Digital Transformation Center Rwanda

QUARTERLY REPORT

OCTOBER - DECEMBER 2024

QUARTERLY
REPORT

1. INTRODUCTION

Welcome to the latest edition of our quarterly report, where we present a comprehensive overview of the Digital Transformation Center Rwanda's recent endeavors and achievements. This report showcases our initiatives focused on driving innovation, empowerment, and progress within Rwanda's digital landscape.

In this edition, we highlight impactful projects spanning various focus areas, designed to address critical challenges and foster positive change in our communities. From empowering women through digital literacy and capacity-building initiatives to harnessing Artificial Intelligence (AI) for climate action, our commitment to leveraging technology for social good and sustainable development is clear.

Inside, you'll find insights into our work across key areas, including ecosystem-building activities, public sector innovation, and efforts to foster digital inclusion. From the National Robotics Program to the Innovate Africa Challenge on AI for Climate Action, each initiative marks a step forward on our collective journey toward a digitally empowered and inclusive Rwanda.

We extend our gratitude to our partners, stakeholders, and collaborators, whose support and dedication have been crucial to our success. Together, we are committed to advancing Rwanda's digital transformation agenda and shaping a brighter, more inclusive future for all.

2. POLICY DEVELOPMENT & DIALOGUES

2.1. Smart City Hub Rwanda

2.1.1. Scoping exercise for establishing how mobility solutions can be optimized for food security.

This exercise is to provide a pilot project to identify how data can be used to improve logistics in Rwanda for improved food security outcomes. In partnership with the climate cluster, the targeted groups of this scoping exercise are commercial farmers in rural areas (such as Nyagatare – Eastern Province) to explore how supporting the adoption of 3-wheeler e-bikes would contribute towards increased agricultural produce and ensuring they connect to the market in a timely and cost-effective manner.

2.1.2. Co-designing urban futures

Partnering with UN-Habitat and GSMA, this exercise aims to identify the main challenges faced and identify general service provision, digital maturity and infrastructure, digital capacity and partnership readiness.
Areas covered include Kigali as well as Musanze, Rubavu, and Bugesera among others. These selected secondary cities will eventually be supported in enabling access to essential utility services through digital solutions and innovative partnerships through the GSMA Innovation Fund for Digital Urban Services.

https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/digitalutilities/innovation-fund/

2.1.3. Smart Cities Capacity building

The capacity building for smart cities involves developing skills, knowledge, infrastructure, and systems necessary to implement and sustain smart city initiatives. This process is essential for ensuring that city officials, employees, and stakeholders are well-equipped to manage and operate smart technologies effectively. This year, four representatives from satellite districts attended the Smart Cities Investment Summit in Nairobi where they had exchanges with other smart cities stakeholders from all over Africa to strengthen partnerships opportunities and steer the Smart City initiatives effort towards the achievement of the Smart Rwanda Masterplan.

3. SOLUTIONS & INNOVATION

3.1. Data Protection Chatbot

The development of the chatbot to facilitate information dissemination to data subjects, controllers, and processors on data protection policy and guidelines is in its final phase.

The solution has been presented internally at the Data Protection Office. At the same time, continual refinement of training data (intent examples and responses) and writing of a user manual on how to monitor usage analytics and future maintenance of the chatbot is ongoing.

3.2. Agriculture Chatbot for farmers

The project to develop an IVR chatbot to serve as an extension service for MINAGRI's call center providing advisory to farmers is running as planned. The platform architecture is under development, in addition to ongoing work to finetune speech models for conversational capabilities and using a RAG-based approach to retrieve information from MINAGRI's provided knowledge repository.

A first demo is expected to be running by 15th December.

3.3. Data and Artificial Intelligence for Crop-type Mapping and Crop Yield Prediction

The project's objective is to develop and pilot an artificial intelligence (AI)-based crop-type mapping tool to identify agriculturally used areas and classify different types of crops in Rwanda. Crop-type mapping is a critical input for crop yield prediction and the estimation of agricultural production. The tool will be used to support agricultural planning and policy such as the optimization of the subsidy program and capabilities for better response e.g. in the case of over- or underproduction.

