



The Burundi Model of Open Internet Skills and Competences

The Open Internet as cornerstone of digitalisation



Funded by the European Union

Implemented by a consortium led by



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Abbreviations list

AFRINIC	African Network Information Centre	MSPLS	Ministry of Public Health
API	Application Programming Interface	MoYICT	Ministry of Youth and ICT
BBS	Burundi Backbone System	CNSI	National Commission for Information Society
BERNET	Burundi Educational Research Network	PND	National Development Plan
BDIXP	Burundi National Internet Exchange Point	NAS	Network Attached Storage
CAPI	Conversions APIs	PWD	People with disabilities
DECAT	Data Entry and Cleaning Tool	PNDIS II	Plan National de Développement de l'Informatique de Santé 2020-2024"
DFS	Digital financial services	PSDEF	Plan Sectoriel de Développement de l'Education et la Formation
DHIS2	District Health Information Software Version 2	REGIDESO	Régie de Distribution de l'Eau
EAIGF	East Africa regional Internet Governance Forum	RAC	Remote Access Control
EQUALS	The Global Partnership for Gender Equality in the Digital Age	RIA	Research ICT Africa
HMIS	Health management information system	STEM	Science, technology, engineering, mathematics
HIS	Hospital Information System	STI	Science, Technology, and Innovation
HDI	Human Development Index	ETS	Secondary Technical School
ISTEEBU	Institute of Statistics and Economic Studies	SETIC	Secretariat for Information and Communication Technologies
ICCPR	International Convention on Civil and Political Rights	SPSS	Statistical Package for the Social Sciences
IEC	International Electrotechnical Commission	SSPPS	Strategic Shift in Public Policy Support
ISO	International Organization for Standardization	BLB 2025	Stratégie Burundi Large Bande 2025
IETF	Internet Engineering Task Force	SC	Subcommittee
JTC	Joint technical committee	SDGs	UN Sustainable Development Goals
MEFTP	Ministry of Education, Technical, and Vocational Training	USF	Universal Service funds
MESRS	Ministry of Higher Education and Scientific Research	VPN	Virtual Private Networks
MINCONTIM	Ministry of Communication Information Technology and Media	VNR	Voluntary National Review



Executive Summary

Open Internet connectivity is recognised as a promotor of human centric development. Digital technologies and the Open Internet are two distinct concepts that, if blended into a consistent policy approach, create a digitisation process that maximises the opportunities for social and economic growth.

Key to the success of the Open Internet is its decentralised architecture built on open standards and protocols, underpinned by a multistakeholder Internet governance model that involves government and non-government actors in open consensus-driven Internet policy dialogues. At the application level closest to the Internet user, democratically developed principles, regulations, and policies can be put in place regionally or nationally to ensure fundamental rights and locally driven development.

The realisation of the Open Internet's potential for locally driven growth requires a comprehensive approach, separate but intrinsic to the investment in technology and connectivity and focused on the deployment of Open Internet digital infrastructure, the development of enabling policy and regulatory environments for Open Internet, investment in Open Internet skills and competences, the creation of an Open Internet economy and participation in Open Internet governance.

This Roadmap elaborates on developing Open Internet skills and competences and explores Burundi's experience.

Open Internet skills and competences in the broadest sense are **'a broad range of skills and competences needed to realise the potential of the Open Internet for economic and social growth and development.'**

The empowering Open Internet skills extend beyond technical skills. A multi-pronged approach is needed to effectively support the development of the Open Internet skills and competences as part of a broader educational policy that includes:

- Open Internet skills and competences integrated in existing educational curricula and institutions (technical skills and general STEM competences, digital and media literacy, skills in online safety and online citizenship, exercising individual human rights responsibly on the Internet).
- Open Internet skills and competences for the general population.
- Specialised Open Internet skills and competences that can improve presence and influence on the internet.

Burundi recognizes the importance of inclusive Open Internet skills with the embrace of new technologies and partnerships at the above-mentioned segments of the open internet skills ecosystem. The country has been strategic in implementing some initiatives such as special ICT teacher training, and integrating ICT into its standard educational curricula, while encouraging citizens to use e-government services. Despite challenges like inadequate computers and poor electricity supply, Burundians are persistent in acquiring requisite open internet skills through formal learning and digital hubs. Skills training in the country range from foundational, intermediate to advanced. For example, training of trainers' projects such as "Bumenyi"¹ aim to build social media competencies of 10,000 Burundians. The government is collaborating with EFT Bafashebigi Coalition² on Edutech initiatives following a 2022 study on the gaps in digital learning in Burundi. Other government partnerships with development agencies such as Enabel³ have funded several technical schools across 8 provinces of Burundi with a commitment to build 18 training centres and digital libraries offering resources in the Kirundi language.⁴

Outside the formal education system, digital hubs and training centres play a crucial role in supplementing Open Internet competencies with demand for training in software program-

ming, digital marketing, and mentorship. These hubs also provide on-demand specialised internet skills, training in data analysis, data visualization and other emerging technologies and approaches. There is also growing interest in digital training for women, and this offers promise such as the blockchain training partnership between Women in Tech Global Movement and Kit-hub⁵ and the Digital Ladies programme by Bujahub⁶.

