Partnership Ready Rwanda: Digitalization

Sector Overview

In July 2000, Rwanda adopted Vision 2020, outlining a long-term development path for the country and ambitious goals to be reached by the year 2020. Stating that the country had been badly governed during most of the previous century, the vision expresses the aim of attaining a per capita income of a middle-income country by 2020 in an equitable way, and underlines Rwanda's determination to be a well-governed, modern, strong and united nation, without discrimination between its citizens.

Vision 2020 understood from the very beginning, that unlike stipulated in the past, agriculture can never be the sole engine of growth, and thus calls for a transition from subsistence farming towards a knowledge-based economy. It is in this context, Rwanda's consistent focus on information and communication technology (ICT) is to be understood.

To create an enabling environment, monitor progress on defined indicators, promote ICT in education and build the necessary infrastructure, Rwanda substantiated Vision 2020 in several plans up to the current Smart Rwanda Masterplan.

Today, Rwanda is home of a vibrant ICT sector committed to and mirroring the national ambitions. The sector is actively promoted by the Government and its vibrancy manifests itself in several much used WhatsApp groups and on Twitter rather than by a strong web-presence.

Policy and Legislation

Rwanda's acknowledgment of the important role ICT plays for the development of the country is not limited to vision and planning documents: Rwanda has a well-established Ministry of ICT & Innovation (MINICT, formerly Ministry of Youth & ICT) who is responsible for coordinating national information technology, communication & innovation policies to foster economic growth and reduce poverty.

The policies and strategies, including the National ICT Policy, Broadband Policy, Broadcasting Policy, Data Revolution Policy, Digital Talent Policy, E-Waste Policy, ICT Content Strategy, ICT Hub Strategy, ICT Sector Strategic Plan, and the Smart Rwanda Master Plan, are published on the Ministry's webpage. Even though
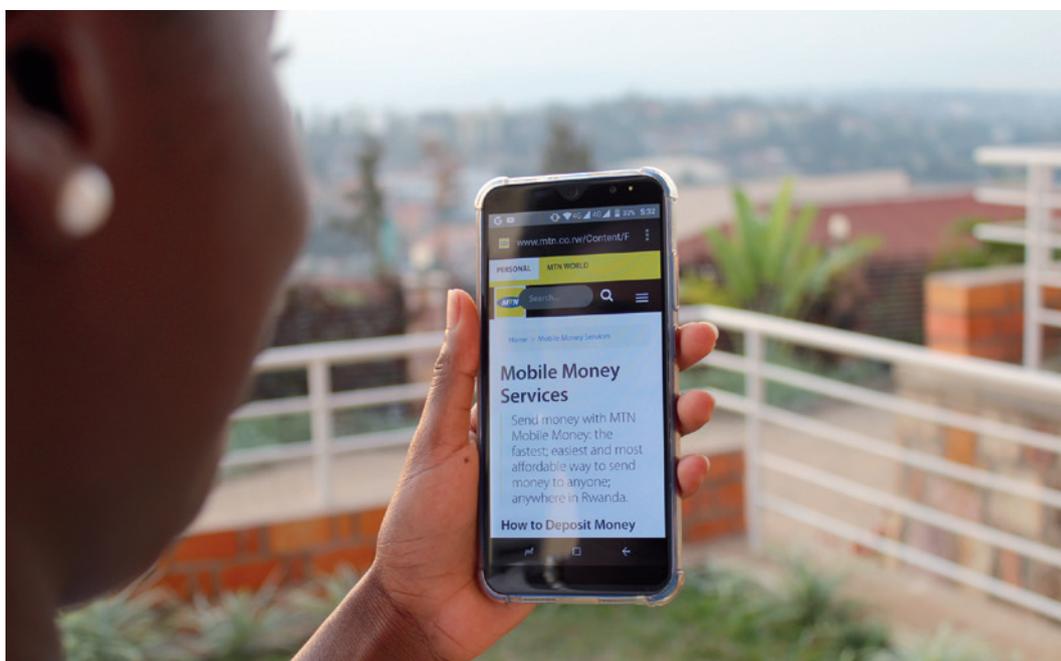
categorized into approved policies, policies under development and upcoming policies, ICT laws, and Presidential and Ministerial orders, it is not always easy to assess their maturity, state of implementation and possible implications for a business.

MINICT works closely with RURA, the national regulator, IPOSITA, the National Post Office, RDB, the Rwanda Development Board, and with RISA, the Rwanda Information Society Authority, who is mandated to plan and coordinate the implementation of Rwanda's ICT for Development Agenda.

