tasks are done manually.

Aside from Rwanda's political will and stance to uphold the principle of zero tolerance to corruption, current statistics on internet penetration and mobile phone subscription show a dramatic increase in ICT literacy and proficiency that is a recipe for economic transformation since all sectors including the informal sector need communications tools and networks to accomplish tasks in a quick, effective and cost-effective manner as technologies tend to cut down transport costs and

maximize advantages that accrue from impersonality and/or automation.

Today, there are 8.4 million mobile phone subscriptions up from 3.1 million in 2010 while internet penetration rate has hit 3.9 Million up from a mere 1.6 million.

Notably, Rwanda has leveraged ICT solutions to reshape a formerly predominant agriculture economy into a fast growing paperless economy where hard copies are fast becoming unpopular and hence impacting positively on doing business. No wonder, Rwanda is the second easiest place to do business according to Global Technology report 2015 and second most competitive in Africa revealed the World

Bank report 2017.

Rwanda's development body, Rwanda Development Board (RDB) has synchronized all services. For instance, services at RDB, Rwanda Social Security Board (RSSB), Rwanda Revenue Authority (RRA) and at districts are all accessed through an online platform, also known as Irembo.

Irembo manages all technical aspects in the process of land registration, transfers and merging, national Identity cards, and businesses by local and foreign investors. Irembo innovation that basically uses ICT is credited to elimination of long queues and bribes that seem to arise as a result of human interactions. Data related to all



people in the country can be accessed electronically.

Other services that are accessed through Irembo include registration for driving tests and numerous traffic related services offered by the RNP. Emigration and immigration visas, work permits can be accessed through Irembo as well. ICT has breathed life to all sectors. A medical doctor in Kigali can diagnose and administer treatment to any patient through e-medicine.

Technology has made Rwanda's justice system more effective and efficient as it is potent of eliminating duplication of case information and has gone a long way to solve problems that would arise from the loss and physical damage of files. Today, the integrated file management that came into force in 2016 also eases accessibility of information and case reproduction.



Today, there are

8.4 million

mobile phone subscriptions
up from

3.1 million

in 2010

while internet penetration
rate has hit

3.9 million

up from a mere

1.6 million



Fiber-Optic and Mobile Telecommunications Training for University graduates



The Regulator

RURA and University of Tokyo
signing a letter of cooperation,
November 2017



DG RURA Patrick Nyirishema exchanging signed letter of cooperation with University of Tokyo.



Former Minister of ICT Philbert looks as DG RURA discusses with Tokyo officials.

RURA events album



ITU Regional Group for Africa Meeting in Kigali, 05 February 2018



ITU Regional Group for Africa Meeting in Kigali, 05 February 2018



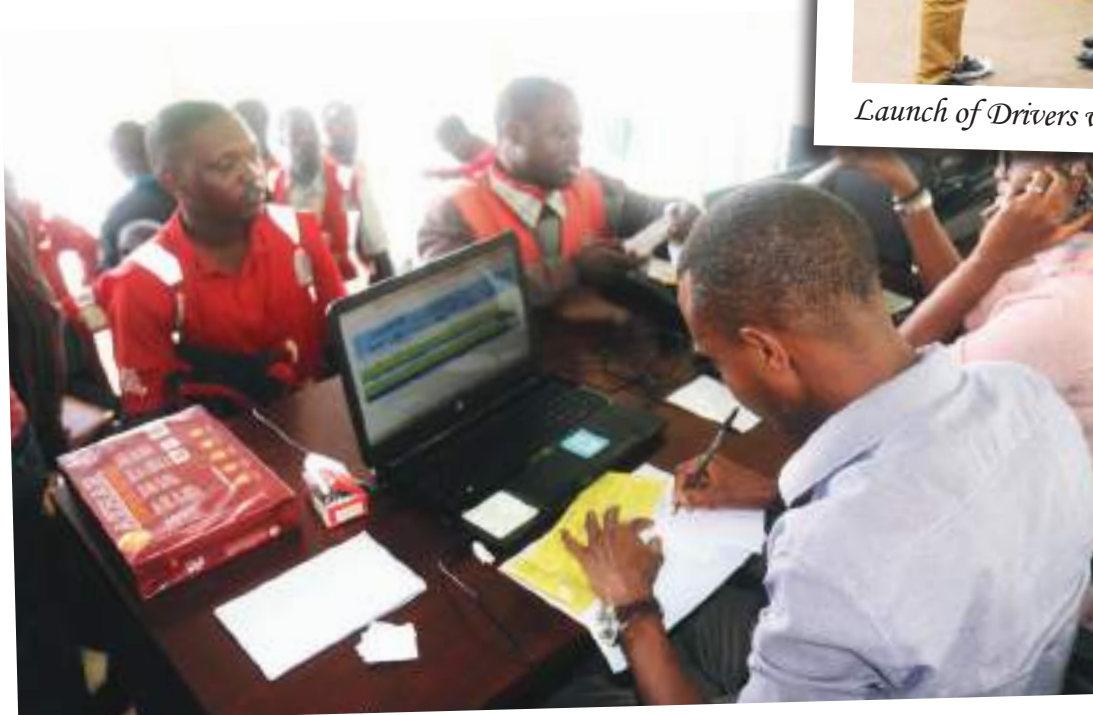
50th Anniversary of ITU-T Study Group 3 Regional Group for Africa



Waterway Ambulance



Launch of Drivers vocational Cards.



RURA and its stakeholders in Transport sector met Motorcyclists for efficient service delivery

Drone Technology at the forefront of Healthcare Delivery

By Denis Bayingana

Rwanda recently became the first country in the world to incorporate drone technology into its healthcare system, to deliver blood for transfusion. The fourth industrial revolution could completely transform healthcare. From big data to genomics, the fusion of technological breakthrough in the physical, digital, and biological spheres is changing the most fundamental tools and techniques of medicine and public health. Already, IBM's Watson project is combining unprecedented amount of clinical and social data to transform drug trials and disease management systems. DNA sequencing is now a mainstream part of medical care in countries across the world.





One sees one common denominator to the coming changes. This is an increasingly patient-centric approach to healthcare. Better information and more customizable technology means more personalized tools and methods for promoting wellness. The developed world's health systems, many of which are focused on 20th century paradigms, of care, could have trouble adapting to the world of "bottom-up" care. But in Africa, health care could take hold.

For all the resources and technological advantages of the rich world, many health care systems in Europe and North America are mired in the old ways of thinking. They focus on the costly secondary and tertiary care and they emphasise treatment rather than prevention.

Their rules and processes make it difficult to take full advantage of new and ubiquitous technologies like the smartphone in all our pockets. All this is understandable. Highly industrialised countries have long-standing ways of doing business in the health sector. Legacy systems are hard to transform.

African countries have an opportunity to be the trailblazers of a 21st century paradigm of Healthcare. Already, countries on the continent are heavily focused on preventive care. Think mass drug administration for parasitic diseases, Malaria chemoprophylaxis and prophylactic anti-retroviral medication to prevent HIV

Rwanda recently became the first country in the world to incorporate drone technology into healthcare system for delivering blood for transfusion



infection. Africa already uses technology to manage human resource constraints, such as text services that enable doctors to support trained birth assistants at a distance. Across the Continent, mobile phone-based services like SMS for life have transformed supply chains for malaria drugs and other medications, substantially reducing treatment stock-outs.

These transformations are necessary. With rising economies and urbanisation, non-communicable diseases (NCDs) present new challenges to Africa's emerging health systems, for example NCD's like diabetes and heart disease are now responsible for at least 40% of deaths in South Africa. In just over a decade, such diseases are projected to be the leading cause of mortality in Africa. We believe that addressing Africa's "dual-disease burden" of both NCDs and infectious diseases will require developing and adopting low-cost and high quality medical systems that encourage people to manage their own health. Mobile technologies and new breakthroughs in customized care will help us succeed.

Transformations are already happening in countries like Ghana, where the HIP programme aims to shift the point at which patients with high blood pressure access healthcare to the community rather than the regional hospital, which is often crowded and far away. Across Africa, mobile devices and telemedicine support community nurses in decision making and ensure seamless connection with community healthcare workers and physicians, as needed SMS and voice messaging are used for patient education, reducing risk factors for cardiovascular disease and supporting adherence to therapy. Rwanda recently became the first country in the world to incorporate drone technology into healthcare system for delivering blood for transfusion. Tanzania now implements similar model.



In Rwanda, an early commercial test of Drones cuts a medical facility's time to procure blood from four hours to 15 minutes

But not all smart solutions are hi-tech. Rwanda's capital Kigali has a car free day every month to promote wellness through walking and cycling. Few European or American cities have been able to achieve this. Of course, the dual burden goes beyond Africa. Asian and South American countries are grappling with ageing populations and the lingering challenges of infectious disease. They are also pioneering programs that can serve as models for Africa and the rest of the world.

Only a third of Indian citizens have access to modern healthcare. Roughly two thirds of the country lives in rural areas. In this context, Novartis created a program called Arogya parivar ("health family" in Hindi Language) to recruit and train locals in remote villages to become "health educators". These individuals help inform communities about good health, disease prevention and the importance of seeking timely treatment. Local teams work with doctors to organise health camps in remote villages. These are mobile clinics that provide access to screening, diagnosis and therapies. The program is also piloting an e-

healthcare project linking villagers to physicians in primary healthcare facilities. This brings quality healthcare services close to local communities.

Arogya parivar was so successful that the program has since replicated in Kenya and Vietnam. Since 2010, outreach in rural areas through these programs has brought health education to more than 30 million people and direct health benefits to three million patients through diagnosis and treatment. These systematic innovations will be enhanced by the emergence of new cross-cutting health technologies.

Many African governments are aiming at universal health coverage based on an efficient, equitable and innovative primary care system. This is good news. As European and North American healthcare systems face extraordinary demand from rapidly aging populations, we may see them adopt lean innovations pioneered in Africa and other parts of the developing world. In the emerging age of personalized "bottom up" care developing countries have powerful opportunity to lead.

ICT innovation in transport cuts the lengthy bargaining with moto taxi

It is 10 minutes to 8pm and I am definitely late for a very crucial meeting. My mind tells me that I should leave the car and catch a taxi moto which I decide to do. In less than seven minutes am at RDB and before we start the long haggling process of the cost, the guy points to a phone like gadget attached to the motorcycle and tells me that meter has already set the fare.



Though this was a new experience for me, it is now a common practice for those who frequently use motorcycles and many say it is saving them a lot of time and money. This new development started when 'Yego Innovision Limited', a local IT company run by Singaporean investors who wanted to change the way the taxi-moto business operates in Rwanda designed a meter that helps moto taxi operators to calculate transport fees electronically.