In collaboration with the Rwanda Space Agency (RSA) and the Ministry of Agriculture (MINAGRI), GIZ has co-designed this project, conducted market research, and found a qualified and committed partner following the same objectives. A grant agreement with this partner, CIAT and Biodiversity Alliance, for the development of AI-based crop-type mapping solutions has been finalized. RSA staff were chosen for co-development and data sharing agreements are being prepared. Furthermore, talks between all partners and the World Resources Institute (WRI) are taking place as WRI plans to work on crop-type mapping and yield prediction in Rwanda to align on the points of interaction.

3.4. Innovate Africa Challenge on AI for Climate Action – Final pitch

The objectives of the pan-African "Innovate Africa Challenge on AI for Climate Action" are: firstly, to foster innovative uses of artificial intelligence (AI) to mitigate the impacts of climate change and/or to support climate adaptation efforts in the African continent, while strengthening the AI and start-up ecosystem in particular in Ghana, Rwanda, and Kenya; and secondly, to capacitate Smart Africa in running pan-African innovation challenges in emerging technologies. GIZ implements this challenge in partnership with Smart Africa and the global non-profit Climate Change AI.

In the past three months, the top 8 teams participated in the incubation phase to receive tailored AI and business support. Under expert guidance, they created detailed proposals of their businesses and solutions improving their chances of acquiring additional funds. Solutions range from crop disease identification, over aquaponic farms to improved weather forecasting.

The challenge's grand finale was held at the Digital Transformation Center Rwanda in October, where the winner was crowned. Congratulations to Strathmore Research and Consultancy Centre Ltd Team for winning the Innovate Africa Challenge!

Their groundbreaking solution enables smallholder farmers to access critical weather forecasts and tailored agro-advisories through AI-powered chatbots. This innovation represents a significant leap forward in sustainable agriculture and climate resilience. We are thrilled to embark on the journey of implementing these solutions and further driving innovation in AI-powered agriculture.

A special mention goes to NjordFrey for securing second place with their exceptional work and innovative ideas.

This milestone marks the beginning of transformative efforts to harness AI for climate action and foster sustainable development in Africa.

For more info: Innovate Africa Challenge

3.5. Drones

3.5.1. Site Visit to Ruhuha Sector (Bugesera District)

In collaboration with the Rwanda Biomedical Center (RBC) and the Rwanda Information Society Authority (RISA), the Drone Operation Center (DOC) hosted a site visit in Bugesera District's Ruhuha Sector to prepare for the upcoming drone-based mosquito larval source management project. This initiative utilizes Bacillus thuringiensis (Bti) as a larvicide to control malaria.

The team conducted a field assessment of the intervention areas, which include four marshlands and rice farmlands spanning approximately 93 hectares and nearby villages. These areas, situated across the sectors of Ruhuha, Mareba, Nyarugenge, and Ngeruka, are recognized as malaria transmission hotspots due to their ecological conditions.

During the visit, the team met with local authorities, including the Vice Mayor of Bugesera District and the Executive Secretary of Ruhuha Sector. Discussions focused on the project's objectives and anticipated impact. The leaders strongly supported the initiative, highlighting the success of previous interventions in malaria control, which not only exceeded expectations but also positively influenced agricultural practices in the region. Their commitment underscored the significance of this project in addressing public health challenges.

3.5.2. High -Resolution drone mapping for targeted Malaria Control in Gisagara District

Malaria has re-emerged as a significant public health challenge in Rwanda in 2024, reversing the notable progress achieved between 2018 and 2023. In response, the Ministry of Health is implementing a national response plan aimed at strengthening surveillance, analyzing data, and addressing factors contributing to the resurgence

GIZ, in partnership with a local startup CHARIS UAS was tasked with providing geospatial mapping and analytical support to identify and prioritize high-risk areas using drone technology. The objective of the activity is to generate actionable insights that guide decision-making, strengthen malaria control efforts, and support targeted interventions.

The project focused on 19 villages from three sectors (Mamba, Gishubi, and Gikonko) in Gisagara District, covering a total of 3,912.39 hectares. The collected and processed data informed Rwanda Biomedical Center (RBC) and the Ministry of Health (MoH) of potential malaria hotspots for malaria control mapping.