Understanding ICT as a tool for innovation and job creation, Rwanda acknowledged the important role of the private sector is to play by creating an ICT Chamber within the Private Sector Federation (PSF) to stimulate entrepreneurship and competitiveness "to make Rwanda the leading ICT society".

Familiar with the laws, policies and strategies of the ICT-sector, and having visited Rwanda to better understand the local situation, investors come to RDB and appreciate the ease of setting up a business in Rwanda: This can be done – it is true – in less than one day (if all necessary documents can be provided).

Rwanda is attractive in many respects and the country does market its assets. Ranking constantly amongst the best destinations for doing business in Africa, Rwanda's ICT sector has attracted annually more than 55 Mio USD in Foreign Direct Investment according to MINICT cited in a very comprehensive report by UNCTAD.

Given Rwanda's high-level commitment to ICT and the business-friendly environment, investors sometimes tend to forget, that like any other country, Rwanda needs to collect taxes and that the Rwanda Revenue Authority (RRA) is using ICT efficiently too.

Actors

The ICT Chamber of PSF states that the mission of the Rwandan ICT sector is to "create 100 technology companies each valued at over 50 Mio USD by 2025". While this may look unrealistic to some investors, being in Rwanda one can't fail to admire the dynamics created by sheer ambition.

Coming to Rwanda, investors will not find themselves alone and probably struggle to keep an overview of the budding ICT sector with players in Government, the private sector and amongst development partners:

→ **GOVERNMENT**

Understanding ICT as a public utility and as part of the national infrastructure, the Government of Rwanda committed to build a "world-class" internet and mobile telecommunications infrastructure, a commitment largely met with a country-wide optic fiber network and the 4G LTE mobile network now available in 95% of the country. With the infrastructure laid, the Government's focus shifted to services, such as digitized citizen services provided through Irembo, and – supported by a Data revolution policy – local content.

The Government is a large – if not the largest – player when it comes to ICT demand. Projects and purchases of ICT equipment are tendered through the e-procurement portal Umucyo which was developed in collaboration with the Republic of Korea. Investors wanting to do business with the Government have to use Umucyo, for which a digital certificate issued by RDB/RISA is needed.

Government takes a leading role in marketing both the country and the ICT sector, e.g. by organizing trade delegations to neighbouring countries or by hosting the Smart Africa Initiative and the related Transform Africa Summit (see Box 1).

Transform Africa Summit

The 5th Transform Africa Summit – themed "Boosting Africa's Digital Economy" – took place in May 2019 at the Kigali Convention Center. It registered some 4000 participants, ranging from Heads of State, Ministers, Government officials, to industry leaders, investors and young entrepreneurs.

The Summit is the flagship event of the Smart Africa Initiative with a vision to unite the 54 African countries in one Single Digital Market. Smart Africa has its secretariat in Kigali and the chairman of their board is the President of the Republic of Rwanda.

Investors intending to use Rwanda as a hub and do business in other African Countries too, should check the opportunities extended through the Summit and Smart Africa by following them on social media or subscribing to their newsletters.

DEVELOPMENT PARTNERS

Development partners – understood in a very broad sense including foundations, social enterprises and venture capital of otherwise commercial companies – are enablers for the local ICT sector, e.g. through programs helping to close the skills gaps which are still encountered by many investors when looking for qualified staff.

Development partners however appear also on the demand-side of ICT when directly tendering for ICT-projects, and less frequently, on the supply side, when they assist the Government in developing ICT-Systems, e.g. the National Data Center or the Umucyo e-procurement platform.

Not to get caught between market forces larger than their own investment appetite, Investors will want to explore carefully the initiatives of the development partners present and understand their projects as opportunities.

Rwanda tries to maximize aid efficiency by allocating certain sectors to specific development partners and encouraging a "division of labor" between them. The countries most active in ICT are Germany, Japan, and Korea, with Israel, Sweden or the UN International Trade Center ITC (eCommerce) marking their entrance too. Furthermore, the sector receives investments from

the foundations of Facebook and Al Gore (creating Engineering Teams with Andela), Howard G. Buffet Foundation (focusing on Agriculture), Clinton (Health), UPS Foundation (Health: Zipline – leveraging drones to deliver life-saving blood) and Westerwelle/ Evonik (Startups).

Through GIZ, Germany supports the Private Sector Federation with its ICT Chamber and launched in May 2019 a Digital Transformation Center in Kigali (see Box 2).

Digital Solutions for Sustainable Development (DSSD)

On the eve of the Transform Africa Summit 2019, GIZ opened a Digital Transformation Center in Kigali as part of their Project titled "Digital Solutions for Sustainable Development." The project is designed to support Rwanda's transformation towards a knowledge and service-based economy. It aims at strengthening both the institutional and human resources of the Ministry of ICT and Innovation and its implementing authority RISA.