Simply flag down a YEGOMOTO, tell the Driver where to go, hop on, and be on your way. You will pay the fare according to the YEGOMOTO Meter based on the actual distance travelled and time taken meaning there is no more haggling on how much you need to pay.

How it works

Though most people welcomed the idea, unfortunately not all moto taxis are from YEGO MOTO. When you stop a moto taxi for a ride in Kigali, you notice a red gadget similar to a smart phone branded *Yego moto*. On a *Yegomoto* gadget, a meter which also includes GPS features, calculates the distance traveled during a given period of time and corresponding price. The unit price is Rwf300 for every 2 kilometers of the trip. For those passengers who value their time, this innovation came as a relief.

'*Yegomoto*' is only operating in Kigali but intends to extend to secondary cities. For moto taxi operators to get registered under *Yegomoto* network, they are required to have a national ID, driving license and a valid insurance.

What the service providers say

According to Karanvir Singh, the Chief Executive Officer of Yego Innovision Limited, the system comes to save time spent while bargaining with moto taxi



operators. "The system calculates the distance and sets the fare automatically meaning the passenger and us, as the service providers are satisfied and happy. It also eliminates the haggling and at the end of the day, time is saved." He said.

According to Karanvir, the system also helps in keeping and collecting data that can be used by different stakeholders like Rwanda National Police

(RNP), and Rwanda Utilities Regulatory Authority. "Taxi-motos are far more important than bus transport because they pick up people from places where buses cannot reach, and act as feeders to the buses. Many people exclusively use a moto and the challenge remains how to make them go cashless," notes Karanvir Singh, the company's chief executive and managing director.

In the near future, *Yegomoto* will be



In the near future, Yegomoto will be able to allow **e-payment**. The system will start accepting payments by mobile money and a designated electronic card that one will tap on the Yegomoto gadget," Karanvir said.



able to allow e-payment. The system will start accepting payments by mobile money and a designated electronic card that one will tap on the *Yegomoto* gadget,” Karanvir said.

Supporting cashless drive

“We saw an opportunity here, but we also believe taxi-motos are the most important means of transport for most people. The idea is also part of consideration that there was a need for a country to go cashless,” he said. The idea is supporting the cashless drive in a sense that the system allows passengers to pay using mobile money, and the long-term plan is to introduce card payment feature as an alternative for those who might not be using mobile money, he added.

According to data collected by the firm during its initial stages, there are about 15,000 taxi-motos operating in

Kigali, making about 350,000 trips per day, about a million trips in three days. The total investment in the system, according to management, is \$14 million (about Rwf11bn) and they say they expect returns in four to five years. Installation of the system on motorcycles is free; helmets are given out freely while motorcyclists get training on customer behaviors, management and other related skills. According to the company, 25 motorcycle riders are trained each day and they hope they will have completed training about 1,000 by early October.

Yego Moto Taxi operators

According to Kabagambe Emmanuel 30, “a moto taxi operator under *Yego Moto*, the new system is very accurate and fair which has helped them deal with passengers and eliminating fights over allegations that we are trying to cheat them into paying more than is required”. Kabagambe also believes he is benefiting more. In the past, he would pick a client from Nyabugogo and reaching Kabeza, he would ask for Rwf800, yet the price would be 1200Rwf for the meters. “Sometimes I would be desperate in trying to find a passenger headed my way and I would end up agreeing to a fare that is not fair for the service that I have rendered. However, with the meters, it is easy for the client to part with the money knowing that it is automatically calculated by the meter.” Says Kabagambe

Kabagambe however says that some passengers still misunderstand the meter thinking that we decide on how much the meter is to charge them,” he said adding that there are clients addicted to bargaining. He also adds that the meters came as a relief and helped them deal with foreign passengers who are many in Kigali and cannot speak Kinyarwanda.

“Back then, I would lose business whenever I would be flagged down by a white person or a foreigner because of language barrier. But today, I just point at the meter and that’s it”

What passengers say

Some passengers are still skeptical on the way these meters’ work while others feel they are more efficient and fair. “When I first used Yego Moto, my feeling was that the meter is set to cheat me but that was not the case. Sometimes I find that it charges less than I used to pay because every moto operator charges differently and there is no set tariff for particu-

lar distances” says Anita Mutoni a trader who uses Yego Moto on a daily basis.

“Am not good at bargaining and with Yego Moto I no longer waste much time negotiating with the moto taxi operators and that is time saving” she adds. However, some passengers still think they are better off when they bargain for their transport fare.

Bugingo Alex who runs a mini bar in kicukiro says that because of the many taxi moto in the city, he can get a very good bargain from one place to another depending on the money available to him and that he is at a disadvantage when he uses Yego Moto. “If am not in so much of a hurry, I can take my time until I get a moto that agrees to the amount of cash that I have. In most cases, the journey that would cost Rwf1200 on the meters, I pay Rwf1, 000 which I find as an advantage,” explains Bugingo.

Other players in the market

While YegoMoto made its way to the Rwandan market early last year, SafeMotos, a platform which uses GPS technology, has been operating in the same sector for a while now since 2015. SafeMotos is a highly localized ride hailing platform taking a segmented approach, SafeMotos only targets trips where it provides sufficient customer value to be profitable at a per trip level.

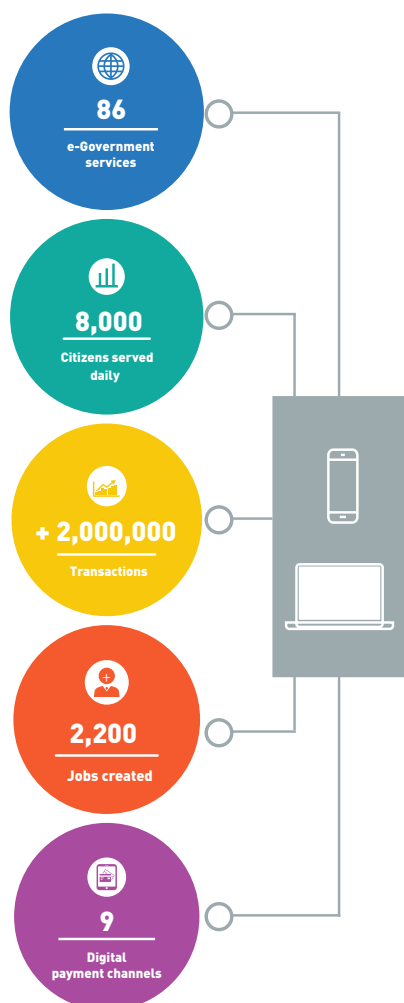
Launched in Rwanda in 2015 by cofounders Barrett Nash and Peter Kariuki after participating in an international startup accelerator, SafeMotos was conceived as an Uber for African motorcycle taxis that uses telematic data to measure real time driver safety. According to the management of SafeMoto, more than two million trips have been taken by SafeMotos drivers in Rwanda’s capital Kigali. SafeMotos has successfully monetised 10% of total trips, with more than 50% of trips paid via mobile money and other cashless functionality

The two players are operating quite a similar business with just a small difference. Yego Moto calls itself a ‘meter’ service while SafeMotos is a hailing service.

Meanwhile at RwandaOnline

RwandaOnline Platform Ltd is a local Rwandan technology solutions provider that runs eGov programs with the objective to create efficient and transparent procedures to effectively improve service delivery with a profound understanding of local needs and capabilities of the community to access online services.

Through a 25 years public private partnership with the government of Rwanda, a platform named Irembo was created and RwandaOnline at present provides 86 services enabling the government to provide services to the citizens and businesses and allowing them to pay online with ease and efficiency. The Online Portal, Mobile USSD and the best of breed Agent Network developed by RwandaOnline allow users with or without access to internet or mobile phones to request for government services.



RwandaOnline's mission is to build and operate a platform that enables the automation and online provision of services to citizens and businesses. And their vision is to become the catalyst of transformation through technology.

What makes RwandaOnline exciting and unique is that it is a company brimmed with talented minds and dedicated staff to support Rwanda in growing through the digital age as a knowledge based economy and its involvement in the ICT field.

The employees of RwandaOnline have values that help them in striving to reach the company's goals which include Act C.I.A (Creative, Innovative, and Adventurous), Be citizen-Centric and RUN IT like a MARATHON

RwandaOnline through different agreements has also put in place several payment channels to allow citizens to apply for services and pay for them without moving. The available payment channels vary from telcos to partner banks namely: RURA MTN Mobile money, Tigo cash, Airtel money, Mobiserve, Mobicash, BK branches, BKYacu, Visa Card and Master card

RwandaOnline does not only partner with financial institutions but also provides opportunities to third party developers to connect their ideas and solutions to the platform that effectively add value to the initial idea of rendering access to services seamless to citizens and businesses.

“We believe in co-innovation for our product to deliver constantly improved experience to our users”
expressed Clement, the managing director of RwandaOnline.

RwandaOnline on March 16th entered into a partnership with N-Frnds as the first Third Party Developer to provide USSD SMS services for citizens who do not own smartphones to be able to access services using their feature phones.



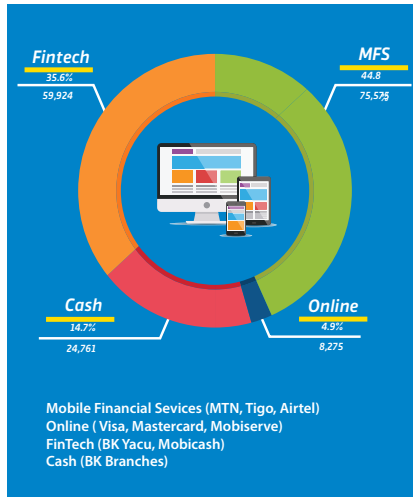
Nfrnds Country director with RwandaOnline country director hand shake after signing the MOU

RwandaOnline strives to keep the momentum in automating government services, availing more online payment channels and opening up the Irembo platform for more innovative contributors



RwandaOnline's current Projects

How Rwandans decided to pay their government through Irembo and availed payment channels in February



HIGHLIGHTS

Fully digitized services continue to increase

RwandaOnline in collaboration with MINALOC continue to join forces to present new innovative ways to access e-certificates in different districts and so far have successfully launched the full identity and birth certificates in the whole of Kigali. Over 7800 Rwandans have accessed and received their certificates right in their inbox.



Self - service put at the forefront in a country wide campaign



RwandaOnline jointly with MTN-Rwanda organized an intensive 90 days self-service campaign that will see more Rwandans experiencing Irembo by themselves and paying through MTN mobile money, saving money and time through easy access to government services while promoting a cashless economy. This campaign was titled "Bikore ku Irembo ubirangize na Momo" #Diditonirembob. Through a breakfast event, the campaign was launched.



Conversational UI takes two forms; voice assistant that allows you to talk and chatbots that allow you to type. Chatbots are used as a tool to create conversational websites and interacting with the customer in the same way a customer support officer would do.