3.5.3. Licensed Drone Pilot training

The Digital Transformation Center Rwanda, in partnership with key stakeholders including Rwanda's Ministry of ICT and Innovation and the Drone Operation Center (DOC), has launched the Drone Pilot and Remote Training Program. This initiative aims to build local capacity in drone technology through skills development, safety training, and community engagement. Out of 343 applications received, 20 participants were selected to undergo specialized training in areas such as flight planning, navigation, and data collection. The program emphasizes regulatory compliance and safety protocols, ensuring that operators adhere to international best practices.

This program also seeks to drive innovation and entrepreneurship by fostering the development of new drone applications across sectors like agriculture, healthcare, and logistics. By equipping participants with both technical expertise and a broader understanding of drone applications, the initiative aims to create a network of skilled professionals who can support local projects and contribute to Rwanda's growing technological ecosystem.

3.5.4. German - Rwandan Conference and Seminar on Drone Technology 2024

A delegation from German Industry and Commerce for Eastern Africa (AHK Eastern Africa), in collaboration with SBS Systems and the Digital Transformation Centre Rwanda, hosted a series of events from November 20–21, 2024. These events focused on exploring the potential of drone technology to enhance industrial efficiency, improve regulatory frameworks, and drive economic development.

Participants had the opportunity to visit CHARIS UAS, a leading player in Rwanda's local drone industry, and Zipline in Muhanga, a global pioneer in medical drone deliveries. These site visits demonstrated the transformative impact of drone technology in both local and international contexts.

Interactive sessions were also held with key stakeholders, including the Rwanda Civil Aviation Authority (RCAA), Rwanda Development Board (RDB), Drone Operations Center (DOC), and the Ministry of ICT and Innovation (MINICT), represented by PS Yves Iradukunda. These discussions provided valuable insights into Rwanda's regulatory framework, highlighted emerging business opportunities, and reinforced the country's commitment to fostering innovation in the drone industry

4. DIGITAL LITERACY & CAPACITY-BUILDING

4.1. National Robotics program

The National Robotics Program is an endeavor to enhance the practical learning experience of students by integrating the concepts of robotics and coding into the national curriculum. The program is piloted in 26 schools across the country in the academic year 2024-2025.

After handing over 452 kits to schools in September, we initiated M&E activities such as ensuring smooth interaction between solution providers and the school under Marburg preventive measures. The REB team was able to independently visit schools to assess the usage of the kits. On December 2nd the GIZ team together with partners had a workshop on operational planning.

4.2. Apple Labs

This is a project to support the establishment of Apple Accredited Training Centers for Education (AATCE) in six institutions in Rwanda (AUCA, Ines, Kepler, UOK, RCA, AIMS).

On November 1, 2024, GIZ and MINICT hosted a kickoff session with the participating institutions, during which each institution received 10 iMacs procured by GIZ for use in their Apple labs. Additionally, each institution signed a Memorandum of Understanding (MOU) with MINICT to ensure effective implementation and adherence to key performance indicators throughout the process. To prepare for the program's rollout, trainers from each institution are participating in an Apple-led Training of Trainers program in December. The official launch of the first cohort at each institution is anticipated in early 2025.

4.3. Digital Marketing Training for women in business

In collaboration with RICTA, GIZ trained 85 women entrepreneurs in October in digital marketing. The women were trained in two week-long cohorts: 40 and 45 women respectively. The objectives of this training were to: help participants set up and optimize their online presence, enhance participants' ability to use AI for content creation and graphic design for marketing, and provide hands-on experience with popular digital tools, including social media platforms, Google Business Profile, and Content Designing using Canva.

4.4. Digital Inclusion Council

In collaboration with MINICT, we will support to set up the digital inclusion council (DIC), which will become a one stop center for Rwandans seeking to acquire digital skills.

We are currently collaborating with a contractor to develop the Digital Skills Academy landing page, which is expected to be completed by December 2024. Additionally, we are working with MINICT to map existing training programs across various categories, which will be featured on the Digital Skills Academy portal.