Partners developing digital solutions and thus contributing to the implementation of the Smart Rwanda Master Plan – find inspiration and a new home in the Center operated by DSSD.

DSSD@giz.de

Japan through its development agency JICA supports RDB in developing ICT strategies since 2008 and is currently very engaged in the "250Startups incubation program" which aims at accelerating startups to become fundable. Very actively, Japan promotes the exchange between Rwanda and Japan, provides scholarships and participates with sizeable delegations in the Transform Africa Summit.

Korea's investments through Korea Telecom in building the fiber and the 4G LTE networks opened the doors for a closer collaboration between the two countries. For several years already, Korea embeds ICT-advisors in various Ministries, provides scholarships and is engaged through its development agency KOICA with an ICT Innovation Capacity Building Project.

This section would not be complete without mentioning United Nations Population Fund (UNFPA) and the European Union, who support – not only in ICT – the National Institute of Statistics (NISR) implementing the national census, and the World Bank, who accompanied Rwanda from the early phases of Vision 2020 and published a series of papers on the important role ICT plays in this transformation process.

→ KIGALI INNOVATION CITY, ACADEMIA AND EDUCATION

Understanding that Rwanda's transformation to a knowledge-based society must start with education, the Government invested from 2008 onwards considerably in equipping primary schools with technology: After an initial hype around the "One Laptop per Child Project", the government signed a deal with Positivo BGH to assemble low cost laptops in Rwanda for Government Institutions and for exportation to the East African Community: The laptops procured for education can still be seen on the 500 Rwanda Francs Bills today.

Investors looking for skilled labour will want to check out Rwanda's Universities offering higher education in ICT: The College of Science and Technology of the University of Rwanda, re-established in 1997 and often still referred to under its previous name KIST, reliably graduates IT-Engineers, and – with the support of Esri – since 2009 also bachelors in Geographic Information Systems. The Integrated Polytechnic Regional Colleges (IPRC) – with the Kicukiro Campus built by Korea – are becoming a force in IT education to be reckoned with.

In 2011, the Government of Rwanda signed an agreement with the Carnegie Mellon University (CMU) to start offering a master's degree in information technology taught by full time faculty staff locally present in Kigali.

CMU came to Rwanda with the vision to produce creative and technically strong engineers, trained in the African context, and prepared to make transformative impact in their communities and the world: With CMU-Africa, for the first time world-class tertiary education became available locally and a healthy competition for more quality and applicability in education was launched.

In the wake of CMU came institutions such as the African Leadership University (ALU), the African Institute of Mathematical Sciences (AIMS) and, building on earlier investments, the University of Global Health Equity (UGHE)

CMU will start the 2019 classes in its new campus in the Kigali Innovation City (KIC), Rwanda's planned technology cluster in the special economic zone a few kilometres outside Kigali. ALU and AIMS are earmarked to follow and complete the University triangle at KIC, while the UGHE opened its campus in Butaro near Lake Burera in the Northern Province, welcoming the first cohort of master students in July 2019.

→ PRIVATE SECTOR

Education is not only available at Government schools and accredited Universities. There is also large number of private schools and social initiatives offering various sorts of ICT and entrepreneurship trainings. Such trainings – often offered in the form of on-the-job trainings – build a bridge between the expressed will of the companies to contribute to development and their own need for skilled staff.

One well-funded case in point is Andela who trains developers in Rwanda (Nigeria, Kenya and Uganda) for contract work with US employers. Andela's investors are quoted saying that remote work could help reduce greenhouse gas emissions. Not quite at the scale of Andela, Muraho Technology and German-managed CodeforAfrica are present in Rwanda too with concepts of offering contract work for markets in the North.

The ICT Chamber of the Private Sector Federation has more than 100 member companies mostly active on the technology supply side, offering IT services or products to the Government, other private companies, and to a certain extent exporting them to other African countries. Many of these companies are small and working hard to translate their ideas into competitive solutions and establish their businesses permanently on the market. A few companies however are considered to have "made it":

Hehe – the Kinyarwanda word for "where" – founded in 2010, present at the first edition of the Transform Africa Summit and named one of the top 10 technology startups in Africa by Forbes in 2014 – defined the early years of the Rwandan startup scene. When DMM from Japan acquired all shares of Hehe in 2017 and shares in AC Group to create an "IT All-Star Team in Rwanda" the saga was born that DMM Hehe – as it is called now – was acquired for 20 Mio USD.