The solution it brings

Today community managers have to manually support thousands of customers that send different requests. They need to assure that each user's issue is solved hence spend hours trying to respond to all of them one by one. For example, at RwandaOnline in the first quarter the average response to customer queries was at 57%; despite the effort made to reach a maximum user satisfaction rate through putting in place numerous customer support agents and onboarding an efficient client support company, managing all queries remains an issue. It has been proven that there is need for improvement of efforts put in handling customers requests in order to satisfy all users without exception.

The Irembot



In light of the celebration of women's day, RwandaOnline organized an internal breakfast sharing to focus on challenges faced by women in the workplace. "It was a moment of debate and candid exchange of ideas and perspectives in the way we move society forward! Very glad we did this!" Faith keza, our head of technology says. We were at #FORUMSENEGALNUMERIQUE18 IN DAKAR. Major step to expanding @irembo.gov in Africa.

TECHNOLOGY INSIGHTS

Conversational UI

This new efficient technology gives the privilege to interact with a computer on human terms, It gives to the user the ability to tell the computer what to do.

At Irembo we are in the course of exploring the same kind of technology on facebook through what will be called "IremboBot". This tool will be programmed in a way that individuals wishing to interact with us on facebook get replied to immediately and efficiently.

The computer will be able to detect the Language used by the customer, to interpret the question asked and finally generate accurate automatic answers to customer. Whenever the answer is not satisfactory, the query will get escalated to the customer support officer who will take on if need be. This technology will help in reducing the number of customers that are unattended to and will timely give an answers to the users. This technology will not only create an innovative medium that uses technology to solve the problem but also a high customer satisfaction rate.



The Freedom to High Speed Connection

ISPA Ltd the Home for Affordable Superfast Internet Services

We are a new company registered in 2005 which has brought in highly flexible and cost-effective solutions to help Internet users and corporate networks save costs, improve services and become more competitive in the market. As experienced players of internet solutions in Rwanda, ISPA foresees the high prospects in broadening its service scope by introducing high end, cost-effective IP platform network solutions.

"At ISPA, we have raised the bar to become one of the best superfast internet providers in the country. We offer reliable and affordable 'Unlimited Broadband Internet' for both Home and Business users depending on one's requirements; empowered by huge investment made over years to put up that has enable us to reach different corners of Rwanda," Said Yvon Kaningu, ISPA MD.

ISPA's Professional and Dedicated Team

ISPA team is uniquely knowledgeable and all round within the industry segments. "We provide a connectivity solution that suits your location, whether by fiber-optic submarine cable, satellite, broadband or other means;

we'll make sure you get fast, reliable internet and voice connectivity. At ISPA we have the Internet infrastructure to host your web servers and a team of IT professionals to manage and design the site for you," says Kaningu.

We are both providers and users of internet services, and the combination gives us that precious advantage. Our seasoned dedicated teams of professionals include experts in telecommunication, IP networking and routing, and ISP professionals allowing us to deliver quality service that suits the design of your network. These teams are available for our customers 24 hours a day, through our NOC that provides continuous support.

ISPA Smart Office

Successful businesses prioritize continuous growth and profit maximization. To partner and support your company's growth, ISPA now offers customized solutions for businesses of every size. Our perfect suite of solutions enables your business to enhance employee efficiency, reduce costs and improve overall profitability.

Using ISPA smart office, businesses of every size, our clients are already enjoying these benefits: Our cutting-edge system is constantly updated; our core network is kept current so that you always get the latest software versions; no hardware on your premises means no maintenance; we offer

around-the-clock, 24/7 support; we remotely manage all your services and we make sure all your systems are always up and running, so that you can work on scaling up your business.

With over 15 years of experience in providing countless services to a broad range of customers, you can count on us to be the most cost-effective and efficient communication provider in the country and beyond. In fact, that's what we're known for in over 20 countries of intervention!

Security Package

Information technology security has increasingly become a challenge to different organizations and business, we all aware that threats can obviously come from any direction. Therefore, at ISPA we have fashioned security innovations that will protect your servers, desktops, laptops and email.

- **The virtual firewall**
 - High-level security that protects your network environment
 - Control user's access to internet and websites
 - Constantly updated signatures detect the latest malicious attacks

The Regulator

- **Endpoint Anti-Virus Security**

- Real –time protection for your computers and servers against viruses and botnet
- Low system demands that provide top-security without interrupting your workflow
- Virus infiltration report, anytime, anywhere

Email security has not been given the deservedly attention, and yet emails are among the top IT components attacked by hackers. To guarantee maximum security of your emails, ISPA Ltd has introduced a top-notch email security package that will protect your inbox and your network from viruses and spam.


- **Our top-notch email security:**

- Blocks up to 99.7% of spam trying to enter your inbox
- Neutralizes up to 90% of threats before it gets to your computer
- Provides seamless integration and user interface

Data Protection Package

Information is widely important to certify informed decision making in different organizations and institutions. Companies believe that the most important asset they rely on to predict the market trends and evolutions, is information. At ISPA Ltd, we have initiated unsurpassed data protection package that brings along the following benefits:

All your company's information is encrypted and stored at our Data Centre; Easy restoration when required; Best protection against ransom ware attacks; Never loose data on endpoint devices, servers, storage and even cloud; and we offer 'office 365, g-suite, Amazon' services.



Offering a range of business internet services/solutions.
freedom of high speed connection

Bandwidth Traffic Control Package

We are well aware that making the most of your bandwidth can be challenging. However, with ISPA LTD Traffic Control you will be able to; making the most of your bandwidth by limiting certain applications at certain times, save monthly expenses on buying additional bandwidth and get monthly reports showing the bandwidth utilization

Hi-performance Wi-Fi package

No matter how your work environment is designed, we provide high –performance, secure and reliable access to your entire network. We offer; State-of-the art carrier grade access points which fully replaces the need for a wired network in your office, Smart Wi-Fi antennas to extend your Wi-Fi coverage compared to most of

access points currently on the market, enhanced security even when you are connected with wireless at your office. We have a team of experts in place that will install and remotely monitor access points to ensure your constant Wi-Fi connectivity

PBX Package

We have introduces HD quality office calls with our Cloud PBX platform. It is clothed with various benefits that will make calling much more interesting. With PBX platform; there is no need for high cost on –premises PBX machines, it is possible to use as many phone extensions as you need, enables saving on phone costs with free calla between branches in and out of the Country and offers to choose from a wide range of desk phones and wireless phones.



Contact ISPA Ltd today.

**Tel: +250788303181 | +250788303427 | Email: info@ispa.rw
Website: www.ispa.rw**



National ID for faster, efficient service delivery

The Government of Rwanda considers ICT is an enabler of efficient functioning of public and private institutions and therefore an important tool in delivering faster and effective services to spur economic growth and development. For ICT to enable efficient and timely service delivery, digitized biometric national identification of all citizens is prerequisite to ensure safety and security of systems and the country as a whole.

Since 2007 when the National Identification Agency (NIDA) was established to issue digitized identification cards that uniquely identify each Rwandan using biometric data, the government has been working on integrating the NIDA system with public and private institutions for online identification of citizens for faster delivery of services.

Using national identification cards to log onto Irembo (RwandaOnline), the Rwanda Government online portal, Rwandans will be able to access and pay for all services offered by national institutions integrated into the NIDA system. The institutions to be linked include Rwanda National Police, Immigration, National Bank of Rwanda, Rwanda Revenue Authority (payment of taxes), Rwanda Development Board (business registration) and the Land Centre for land registration.

Others are Rwanda Social Security Board (retirement benefits), Electoral Commission (elections and referenda). In the private sector, telecommunication companies are the major focus for SIM card registration and banks for their KYC Plans.

Recent innovations

In order to reduce the time needed by an individual to process an ID or a replacement, NIDA is now connected to Irembo, from where citizens can access all services related to the exercise. All one has to do is to log onto Irembo using their national ID and access all services because all national institutions are connected to the system. This has removed the need to travel to sector office to fill forms and to bank to pay fees to acquire a national ID. Payment of fees can be done through available payment channels on irembo.



Hitec ID printing Machine



Rwanda national ID is therefore a powerful ICT-based tool that not only uniquely identifies nationals, but also contributes to faster and efficient delivery of services

New innovations also include faster processing of a replacement in case one lost the ID. Previously, if a citizen lost their ID, they would endure a lengthy process that involved reporting to the Police, get a police letter and deliver it to the civil registry office in sector office. The process was slow as requests piled at the civil registry awaiting submission to NIDA for processing.

Today, citizens only need to report the loss to the Police and carry out the entire process to acquire a replacement online via Irembo. There is no need to travel long distances to process a new ID or a replacement. Even delivery of processed IDs has been simplified. NIDA now works with

Rwanda Post Office to deliver them to sectors, thereby taking services closer to the people. Previously, deliveries were made at District. Apart from delivering IDs, Rwanda Post Office also picks up information from persons whose IDs need be corrected. “Using available tools of communication, we can contact concerned persons to explain whatever information that may not be clear,” says NIDA Director General, Josephine Mukesha.

Acquisition of national IDs has been made easier for Rwandans in Diaspora through the new innovations. An agent of Irembo is now stationed at NIDA to facilitate the process—providing one-stop services for applicants of national IDs living outside the country.



It is possible to carry out both birth and death registration at health facilities because even where birth takes place outside a health facility, new born babies are taken for immunization within 24 hours; and most deaths happen in hospitals,” she said.

Civil Registration and Vital Statistics (CRVS)

Identification of people goes hand-in-hand with population registration. As such, NIDA is also responsible for the birth, death, adoption, guardianship recognition and granting of nationality, civil marriage, divorce and change of address registration. This is done online at all sectors as the platform is accessible to CROs. NIDA is working with the National Institute of Statistics Rwanda together to improve and strengthen the CRVS systems in Rwanda in order to ensure that all vital events are captured on time.

A strengthened CRVS system will ensure that population registration (birth, death, adoption, guardianship recognition, granting of nationality, civil marriage, divorce and change of address) is done online and in places where they occur such as sectors, health facilities, courts and government ministries.

NIDA now plans to collaborate with the Ministry of

Health to link NIDA with hospitals to start recording births at health facilities where babies are born; even where birth takes place in homes, they will be recorded from health centres where babies are taken for the first immunization dose. Currently, births are registered at sector office where parents report new born babies within 30 days of birth.

“It is possible to carry out both birth and death registration at health facilities because even where birth takes place outside a health facility, new born babies are taken for immunization within 24 hours; and most deaths happen in hospitals,” she said.

Collaboration with the Ministry of Justice and the court system to record divorce, adoptions and all other population related issues handled by the judiciary is also in pipeline.