4.5. Capacity Building for developers in public sector

This training is designed to equip public sector employees with skills in data engineering and AI, with the goal of strengthening the application of artificial intelligence in public institutions through the development of sector-specific expertise and capacities.

Discussions are ongoing with 17 public institutions, their Chief Digital Officers (CDOs), and training participants to determine the projects to be undertaken during the four-month training period and finalize their scopes. The contractor is prepared to be engaged, and the first phase of training is expected to begin at the end of January once these discussions are concluded.

4.6. Cyberhub

We will be supporting the National Cyber Security Authority to set up the Cyberhub, a cyber security academy. The academy will have the necessary infrastructure to train cyber professionals that will meet Rwanda's cyber skills job requirements and help create a local cyber industry.

We will be supporting NCSA in the renovation of the cyber hub space at the former KIST. Work is expected to begin in the next week or two, as the contractor has already been selected. Additionally, a tender has been issued for the first round of Cyberhub training, which is scheduled to begin in early 2025.

5. Events & Ecosystem

5.1. Robotics Community of Practice

The Robotics Community of Practice brings together professionals, university students, enthusiasts, and anyone else interested in robotics. They exchange, share knowledge and skills, network, and form a community around robotics as a topic.

On the 28th of November, we organized an event in partnership with MINICT and Westerwelle Startup Haus Makerspace. The event featured a panel discussion and a hands-on workshop. The theme was "Robotics in Everyday Life: Current applications and Future Trends". This event was an opportunity for participants to have fun building/ assembling small robots.

5.2. Data Protection

Towards ecosystem awareness to promote compliance, international cooperation and regional alignment to stay ahead of trends and ensure consistent practices across borders, several events were held in this quarter both with local stakeholders and data protection authorities from other countries.

Rwanda hosted the 3rd EAC Data Protection Knowledge Exchange on October 16th, in collaboration with the East African Community and GIZ regional projects of EAC and AU on data governance. The event brough together 70 representatives from EAC ministries of ICT, regulatory authorities, and data protection authorities, focusing on designing a regional data governance framework that encourages trade, investment, while facilitating regional integration.

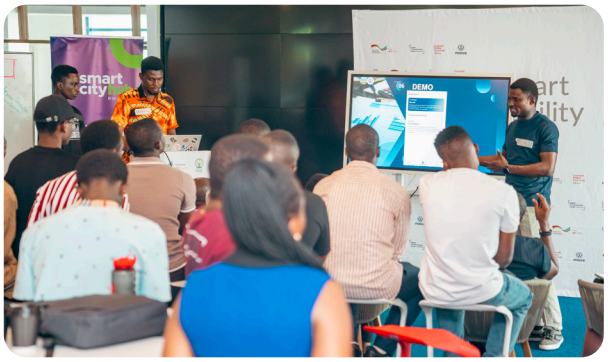
On 26th November, Netfella, in collaboration with the National Cybersecurity Authority and GIZ, organized a "Cybersecurity and Data Protection Awareness". The event provided practical insights to help organizations secure their business processes and comply with Rwanda's and other international data privacy regulations. It was attended by a diverse group of experts and participants from government Institutions (National Cyber Security Authority, Data Protection and Privacy Office - Rwanda, Rwanda Forensic Institute (RFI)), Academic Institutions (Coventry University - Africa Hub, Adventist University of Central Africa - AUCA), Civil Society (Internet Society Rwanda Chapter) and the Private Sector (NetFella, MTN Rwanda, Africa Quantitative Sciences, Digital Umuganda), all committed to fostering safer digital spaces and advancing data protection practices.

The Center for Law and Innovation by Certa Foundation hosted an exclusive event for data protection officers to connect and share their experiences. The DPOs Hangout Kigali included a fireside chat with Isobel Acquah, director of the Center for Law and Innovation, open discussions from DPOs and other compliance officers.

5.3. Smart Mobility Lab AI Hackathon

The objective of this activity was to develop an innovative solution that improves the daily lives of Kigali's citizens by making their access to and use of public transportation in the city easier, more reliable, and more efficient.

The Hackathon gathered 100 innovators within Kigali from academic institutions and innovation hubs. The innovations would inform the Smart Mobility efforts and improve Mobility as a Service platform for the city of Kigali.



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