Even two years before the first public appearance of Zipline – now valued to be a tech-unicorn in California and praised for delivering live-saving blood by the means of drones – the local press mentioned in 2014 a Rwandan developing a photography drone. This Rwandan, Eric Rutayisire, founded Charis UAV Ltd. and diligently developed it to become the first licensed drone company in Rwanda offering services to government agencies (e.g. mapping the wetlands around Kigali) and the private sector (e.g. monitoring progress on large construction sites such as the new campuses of CMU and UGHE).

While "Rwanda's" Zipline – with more than 14.000 deliveries effectuated – became a synonym for using drones in Africa, it is lower-key Charis UAS who knows how to deal with the local regulations and really fly a drone in the country for other purposes than delivering blood.

Awesomity got a lot of attention when they were awarded to build the app for Volkswagen's Mobility Solution and thus became a small part of VW's 20 Mio USD investment in Rwanda. Awesomity, AC Group and a third local company where presented to VW by the ICT Chamber of PSF who helped to convince VW to choose a local instead of an international solution. Awesomity grew with the task at hand and delivered an app many now use to hail a ride.

Common to these companies is that their daily realities of operating their businesses in Rwanda may look quite different from the press releases hailing their initial successes.

Less in the limelight are the Rwanda Telecentre Network (RTN) operating more than 2.000 centers across the entire country to deliver Irembo E-government and other services for the local population, or Esri Rwanda offering GIS Software and related services in the region of the African Great Lakes.

Less present in the press too, but very tangible to the public are activities by large companies from other African countries, be it the omnipresent mobile-provider MTN or Jumia from Nigeria, the unrivalled leader in the home-delivery of food from over 100 Kigali restaurants – a service much loved not only by expatriates.

With Mara phones, smartphones "Made in Rwanda" to hit the market anytime soon, or Yego Innovation and SafeMotos using ICT heavily in smart (and safe) transportation, and many more, Rwandan ICT can never be described exhaustively by just this paper. A full mapping of the ICT ecosystem however is the goal of a joint project by JICA and GIZ, the results of which are expected to be public available soon.

Rwanda's vibrant and ambitious sector defies simplification and quick classifications:
On one hand, the private sector is seen by some classic scholars in economy to be under too much government influence or to receive too much money from social enterprises to be called "private" still.

On the other hand, the Government of Rwanda – much like Korea or Japan did in the last century – invests in development and helps the private sector to get started in key industries, with ICT being one of them. Committed to good governance and enforcing accountability through performance contracts for government officials – the so called Imihigo to be met every year by June 30th – the government is often said to manage the country like a private company: Rwanda Inc.
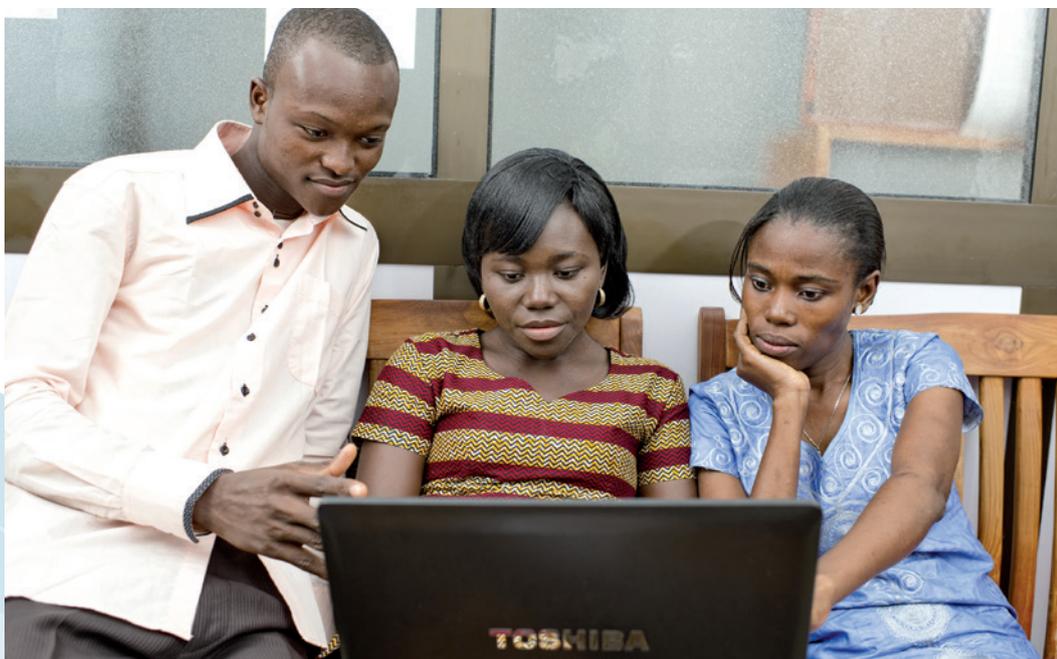
Murakaza Neza –
Welcome to Rwanda

The growth of Rwanda's economy in general and the ICT-market in particular are impressive, but in absolute terms they are still small with opportunities to go for, especially for those ready to invest the time it takes to build a sustainable business and develop one's own market.