CRVS system is already being piloted in Gasabo District and will be launched soon, forming the basic infrastructure for all online government services. “There will be no need for citizens to move long distances for administrative services from government agencies,” Mukesha said.

Private sector interest

The digitized ID has spurred a lot of private sector interest in using the secure identification cards to simplify processes in doing business and to improve services. So far, the banking system is leading in this innovation with some banks running systems that make it possible for customers to use their national IDs to open bank accounts online. “This is possible because banks can properly identify a person opening the account, using the ID. If they need biometric data, we can share with them because we already have all that information in our system,” This goes with the government policy of zero trip, zero paper said Mukesha.

The health system too is taking advantage of the secure national identification to offer online health services. BabyL health care is the first digital health service in Rwanda based on mobile technology through which patients can consult doctors online. If need be, a patient can be booked online to see a doctor and in case of minor health issues, prescription can be done online and sent to a nearby pharmacy where a patient can walk to and pay for the medicine upon presenting a national ID.

Mutuelle de santé, the national health insurance is also going online and all require an ID to access via Irembo. Rwanda national ID is therefore a powerful ICT-based tool that not only uniquely identifies nationals, but also contributes to faster and efficient delivery of services.





Balton

Rwanda

Balton Rwanda offering ICT solutions to Rwanda's Economy

Balton Rwanda, since its inception in 2007, has established itself as a pioneering, powerful force within Rwanda's ever growing economy, bringing the experience and professionalism of the Balton CP Group to Rwanda. Motivated by the passion for empowering the people of Rwanda and coupled with a pioneering spirit for introducing new, cutting edge technologies and knowledge, Balton Rwanda continues to strive to achieve commercially sustainable development in all of its fields of expertise.

Communication Technology

Using state of the art equipment from many of the leading manufacturers on the world today, Balton Rwanda offers a wide range of ICT solutions to its ever growing customer base. The four main areas of focus are Security, Networking, connectivity and power, and this has led to the successful implementation of complex projects and installations in Banks, Billing Management System(BMS) in the services balton offers, Utility Companies, Phone and Internet providers and more across Rwanda.

With the ability to implement solutions requiring technologies such as HF long range wireless, VHF and UHF local systems,



complex trunking , micro-wave and digital systems, GSM mobile technology, PABX and internet communications, CCTV and access control systems and much more. The Balton Rwanda team has the experience and expertise to create advanced and cost effective solutions for Rwandan customers while empowering people with knowledge and skills needed to maintain the systems for a long run.

Inspired by a drive to constantly upgrade the technologies introduced in Rwanda, in recent years, the Balton group has led the way in the introduction of technology-rich data centers throughout Africa, an initiative brought into the Rwandan market by Balton Rwanda. The company has continued to take a pro-active role in ensuring that the most advanced cyber-security software is available in the Rwandan Market.

Partners



The Regulator

I.T.A: More than Air tickets...

Comprehensive Travel Services

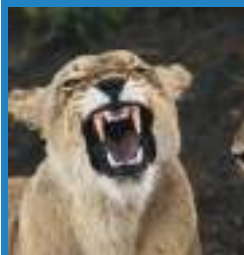
International Travel Agency (ITA) is one of the biggest and most experienced travel agencies in Rwanda. We have more than two decades of experience in providing comprehensive travel services, right from planning the perfect itinerary to suit your needs, booking your air ticket, and accompanying you to make sure your experience is flawless.

24-7 Service

Our professional and friendly staff are available around the clock to provide you accurate, quality and timely information for all your inquiries.

Our Record

I.T.A is an approved travel agency by International Air Transport Association (IATA), and has over the years won numerous excellence awards for its exceptional service.



Exclusive travel packages



Air ticket booking



Processing Dubai Visa



Award-Winning Service



STA TRAVEL: HELPING STUDENTS EXPLORE



STA Travel is the world's largest travel company for Students, Youth and Teachers. It was acquired in 2015 as a franchise by International Travel Agency (I.T.A), Rwanda.

We work with our partners around the globe to get you the lowest, most flexible airfares and top-rated affordable accommodations.

Core Products and services: We sell tickets for over 100 Airlines to all parts of the world and arrange tour

packages and tailor-made accommodation for you

Discount Cards: We offer discount cards with fantastic benefits and services world over and in Rwanda.

Other benefits: A robust travel insurance plan; extra security for all our customers world over; Work & Study package for students who have completed school; Language schools.

FIND US: Kigali Office MIC Building Plot Number G-31 | P.O.Box 2151 Kigali, Rwanda
T: 0788308353/0788303598 | E: ita1travel@yahoo.com/ info@bcdtravel.rw | www.ita.rw



Rwandair's impeccable rising path

For over the last 15 years RwandAir has undergone remarkable makeover to become an African force in staging one of the most competent airline. It went through a number of successions of change to become the titanic airline company it is today. RwandAir began its operations on 1st December 2002 as the new national carrier under the name RwandAir Express (passenger air transportation as the core activity) for Rwanda with a concession to carry out airport ground handling (ancillary activity) at Kigali International Airport. In March 2009, it registered a new trademark “RwandAir” which is its current operating name.



RwandAir has an overarching mission of providing unsurpassed, safe and reliable services in air transportation; including strategically linking Rwanda with the outside world, while ensuring a fair return on investment. It envisions to become the airline of obvious choice in the markets it serves. To diligently compete with other giants in airline business on the African continent and afar, RwandAir has made massive investment to emerge as one of the fastest growing airlines that operates one of the youngest and state of the art fleet on the continent which comprises of four Boeing 737-800NG, two Boeing 737-700NG, two CRJ900NG, two Bombardier Q-400NG all in dual class configuration and two new triple class Airbus A330.

Following the lucrative investment made towards amassing one of exquisite fleet, RwandAir is now able to spread its wings in different parts of the world; reaching out to twenty-four cities in Western, Central, Eastern and Southern Africa, the Middle East, Asia and Europe. "With tremendous strides made to secure new and seamless connections between more African cities and beyond the continent. As RwandAir, we are committed to seek for

innovative solutions and adhere to emerging international requirements in the airline business, in an effort to remain competitive and sustain the remarkable achieved milestones," said Yvonne Manzi Makolo, CEO of RwandAir.



RwandAir is a member airline of the International Air Transportation Association (IATA) an EASA, IOSA and ISAGO certified operator.

After an audit conducted on RwandAir Ground Operations in July 2016 by WAKE QA, an IATA approved Audit Organization, RwandAir is a member airline of the International Air Transportation Association (IATA) an EASA, IOSA and ISAGO certified operator. ISAGO is an IATA standardized and structured audit program for Ground Service Providers (GSP) that was modeled on the success of IOSA (IATA Operational Safety Audit). The audit uses internationally recognized ground operational standards that are aimed at reducing risk and cost as well as minimizing damages and incidents.



Yvonne Manzi Makolo
CEO of RwandAir.



“With this achievement, RwandAir has been able to deliver enhanced ground-handling services with high safety standards to its customer airlines and private jets operating at Kigali International Airport, while maximizing productivity,” said Yvonne Manzi Makolo CEO of RwandAir.

He further underscored that ISAGO certification, in addition to the existing IOSA certification, cements RwandAir commitment to the industry best practices in operational safety to a world class unmatched standard.

RwandAir has taken Rwanda’s tourism business to higher heights

RwandAir ideal contribution to opening Rwanda’s tourism industry to the rest of the world was lauded by Rwanda’s President, H.E Paul Kagame while receiving World Tourism Award in recognition for his visionary leadership in sustainable tourism wildlife conservation. He said that Rwanda has set the bar high and wants to take tourism to the next level. For instance, he told participants, “We are also finding ways to multiply Rwanda’s connections with the rest of

21
countries that
command
more than

670
million
of the
continent’s
population
have
committed
to the Single
African Air
Transport
Market

the world which is what this award represents.”

He said that by doing so, heavy investment has been made by creating RwandAir – the national carrier to connect Rwanda with the rest of the world. “It is getting easier to travel to Africa. RwandAir now flies to 24 destinations on the continent and beyond including London,” Kagame said adding that “This is a story that is being repeated across the continent as Africans increasingly take charge of our future.”

RwandAir Regional and International Rating

RwandAir’s acclaimed performance is not a mere verse but a series perceptible achievements as highlighted in various accolades staged by international recognized bodies in the airline business. For example, RwandAir was nominated by World Travel Awards 2017; as Africa’s Leading Airline - Business Class, Africa’s Leading Airline - Economy Class, Africa’s Leading Airline, and Africa’s Leading Airline Brand.

Similarly, RwandAir was nominated for the 2017 Best Airline category in Uganda

Tourism Excellence Awards, in credit for its tremendous service delivery to passengers and commendable contribution to tourism development

The 49th Annual General Assembly (AGA) and Summit of the African Airlines Association (AFRAA), 2017

RwandAir successfully hosted the 49th Annual General Assembly (AGA) and Summit of the African Airlines Association (AFRAA), 2017; a premier gathering of senior global aviation executives in Africa. Annually, the AGA brings together global aviation leaders and stakeholders to take stock of aviation milestones and plan the future for the development of African aviation.

Yvonne Manzi Makolo CEO of RwandAir and President of AFRAA paid tribute to the Government of Rwanda's support that has seen the country achieve huge treads in aviation and economic development. The AGA theme, reflected on the current state of the industry, and the Assembly worked towards seeking for ultimate solutions to the perennial challenges that have led to the loss of market share and poor financial performance. In the Assembly, Col. Ndagano highlighted RwandAir's achievements that had been realized as testimony to the Government's commitment to the development of aviation. "Through the

Government's support, RwandAir is making a positive contribution to the region's aviation industry," he said.

Future Plans

RwandAir has announced plans to launch flights from its hub in Kigali into Abuja, Nigeria's political capital; Bamako, the Malian capital; Conakry, the capital of Guinea and Cape Town in South Africa. These routes, according to the airline are part of its remaining route expansion destinations and growth drive for 2017/2018 financial year. Apart from the expansion plan for its operations in Africa, RwandAir is also determined to expand its flights into New York, in the United States and the long awaited flights into Guangzhou in China, Asia. "All these efforts are geared towards expanding Rwanda's external trade and continue raising the mark in boosting Rwanda's tourism industry," said, Yvonne Manzi Makolo CEO of RwandAir.

RwandAir to Reap on the Benefits of Single African Air Transport Market (SAATM)

Following the launch of Single African Air Transport Market (SAATM) initiative during the 30th AU Summit in Addis Ababa, RwandAir is expected to reap on the benefits of operating under a single unified air transport market and liberalized

Civil Aviation in Africa. So far, 23 member states are on board, the initiative is likely to have more countries come on board in the coming days.

Presently, 21 countries that command more than 670 million of the continent's population have committed to the plan. These include Benin, Nigeria, and Sierra Leone in the West; Kenya, and Rwanda in the East; Zimbabwe and South Africa in the south; and Egypt in the North. The single market is also host to eight of Africa's top ten busiest airports including Bole International Airport in Ethiopia and O. R. Tambo in Johannesburg, South Africa. Up to 15 carriers, which account for more than 70% of intra-African air travel, have also signed up for the common market.

The State Minister for Transport, Jean De Dieu Uwihanganye said that the implementation of the (SAATM) initiative by countries across the continent will see an increase in flights across the continent as well as increased economic impact from the aviation sector. Among the expected impacts he cited the removal of restrictions that hamper air service agreements between states. "As Rwanda we expect quick approval for RwandAir requests to new destinations. We also expect flexibility in traffic arrangements such as picking passengers from one airport to another," he said.





RFTC restructured into Jali Holdings to offer more services

Rwanda Federation Transport Cooperative (RFTC) officials have restructured the company with intention of providing more services other than only transport. This decision was reached on 31st October 2017 during the General Assembly meeting. Jali holding company will oversee the activities of the enterprise.

In an interview, Col (Rtd) Ludovic Dodo Twahirwa, the Federation's chairperson, said that since RFTC started transport operations, it had grown and needed to change status to better

serve the public. He added that the company has equity worth Rwf13 billion that was accumulated by RFTC over the last six years. The federation was formed following the disbandment of ATRACO six years ago. "It

is impressive that we started with only Rwf790 million in 2011 and now we have Rwf13 billion. This is a huge achievement and we are committed to get Rwf100 billion in the next five years," he said.



Col (Rtd) Ludovic Dodo Twahirwa
Rwanda Federation Transport
Cooperative Chief Executive
Chairman



It is impressive that we started with only

Rwf790 million

in 2011 and now we have Rwf13 billion.

This is a huge achievement and we are committed to get

Rwf100 billion

in the next five years



How the company will work

Twahirwa said the first component will deal with improving public transport within and outside the City of Kigali. He said that over 200 public buses will have been purchased by the end of next year. The real estate component will deal with construction and renovation of taxi parks, managing them as well as venturing into construction of houses mainly for the

company's employees among others.

Twahirwa said, soon, the company started a micro-finance institution which will help the public, especially its members, to save and acquire loans to develop themselves.

The Minister of State for Transport, Eng. Jean de Dieu Uwihanganye, hailed RFTC initiative to form a company but urged





“

The forecasted projects in pipeline to be undertaken by RFTC in the next five years required management to raise cheap financing (debt & equity) from international financing agencies for continuous business expansion.

The Regulator



RFTC has been a big partner in improving public transport but we still have a challenge in the sector, we have over 1.3 million residents in the City of Kigali and about

one million



use public transport

them to use their experience in public transport to improve service delivery.

“RFTC has been a big partner in improving public transport but we still have a challenge in the sector, we have over 1.3 million residents in the City of Kigali and about one million use public transport; transport is also one of development pillars and whenever we have a problem the city seems paralyzed, we therefore need you to help us improve the sector,” he said. RFTC is made up of 2357 members from 12 cooperatives that specialise in the national public transport from all the provinces of Rwanda and the City of Kigali.

Why the restructuring?

According to the officials, there are five major reasons that underpinned the need for restructuring of RFTC. The size and magnitude of business activities undertaken by RFTC increasingly became heavy that required a lean decision making structure which the Cooperative federation did not offer. RFTC foresaw an increased investment portfolio that required huge financing where banks impose rigorous requirements to the Cooperatives.

The forecasted projects in pipeline to be undertaken by RFTC in the next five years required management to raise cheap financing (debt & equity) from international financing agencies for continuous business expansion. This was coupled by the need to manage public transport in a more professional and specialized approach – through segmentation of business lines as required by government is paramount for RFTC investment portfolio. This was coupled by the need for a Corporate Governance and Management style that suits RFTC heavy investment portfolio.

The shareholders (general assembly) and management of RFTC envisaged a creation of a private company that could shoulder all commercial activities of the federation and hence leave the federation with role of strategic guidance and capacity building of Cooperative Unions and primary cooperatives. The decision for restructuring was proposed in the general assembly extraordinary meeting held on the 16th October 2017 and was later on unanimously adopted on the 31st October 2017 in the ordinary general assembly meeting.

RITCO providing equitable transport services

Public transport development is one of the key engines of accelerating Rwanda's economic growth. Improving the quality and reliability of transport infrastructure and services is a major building block for reducing transport costs, increasing interconnectivity, and expanding access to the spread economic opportunities. With the help of RURA, attempts were made to extended equitable public transport services to all Rwandans.

To close the gap between rural and urban access to affordable and dependable public transport services, Rwanda Interlink Transport Company Limited (RITCO Ltd) was introduced. It is a joint venture company between the GoR and Rwanda Federation of Transport Cooperatives (RFTC), approved by the Cabinet meeting of 16th December, 2015 with an overriding objective of providing reliable public transport services, especial-

ly in rural areas. RFTC brings on board bags of experience in the areas of managing and operating public transport business

According to Mr. Julius RUKUNDO, RITCO MD, the company has assembled a sufficient fleet of modern buses in the effort to enhance access public transport services to all Rwandans, across different corners of the country. "We are devoted to strike a balance between rural and urban residents' ability to access equitable public transport services by providing conformable and



The Regulator



viable transport alternatives to all our clients from different angles of the country.

Apart from transporting many passengers seated comfortably, RITCO buses by far offer adequate cargo space designed to transport our clients' baggage. This has greatly facilitated countryside traders who used to spend huge sums of money to hire private trucks to move around their merchandise appropriately.

As the Government of Rwanda continue to revamp the public transport network, we are determined to continue staging one the most reliable and affordable public transport service that will penetrate every remote corner of this country.

"We envisage to continue seeking solutions and innovations that will enable us contain increasingly emerging public transport challenges, to remain one of the most competitive and reliable transport providers in the country. We are currently working around expanding our fleet of buses by adding 30 extra new buses; and also efforts have been made to equip all our buses with Air Conditioning (AC), Charging Systems and Security Cameras," RUKUNDO.

Rwanda gears up Energy generation to spur Socio-economic transformation

By the Link Team

Generation Capacity

Energy is the life blood of development. The energy sector plays a pivotal role in supporting socio-economic transformation and has an inherently systemic link to the growth of other sectors of the economy. Since energy is a critical input to other key economic sectors, such as manufacturing, construction, mining and quarrying, agro-

processing, transport, and tourism, the government of Rwanda has invested heavily in the energy sector.

Investments in the energy sector generate fiscal revenues through taxes, levies, and other duties imposed on various sector activities such as petroleum products imports (fuel oils and LPG) as well as tariffs on electrical consumption (18% VAT), supporting the country's resource envelope. In order to achieve sustainable economic growth, an enabling environment and policy framework has been put in place to facilitate new energy investments that meet the needs of





Rwandan consumers.

Generation capacity has tripled since 2010. The EDPRS II target of 563 MW was based on an overoptimistic assessment of demand growth, and therefore has not been met, but capacity is sufficient to meet all household and industrial demand. No load shedding has occurred since January 2015. By investing in generation to meet increasing demand, the energy sector has supported Rwanda's economic growth. Further, a pipeline of projects to be delivered in the medium term has been established. These projects can potentially increase capacity to around 512 MW.

Generation Mix Diversified

Large-scale, non-hydro generation projects have been commissioned. These include Gigawatt (8.5 MW), East Africa's first utility scale PV solar plant and Kivu watt (26.5 MW), a globally unique industrial scale methane-to-power plant. Kivu watt represents great innovation and technical excellence and has proven the potential of Lake Kivu's methane gas reserves. The use of peat as a fuel has been proven by Gishoma, a 15 MW peat-to-power plant. An 80 MW peat station

is now under construction. This will be Rwanda's largest power station. Although hydro will continue to be central to Rwanda's generation mix, diversification will reduce the impact of seasonal variations and improve the dispatch options for the utility.

Transmission Network

The high voltage transmission network has been extended to 744 km from 462 km in 2014 (and has doubled since 2010) to support the expansion of access for households and industry. Further, the Kigali ring has been strengthened.

Rwanda Electricity Access Roll out Programme (EARP)

Government, in partnership with development partners, launched the Rwanda Electricity Access Roll out Programme (EARP) in 2009 as its flagship programme to realise the primary electricity access targets of the EDPRS. EARP remains the key driver of on-grid electricity access in Rwanda. Since the last ESSP, connections have continued and on-grid access has been expanded to 28%. In 2017,



the requirements for connections were altered and the initial connection fee (around \$50) removed to ensure continuing roll out.

Off-grid Electricity Access

Off-grid electricity access is now viewed internationally as an important tool in the drive to increase global electricity access. Off-grid incorporates all non-grid connected households, from mini-grids to solar home systems (SHS) fitted to individual houses. Off-grid access in Rwanda has been increased from around 0% to over 7%, equivalent to 189,069 households. This has largely been achieved through SHS. Key to the growth has been the publication of the Rural Electrification Strategy (2016). The RES realigned access targets to place greater emphasis on off-grid, and established programmes to distribute systems to low-income households and support the development of the private

**Off-grid access in
Rwanda has been
increased from
around 0% to over**

7%

**equivalent to
189,069
households.**



sector. A burgeoning private sector now exists and this will drive further expansion of off-grid access.

The New Electricity Pricing Regime

The Rwanda Utility Regulatory Authority (RURA) carried out a major tariff review through 2016, with a new pricing regime introduced in January 2017. The tariff has been updated to disaggregate customers, price progressively based on consumption and encourage non-peak usage. Prices for industrial users have been reduced by up to 31% and prices for low-income households have been reduced by 50%, through the introduction of a life-line tariff. Further, RURA committed to regularly review the impact of the new tariff, with changes to be made as required by factors such as exchange rate fluctuations and subsector costs.



Energy Efficiency Strategy

Although ad hoc initiatives had been carried out, no coordinated approach to energy efficiency was in place prior to the Energy Efficiency Strategy (2018). The Strategy covers the full electricity value chain, from generation, through transmission and distribution to end-user consumption. Initial analysis has identified significant environmental and economic benefits for sector stakeholders and consumers. The Strategy sets clear initiatives and its implementation will form the basis of energy efficiency interventions through the NST-1 period

Use of biomass energy solutions

In order to reduce high consumption biomass, mainly in form of firewood and charcoal, to achieve the long-term target of reducing wood consumption

from 94% to 50% by 2018, 9,468 domestic and 86 institutional biogas digesters has been constructed. Equally, over estimated 70 percent of the households use at least one form of Improved Cook stoves, locally known as Rondereza including; either Canarumwe (Improved woodstove), or Canamake.