While we see well-established Rwandan companies in FINTECH and large international engineering companies competing for Government tenders, there is still room to make transportation or agriculture smarter and grow MEDTECH beyond the Management Information System (HMIS) at the Ministry of Health, Zipline's blood deliveries and the digital health services Babyl is providing.

Despite many talking about data being the new oil and Rwanda having a Data Revolution Policy, data is still more often inaccessible than properly maintained or used to drive knowledge. With only a few companies active in data analytics yet, there must be room to do more than the dashboards we tend to see today.

Asked by a European journalist at the launch of the Zipline drone port in 2016, if there are not more pressing issues to fix in Rwanda (e.g. building roads) than venturing into drone technology, Jean Philbert Nsengimana, then Minister of Youth and ICT replied: "What we do not like in Rwanda is to be told to fix old problems first, before we can become part of the new emerging technologies and opportunities".

Undoubtedly Rwanda created a most conducive environment for new technologies and ICT. It also excels when it comes to vision, dedication and hard work of the Government, including rooting out corruption – qualities often summarized under good governance.

External factors beyond the control of the Government however should remind investors not to throw all caution to the winds: The limited size of the local market (both for goods and skilled labour), the absence of natural resources exploitable at large scale and the costs related to transport to or from land-locked Rwanda.

Not daunted by such realities, Rwanda turns them into advantages. RDB markets the country as the natural hub between English and French-speaking Africa, and as a proof-of-concept destination, citing Zipline who expanded its Rwandan successes to Ghana or Volkswagen who wants to export new mobility concepts tested in Kigali to other African countries.

This understanding of the market is supported by the impressive expansion of Rwandair's network and echoes in the words of the CEO of Norsken: "We see great opportunities in Rwanda and Kigali as the natural gateway to the fast-growing markets and entrepreneurs of East and Central Africa".

ⓘ **Practical information and Sources:**

- Ministry of Information Technology and Communication:
  ICT Sector Strategic Plan 2018-2024

- Starting a Business in Rwanda:
  www.businessprocedures.rdb.rw

- Doing Business report 2019: www.doingbusiness.org

- Umucyo e-procurement system for Rwanda:
  www.umucyo.gov.rw/index.do
  To access the system and submit proposals, a digital
  certificate (digital ID) has to be obtained from RDB/RISA,
  see www.govca.rw/

- Transform Africa Summit:
  www.transformafricasummit.org

- Smart Africa: www.smartafrica.org

- Rwanda Development Partners:
  Maximize aid efficiency in Rwanda

- Westerwelle Startup Haus Kigali:
  www.westerwelle.haus/en

- Deutsche Gesellschaft für Internationale
  Zusammenarbeit (GIZ) GmbH in Rwanda:
  www.giz.de/rwanda

- Carnegie Mellon University

- African Leadership University

- African Institute of Mathematical Sciences:
  www.aims.ac.rw

- Andela: www.andela.com

- Muraho Technology: www.muraho.tech

- CodeofAfrica: www.codeofafrica.com

YOUR PARTNER FOR DEVELOPMENT COOPERATION

A well-functioning economy is a prerequisite for the development of a country: economic growth creates jobs, improves people's incomes, and promotes innovation. That is why the United Nations 2030 Agenda provides for the active involvement of the private sector in the implementation of the Sustainable Development Goals (SDGs). This includes local companies of partner countries as well as German and European companies, because cooperation with international economic partners is often the key to success. The Global Business Network (GBN) Programme encourages local and German companies to get involved in sustainable economic development in selected countries in Africa and Asia. Via Business & Cooperation Desks the GBN-Coordinators provide information, advice and guidance for businesses on existing support, financing and cooperation instruments of German development cooperation. They also support new approaches and build sustainable networks between the private sector and development cooperation.

The Desks are integrated into local German development cooperation offices. In addition, the GBN-Coordinators work closely with the German Chamber of Commerce Abroad (AHK) regional offices and, where possible, cooperate with bilateral trade associations. The GBN is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

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