Furthermore, an awareness campaign on the use of LPG has been conducted countrywide, with a major focus on cities and peri-urban areas. The campaign has far generated positive results, imports for Liquefied Petroleum Gas (LPG) have increased fourteen times in the last seven years, a trend that officials at Rwanda Utilities Regulatory Authority (RURA) have interpreted as being the real picture of how fast Rwandans are adopting the use of cooking gas.

According to Eng. Gérard Rusine, Director of Gas and Downstream Petroleum regulations at RURA, about 90 per cent of LPG in Rwanda is used for cook-

ing, which means that the demand for gas use in the kitchen is high in Rwanda. The amount of LPG imported doubled from 5,020,595 kilograms in 2016 to 10,278,617 kilograms in 2017 owing to government policy direction in favor of the use of cooking gas in the kitchen.

Petroleum Storage

Petroleum reserves have been increased significantly since the last ESSP was published, from 30 million litres to 74 million litres. New storage facilities have been opened in Rusororo Sector, Gasabo District (22 million litres) and Jabana (21 million litres). A further 40 million litres of capacity is due online in 2018, part of a 60 million litre storage facility in Kigali. Further development of storage facilities remains a key objective for the petroleum subsector.



Methane Gas extraction doubles Rwanda's Energy Output

By S. Nzaramba

In 2016, the Rwandan President His Excellency Paul Kagame inaugurated a 27-megawatt power plant from Contour Global that extracts methane from Lake Kivu. It is the first gas water extraction power plant in the world, and since then, it started providing electricity to Rwanda. The power plant is connected to an offshore barge installed on Lake Kivu, a body of water between Rwanda and the Democratic Republic of Congo. It is deemed one of the three “killer” lakes in the world for its high concentrations of CO₂ and methane.

The methane gas contained within Lake Kivu is Rwanda's largest natural resource. The methane gas is the result of the globally unique geology of the lake and the naturally regenerating methane gas that is found there. Kivu-Watt, a 27 MW power station, is already generating power using extracted gas. It is anticipated that the methane resources will be exploited further as generation capacity increases in line with demand. Lake Kivu has 60-70 km³ of Methane (CH₄) of which 44.7 km³ can be extracted. There is a small annual accumulation of 0.14 km³ per year. The amount of electricity that can be generated from this methane depends on the extraction and generation.

Although it is currently anticipated that the primary end-use of the resource will be for electricity, methane gas has a variety of commercial and industrial uses. The methane deposit

could produce about 700 MW of electricity during 50 years, helping to solve the energy crises in the neighbouring countries. By removing the methane, the extraction will reduce the potential risk of gas eruption in the lake. Methane exploitation in Lake Kivu is therefore a win-win opportunity

The lake has approximately 2,700 square kilometers of surface area, and it is estimated that 60 billion cubic meters of methane and 300 billion cubic meters of CO₂ are dissolved in its waters. The enor-

mously high concentrations of these dissolved gases are thought to be a result of the two phenomena. The first is that the lake is located in the Great Rift Valley where tectonic forces are slowly pulling apart East Africa. Scientists believe that this heightened the level of volcanic activity is causing the slow release of CO₂ at the bottom of the lake. The second cause is the bacteria in Lake Kivu which converts the dissolved CO₂ into methane. There are also other types of bacteria present in the lake that produces methane gas by breaking down organic matter.



A barge floats on Lake Kivu. It extracts methane for electric power. (Image courtesy of Jason Florio.) Outlined in red, the Great Rift Valley causes volcanic activity in parts of East Africa. (Image courtesy of Kimdime69 [GFDL (<http://www.gnu.org/copyleft/fdl.html>)].)





RURA takes over regulatory responsibilities of the Petroleum Sector and starts with mapping of all stakeholders

By Stevenson Nzaramba

Petroleum supply and demand

Rwanda currently relies on imports of petroleum fuels from international sources through the Northern Corridor (the port of Mombasa in Kenya) for 7.1% of imports and the Central Corridor (the port of Dar-es-Salaam in Tanzania) for 92.9% of imports. Currently, the Dar-es-Salaam port is preferred due to cheaper transport costs, faster loading capacity and the payment flexibility of the Bulk Procurement System (BPS) unlike the

Open tendering System (OTS) in Kenya.

According to Gerald Rusine Director of Oil and Gas at RURA, “official petroleum products demand projections are contained in the Downstream Petroleum Policy (2012), which forecasts annual growth of 12% from 2012 up to 2020. Current projections assume an annual 8% increase in demand. It is this forecast that gives a requirement of 198 million litres in reserve by 2024. Current fuel consumption is around 38 million litres per month. The regular review and update of consumption and forecast figures is a required area of improvement for the petroleum subsector”. He said.

Petroleum products demand projections

Projected Fuel demand in m3 (8% annual increase)	Monthly Average
258,291	21,524
362,880	30,240
461,880	38,490
498,830	41,569
538,737	44,894
581,836	48,486
628,383	52,365
678,653	56,554
732,946	61,078
791,581	65,965

RURA has taken over regulatory responsibilities for petroleum from MINICOM and MININFRA which are responsible for the development of petroleum strategic reserves. And since that development, a downstream Petroleum Law is in place. This permits development of an appropriate regulatory and institutional framework. The market players are largely private companies which import products for distribution, mainly through retail outlets. Reflecting the significant increase in demand, the number of such entities has increased to over 40 from 20 at the time of the previous ESSP.

The key demand segments for petroleum products are road transportation, thermal power generation and aviation. The reduction of imported diesel for electricity production will be more than off-set by the increased need for petroleum products in transportation, particularly aviation and heavy industry, and also increased re-exports. For example, more transport vehicles on the road and expansion of air traffic at Kigali International airport will contribute to rising demand for petroleum products. Diesel and petrol are the dominant petroleum product imports, where diesel is being mainly used in the generation of electricity whilst petroleum products are used in transport.

Petroleum products importation (Litres) – 2011/12

Product	Annual consumptions (litres)
Petrol	91,668,658
Diesel	127,122,598
Illuminating kerosene	15,300,848
Heavy fuel oils	37,001,988
JET A-1	1,584,645
TOTAL	272,678,737

The demand for petroleum products is forecast to grow at rates commensurate with GDP growth each year between now and 2020, but will not be evenly distributed:

Diesel imports will gradually decline as new (non-diesel) generation projects are brought online and diesel units are converted to run on gas (which is more efficient) and aviation fuel demand is expected to grow at a significantly higher rate, as Rwanda is positioned to be a preferred hub for air transportation in the region, with a new airport at Bugesera being developed.

Liquid fuel and what causes price changes?

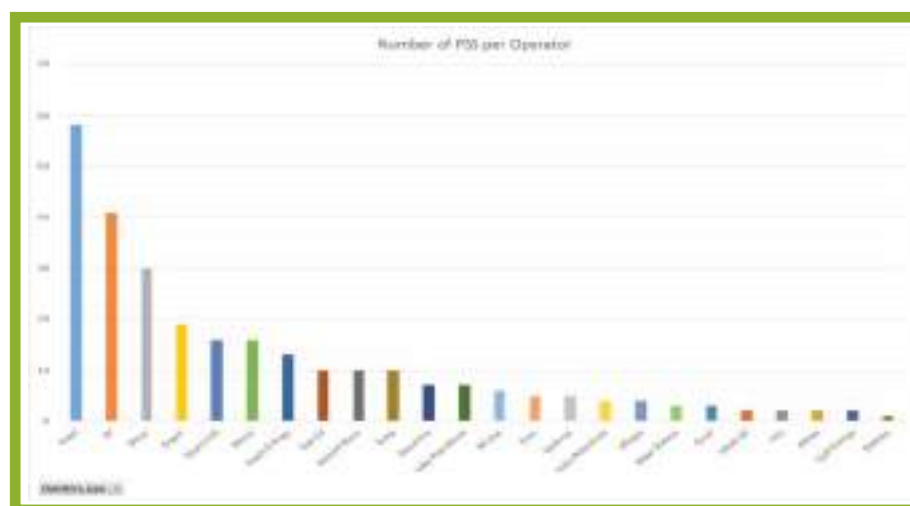
The downstream Petroleum industry in Rwanda entails various operations that involve importation, transportation, distribution and retail of petroleum products as well as related infrastructure of fuel storage facilities / fuel terminals and petrol service stations as well as petroleum retail sites. Rwanda is one of the land-locked countries served from the port of Mombasa via Uganda on the Northern Corridor and the port of Dar Es Salaam on the Central Corridor. For this reason, the country has been striving to build petroleum storage facilities to constitute the right level of strategic reserves to sustain possible disruptions along the said corridors. As per the Downstream Petroleum Policy of 2014, the Government of Rwanda had the initial target of increasing the petroleum storage capacity to 118,000 m3. The total existing storage facilities have now a capacity of 74,200 m3 with six (6) fuel depots currently used to store imported petroleum products. Twenty-six (26) Oil marketing companies are involved in importation, distribution and retail of petroleum products (Gasoline, Diesel and kerosene) and 249 Petrol service stations are in operation countrywide, serving as retail sites of fuel. This number is increasing due to areas that are still underserved.



Petroleum storage capacity

Product	Petroleum Storage Capacity in M3							
	Government Owned					Private Owned		Total
	Gatsata	Kabuye (ERP)	Rwabuye	Bigogwe	Kigali Airport	Rusororo (SP)	Jabana (OILCOM)	
Gasoline (PMS)	6,600	3,000	1,800	3,000	-	10,000	7,200	31,600
Gas Oil (Diesel)	4,800	2,100	1,800	2,000	-	10,000	14,400	35,100
Kerosene	1,500	-	-	-	-	-	-	1,500
Fuel Oil	1,900	600	-	-	-	-	-	2,500
Jet A-1	-	-	-	-	1,500	2,000	-	3,500
Total	14,800	5,700	3,600	5,000	1,500	22,000	21,600	74,200

The domestic fuel prices are mainly influenced by international oil prices as well as exchange rate fluctuations. The fuel prices in Rwanda are reviewed every two months for Super and Gasoil, while the price for Jet A1 is reviewed on monthly basis. The trend in the fuel prices from July 2016 to June 2017 is illustrated in figures below:



Key Milestones achieved by RURA

With the support of a consultant, RURA conducted an exercise of mapping all petrol service stations countrywide. The exercise came up with a database of all geographical data and technical information related to petrol service stations' facilities as well as their operation process. A computer based application was developed to facilitate RURA to not only assess and monitor the location of petrol stations but also to propose plots for petrol station projects. During this exercise, a total of 283 petrol service stations were found in the country whereby 75 of them have installation license from RURA and among which 249 were operating.

The exercise also came up with strategies and plans for phasing out substandard stations. The proposed strategies are currently being discussed with all involved stakeholders for further inputs before they get implemented.

Consumer education

Within the framework of raising awareness and educating consumers on the regulatory activities, a TV Spot on the role of RURA in regulating downstream petroleum was aired on Rwanda TV (RTV).

Liquefied Petroleum Gas penetration is impressive

By Denis Bayingana

A national survey showed that 83.3% of households use firewood for their cooking needs. The use of firewood by rural households is an attractive option as it is freely available to most households. In urban areas, charcoal is the preferred fuel. This is due to its long-life storage and relatively low-cost transportation, given its smaller volume and weight compared to firewood.

Rwanda has no domestic production of natural gas. The country relies on imported gas, especially LPG. All LPG is imported by road tankers of 10-20 metric tons through either Kenya or Tanzania. Retail distribution is done through service stations, independent distributors, and supermarkets in an assortment of cylinder sizes ranging from 1 kg to 50 kg. Tanks for non-retail use range from 100 kg to 20 tons.

Although consumption of LPG at the household level remains low relative to other fuels, progress is being made, with an increasing number of suppliers operating in urban and peri-urban areas. However, at the institutional level demand is still low. Rwanda Energy Group (REG) is currently assessing entry into this market through installing filling plants and delivering LPG to institutions.

RURA in its mandate to regulate the downstream petroleum sub sector adopted LPG regulations in 2012 and

commenced granting LPG business and installation licenses. These regulations were completely revised and adopted by RURA in January 2018. Revisions were made to add new provisions that will remove gaps and resolve problems relating to their technical, legal and economic aspects. The trend of LPG usage in Rwanda has gradually increased from those recent years especially in the capital city of Rwanda (Kigali) and in secondary cities of the country such as Musanze, Rubavu, Huye, Muhanga, Nyagatare and Rusizi. LPG penetration ratio is lower from remaining areas of the country except the area mentioned above. Accessibility of LPG in our country essentially in remote areas still a challenge as no LPG infrastructures are installed nearby to cut down the transport cost.

LPG is imported using Northern and central corridors. It is stored in LPG plants located mostly in the City of Kigali owned by companies as tabled below:



LPG storage facilities, their capacity and location

District	LPG storage facilities	Sector	Capacity (metric tone)
Gasabo	KOBIL	Gatsata	40
	ABBARCI	Jabana	75
	RWANDA OXYGEN	Ndera	86
Kicukiro	SULFO RWANDA	Gatenga	54
	SOCIETE PETROLIERE	Gikondo	81
Nyarugenge	RUCSA	Muhima	47
Total			383

Alongside the main road Kigali-Huye, in Kamonyi District there is another LPG plant owned by LAKE PETROLEUM precisely in Rugarika sector which is under construction with one tank of total water storage capacity of 40 m3 (20.5MT).

The increase of LPG penetration to 15% of the households in Kigali and 4% in other urban areas is considered “physiologic” under current economic growth.

The doubling of LPG penetration to 30% in Kigali and 10% in other urban areas is tentatively set as a realistic target if appropriate subsidy policies are put in

place such as tax exemption for LPG and Cylinders.

During RURA inspection, different LPG Business companies were identified involved in the Wholesale of LPG. These include KOBIL PETROLEUM RWANDA, SOCIETE PETROLIERE, KIGALI GAS TRADERS, HASHI ENERGY, MEREZ PETROLEUM, SULFO RWANDA INDUSTRIES, ABBARCI, SAFE GAS, LAKE PETROLEUM, RUCSA, NDOLI GAS LTD, RWANDA OXYGEN, CITY GAS, MIHANI GAS and YES GAS. Another observation is that Retailing activities of LPG are mainly done at Petrol service stations and shops.





SP Ltd embraces digital edge in delivery of its services

Societe Petroliere (SP) is a key player in Rwanda's fuel and gas business, we are known for offering unmatched state-of-the-art solutions to our clientele.

SP's impeccable growth has seen it budding a number of affiliates namely; SP Aviation Ltd, SP Tanzania Ltd and SP Kenya Ltd. SP is an equal opportunity employer with a total workforce of about 67 employees including 15 employees of SP Aviation and 5 of SP Kenya Limited and SP Tanzania Limited.

We are a company inspired by embracing innovative solutions into the products we offer that include: - Automotive Gas Oil (AGO or Diesel), Premium Motor Spirit (PMS or Petrol), Dual Purpose Kerosene (DPK), JET A1, Heavy Fuel Oil (HFO) Lubricating Oils and Liquefied Petroleum Gas (LPG). Our monthly fuel volume turnover is currently at 16 million litres. We are the leading local oil company in sales volume both in Retail and Commercial channels and second in terms of retail stations network footprint. We have 42 retail stations spread across the country.

LPG Penetration

The need to use gas in cooking has hit a higher notch in recent years – the number of LPG users in Kigali city and secondary cities is expected to have reached 30% and 10% respectively by 2020. This upsurge of LPG penetration in Kigali and other urban areas boosted by the momentum set by the effects of tax subsidies put in place by the Government of Rwanda on LPG and cylinders, has enabled us to set target to not only strengthen our LPG dominance but also

continuously embrace new and innovative ways to deliver LPG both as a product and a service. The customer always remains at the center of the value chain.

"We are knowledgeable of the government's position to reduce consumption of biomass for cooking, and mammoth investment has been made to put up appropriate structures to modernize our LPG filling and upturn the storage capacity, to satisfy the exponentially increasing demand for cooking gas in Rwanda," says Dieudonne RUMARA-GISHYIKA, SP Head of LPG Business. He further stated, "SP owns an LPG Gas filling Plant at Gikondo Industrial Area and by far has the largest gas market share in the country."



Fully Automated Fuel Depot

The Rwandan government has put in place policies and innovation that support the advancement of Information Technology based economy. SP has proactively leveraged on the staged enormous IT opportunities in constructing its fully automated fuel depot, becoming the first fuel terminal in Rwanda to showcase state of art fuel automation technology. The facility stores 15 mil-





OUR PRODUCTS

Fuels

- Petrol
- Diesel
- Kerosene
- Jet A1
- Bitumen
- HFO (heavy fuel oil)
- LFO (light fuel oil)

LPG

Cylinder levels

- 6Kgs
- 12Kgs
- 15Kgs
- 20Kgs
- 38Kgs

The above cylinders are of two types:

- Composite cylinder
- Metal Cylinder
- Bulk Deliveries

Lubricants

- Engine Oils: Photos
- Industrial Oils Photos
- Special Oils Photos

lion litres of diesel, 15 million litres of petrol and 2 million litres of jet fuel

The facility, which sits on a 12-hectare piece of land, fulfills the requirement of a modernized and international fuel depot, comprised of a comprehensive firefighting facility with water storage capacity of 1.5 million litres, loading and offloading gantries (which can handle 7 loading and three offloading trucks simultaneously), CCTV surveillance, a well-equipped laboratory for product quality management and parking capacity of over 100 long haul trucks.

The automation enables accuracy and consistency in detection of any contamination of the product before offloading, which has raised the confidence of clients that their products are into the hands of irrefutable professionals.

Making Cashless Economy a Reality

SP Electronic Card (SPEC), which is available at all its petrol stations and all selling points in different parts of the country, has significantly enabled cashless transaction in fuel consumption. "Fuel



consumption using Electronic transaction has facilitated our clients to efficiently monitor their fuel consumption on one hand, and on the other enabled the marketers to avoid holding huge sums of money at stations at any single point," said Claudien Habimana, the Managing Director of SP.

SPEC has moreover benefited clients who own fleets of vehicles in reducing the required paperwork and ad-

ditional staff, as the process is automated. When a vehicle is fuelled, a message is promptly delivered to the client, indicating the details of the transaction and their balance status. At SP, and in collaboration with MTN Mobile Money services, all clients have the benefit to enjoy e-payment services. The services available at all our stations is a 'dream come true to the unbanked as well as all the SPEC holders.

For more information, please contact us:
+250 788 306 232/3 | Email: info@sp.co.rw | www.sp.co.rw

WATSAN strengthened regulations, credited for improved service delivery

By Stevenson Nzaramba

Rwanda Utility and Regulatory Authority is mandated to enforce sector laws and regulations, issue licenses, ensure compliance by Water sector partners, sector standards, perform audits and inspections to ensure compliance, monitor the quality of services provided, advise service providers on service delivery, educate consumers and advise the government in regard to the Water related issues.



From the time of its formation in 2011, over eleven (11) regulations have been developed and these include; Water Supply Services Regulations (Sept 2015); Regulations for minimum required service level in water service provision (2012); Regulations on decentralized wastewater treatment systems (updated 2016); Regulations on Cleaning Services (updated, 2016); Regulations on solid waste collection and transportation (updated, 2014); Regulations on solid waste recycling (2015); Regulations on liquid waste collection and transportation (2016) and regulations on hazardous waste management (2017)

The number of licensed



operators has increased over years from 2011 and in all sectors and among regulated sectors, the following are licensed services: Water supply, Solid waste management, cleaning services, decentralized wastewater treatment and Liquid waste management. There were

various attempts to improve the management of water services since 1988 with User committees, Reggie Communautaire, Reggie Associative and PPP in 2004.

Due to the reluctance of the private sector operators, coupled with individuals and Cooperatives managing

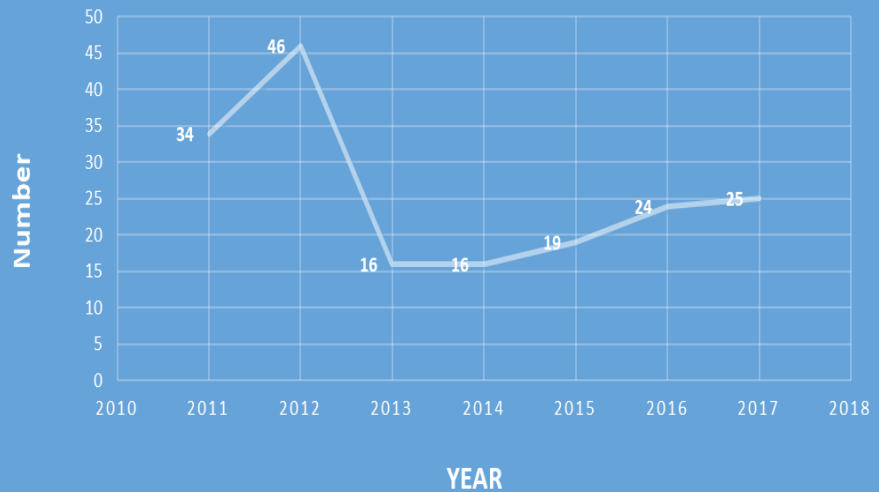
1-2 water systems and the existing levels of unprofessionalism, in 2011, the Regulator introduced a strategy to regulate rural water services and therefore started by sensitizing and engaging Districts. In the sanitation sector, all service providers are licensed and currently, there are 26 licensed operators. Each sector in the City of Kigali has been allocated one operator for waste collection and this has led to improvement of Waste collection service since, it is done door to door and in a span of 4 times per month.

Before 2011, waste collection & transportation services were provided to only selected households in Kigali, the business was conducted by few associations and cooperatives at the beginning.

all Districts have
District Water Board to
oversee the planning &
management of water
schemes at

100%,
Water tariffs have been
set for Urban (2015)

TREND OF OPERATORS



As a result of the strengthened regulations, water service coverage increased to

84.8%

(EICV4), new water systems were developed and water treatment plants also increased

Later, many actors entered in the business and there was no order in operation i.e more than one company/cooperative could meet within a village (Umudugudu) to only collect wastes from few and selected Households. When RURA started regulating sanitation in 2011, there was order in service provision and brought a satisfactory level of service provision by committed operators.

As a result of the strengthened regulations, water service coverage increased to 84.8% (EICV4), new water systems were developed and water treatment plants also increased. As far as sanitation is concerned, there was increased cleanliness especially in the city of Kigali as a result of the door to door waste collection in households and the tariff for waste collection and transportation was streamlined to benefit the citizens.

On top of efficient regulation of the sector, RURA has had to carry out workshops & meetings with all districts on management of water systems, clustering and District Water Boards; clustering of water systems to create economy of scale. For instance, all Districts have District Water Board to oversee the planning & management of water schemes at 100%, Water tariffs have been set for Urban (2015) and Rural water (2016) and there has been increased number of operators for the management of rural water systems to 33.

With the current pace, Rwanda is set to attain 100% targets in Water supply and sanitation in 2024

The success in improving settlements across the country on many other Millennium Development Goal (MDG) targets including access to water and sanitation. Political will from the top and at all levels, a working institutional framework, and clear, feasible policies and strategies, are all factors underpinning Rwanda's success in creating real change in the water and sanitation sector.



Nzonve water treatment plant



The Rwandan Government is committed to reaching ambitious targets in water supply and sanitation, with the vision to attain 100% service coverage by 2024. The importance of adequate water supply and sanitation services as drivers of social and economic development, poverty reduction and public health is fully acknowledged in Rwanda's main policy documents. The national policy sets out the sector's contribution to achieving Rwanda's Vision 2020, the MDGs and Economic Development and Poverty Reduction Strategy (EDPRS) targets. To accelerate the move towards the national 2024 targets of 100% access to water supply and sanitation, Rwanda adopted a 7-years program to achieve 100% access to improved water supply and sanitation facilities.

Water Production capacity

Since 2010, four new water treatment plants have been constructed. They include Nzove I water treatment plant which has 25,000m³/day production capacity to supply drinking water in the city of Kigali.

To fill the water demand gap in Kigali city, the government contracted Culligan international to upgrade Nzove water treatment plant and optimize it to its full capacity of 40,000m³/day, construction of new Nzove with a production of 40,000m³/day that can be upgraded to 65,000m³/day.

Currently, six water treatment plants were rehabilitated and upgraded. They include Kadahokwa WTP in Huye District, Nyanza WTP and Gicumbi water treatment plant.

Other new treatment plants are under construction, here we can mention Kanyonyomba in Bugesera which will produce 5,000 m³ per day will cover the water demand in this area.

To reach the target of clean water coverage, WASAC has entered in public private partnership with Kigali Bulk water project. This project will generate 40,000m³ per day and this will bridge the gap of water demand and some parts of eastern province.

Water Supply infrastructure developed

The GoR invests in water supply projects including construction of water pipeline to supply water to the population. 2,168 km of new water supply systems were constructed in rural areas to get water to 1,481,680 people. All these have been constructed in various districts and have changed peoples' lives and improved wellbeing.

Access to improved sanitation services

Key sanitation projects that were under implementation included 3 landfills and 3 faecal sludge treatment plants in Kayonza, Nyagatare and Nyanza, over-

all progress being at 35%. Three Faecal sludge compactor trucks were supplied. Study for rehabilitation and upgrading of Semi- centralized in Kigali estates; Study for Construction of Kigali Septic Tank sludge management; Inventory of lands to be compensated (Expropriation for Kigali Central Sewerage Project phase I) are ongoing; and sanitation master plans almost completed .

Other sanitation ongoing projects:

Rwanda Sustainable Water Supply and Sanitation Program

The development objective of the program is to improve the quality of life and socio-economic development of the people and country by ensuring equitable provision of adequate, reliable and sustainable water and sanitation services for targeted cities.

Program outputs

- Water Supply Infrastructure and Services Improvement to support rehabilitation, upgrading and extension of water supply system in Kigali City and in six (6) satellite cities of Musanze, Rubavu, Muhanga, Nyagatare, Huye and Rusizi

- Sanitation Infrastructure and Services Improvement to support sewerage in Kigali, faecal treatment plants and solid waste landfills in Ru-

sizi, Karongi, Musanze and Rubavu and school latrines

- Institutional Support to undertake various activities to improve efficiency and effectiveness of the WASAC, districts and private operators

Water Supply Infrastructure and Services Improvement

- Rehabilitation, upgrading and extension of water supply network in Kigali City and of the peri-urban areas including forwarding infrastructure for Kanzenze water treatment plant

- Construction and upgrading of Nzove Water Treatment Plant with additional 55,000 m³/day for Kigali City

- Construction of Gihira II Water Treatment Plant Capacity 15,000 m³/day and Rehabilitation



of existing Gihira Water Treatment Plant capacity 8,000 m³/day

- Rehabilitation and extension of water supply distribution networks in the 6 Satellite cities of Musanze, Rubavu, Muhanga, Nyagatare, Huye and Rusizi.

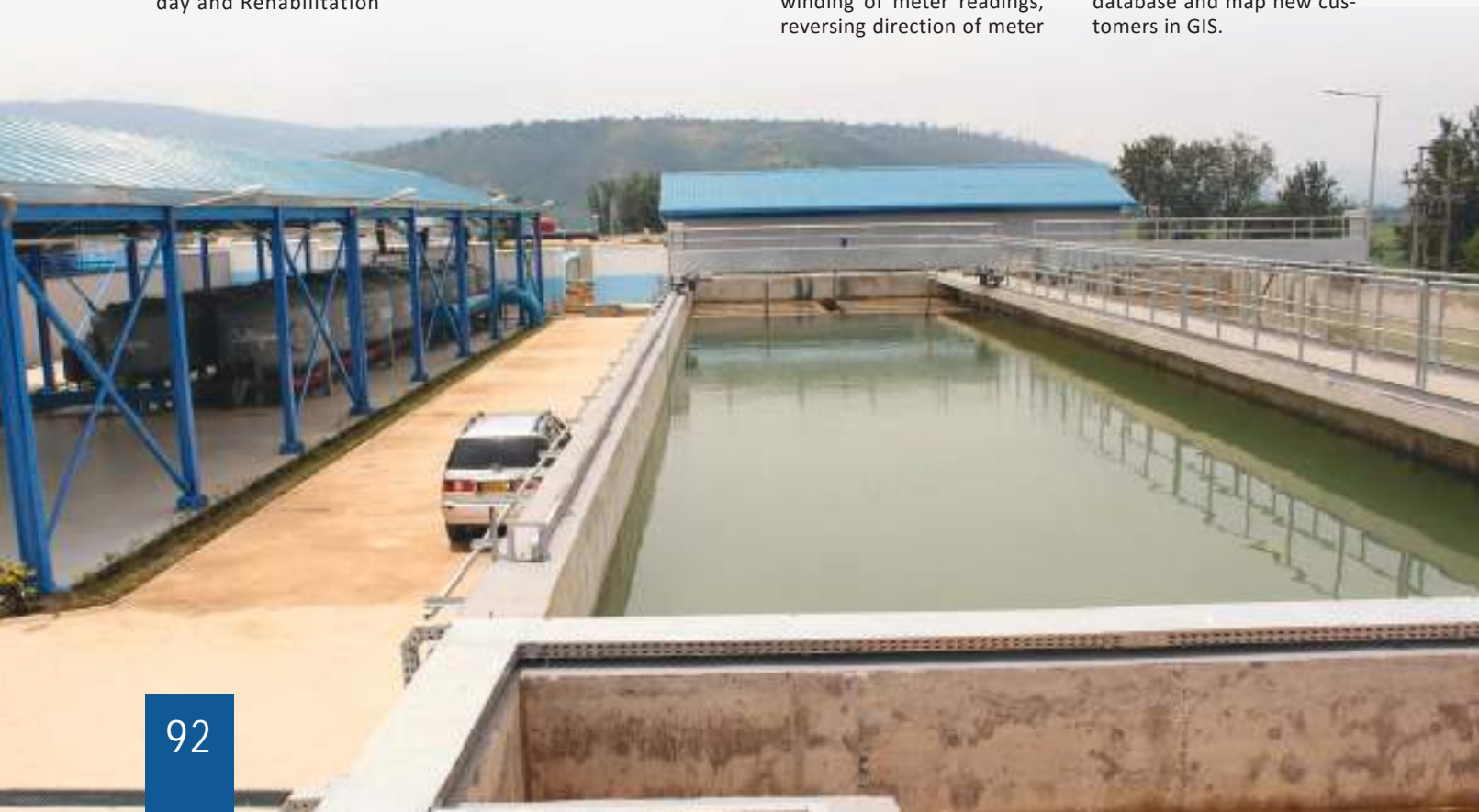
- Studies for future investments (Muhanga, Karongi and Ngoma water treatment plants)

Reduction of Unaccounted for Water

Unaccounted for Water is the water produced and lost due to leakages and unlawful water consumptions (physical and commercial losses). Physical losses are attributable to aging of the water network and inefficiency of the production processes. Commercial losses include Illegal connections, meter tempering, bypassing the meter, re-winding of meter readings, reversing direction of meter

installation against water flow direction and none recording of water consumptions due to water meters' defaults. The allowable level of Non-revenue water for developing countries is 20%. Currently WASAC count 35% of Non-revenue water

WASAC has put in place strategic action plan to reduce the water losses; these included: Rehabilitation of defective/old network, extension of distribution network closer to customers, control of quality of new customer connections, intensification of leak detection, sustaining universal customer metering and meter management, investigation of the trend of night flows, control of visible leakages, managing pressure, educating and encouraging customers and the general public to participate fully in controlling and/or reporting water losses both physical and commercial, conducting customer and network surveys to up-date customer database and map new customers in GIS.





The Regulator

rwandair.com

Cape Town, *see you soon!*

flights starting May 2018



(+250) 788 177 000
reservations@rwandair.com



RwandAir

Fly the dream of Africa