Indeed, Burundi sets an inspiring example by empowering women with Open Internet competencies and has attracted strong commitments to support digital gender training from international development agencies such as UN Women, ITU, GSMA and the EQUALS Global partnership. These collaborations are instrumental for scaling up basic and intermediate Open Internet competencies that enhance women's livelihoods, help bridging the digital gender divide and advance gender equality⁷. Burundi also demonstrates how gaining Open Internet skills and social media training enable women to access comprehensive sexuality education (CSE)⁸. Basic and intermediate Open Internet skills have not only enhanced women's participation and engagement through platforms like WhatsApp but have also facilitated the distribution of crucial sexual reproductive health products such as contraceptives and pregnancy test kits.

1 "Bumenyi" is a Kirundi word meaning "Knowledge". This project Launched in 2019, aims to train 10.000 youths and local civil servants all on responsible social media tools for development.

2 EFT Bafashebigi coalition is made up of civil societies interested in ICT education in Burundi. In 2021 it carried a study entitled, "Digital Solutions at the Service of Basic Education in Burundi" which identified and initiated digital education in a few pilot schools to raise awareness among stakeholders in the education sector on the importance of EduTech so that it can be scaled up nationally. It was funded by the European Union and the Federal Ministry for Economic Cooperation and Development as part of the action jointly implemented by Enabel and GIZ, under the "Team Europe" approach.

3 Enabel, the Belgian Development Agency. <https://www.enabel.be>

4 EFT Bafashebigi Report 2022 "Digital Solutions at the Service of Basic Education in Burundi."

5 Women in Tech Movement and Binance charity, partnered local Kit-hub to train 200 women in Burundi on blockchain technology. See: Nkurunziza T. 2023. "Women in Tech: A program to close a gender gap in technology in Burundi." Shikiriza. 2 March.

6 "Digital ladies" is a project which aims to promote the place of women in the digital sector by offering them trainings in digital marketing <https://m.facebook.com/bujahub/posts/175991803834937/>

7 Stakeholder interviews and 14/15th December

8 Countdown 2030 Europe (C2030E) is a consortium of European NGOs advocating to ensure universal access to sexual and reproductive health and rights (SRHR) and family planning (FP) in developing countries through holding European governments to account on their international policy and financial commitments on SRHR. See https://countdown2030europe.org/storage/app/media/uploaded-files/FACTSHEETS_%20IPPF_technology%20innovation_02-Acrobat4.pdf

In the area of E-commerce, local entrepreneurs have used Open Internet skills, not only to develop and enhance their business, but to also gain exposure to new clients and markets. For instance, in partnership with the Burundian Government, nine women entrepreneurs from the coffee and tea industries who participated in the 2022 Organic & Natural Products Expo in Dubai were able to engage with potential buyers and partners ahead of the event through the internet and via a dedicated online platform, fostering potential international business connections. During the expo, participants such as Coffee grower Kaliko and tea producer Lovimax Tea Factory⁹ used social media and digital tools such as Instagram to complement their physical presence and expand their online audience.¹⁰

Forward-looking policy and legislation have been critical in setting Burundi's vision for digital development. The "Plan National de Développement de l'Informatique de Santé 2020-2024" (PNDIS II), the 2nd National e-Health Development Plan, stands out as a sector-specific strategy effectively using digital technology within healthcare. This plan introduces a comprehensive data architecture within the healthcare domain, including a dedicated data centre, integrated information systems and technical support units under the Ministry of Health's purview.¹¹

Specialised Open Internet competences models that showcase successful e-government services are highlighted in initiatives like the OpenClinic programme by the Ministry of Health in partnership with the Belgian Development Agency, Enabel, as well as in the operations of Burundi's Institute of Statistics and Economic Studies (ISTEEBU)¹². The OpenClinic project

empowers healthcare professionals to use digital tools and skills that improve healthcare delivery. ISTEEBU's efforts to develop Open Internet skills to support data management, collection and statistical analysis improved for example the national surveys on social, demographic, and economic data. The use of smart tables and a Conversions APIs (CAPI) integration project improved the accuracy of data collected while reducing supervision costs¹³. ISTEEBU's efficiency underscores the importance of strengthening data-related Open Internet competencies to support evidence-based decision-making.

Burundi's Open Internet competencies model serves as an inspiring example of how the strategic combination of local legislation, collaboration, investment, and resources, can increase local skills and knowledge sharing for the development of the open internet economy. The country's success in this area stems from a collaborative, multistakeholder approach involving the government, donors, private sector, start-ups, and media in drafting enabling policy, finding requisite partners, and implementing targeted local initiatives. To replicate this model, countries should prioritise holistic mapping of their Open Internet competences and gaps, provide an open enabling environment backed by relevant legislation and governance, while adapting initiatives to their specific local needs. Finally, countries need to seek out strategic partnerships that ultimately work towards a digitally empowered future for their citizens through the open internet.

9 <https://kalicocoffee.com/> and <https://lovimax.com/>

10 Burundian Stakeholder Interviews, 2023, 14-16 December

11 World Bank Group. 2020. "Burundi Digital Economy Assessment".

12 ISTEEBU Institut de Statistique et d'Etudes Economique du Burundi <https://isteebu.bi>

13 Burundian stakeholder Interviews 2023, 11-19th September. The Conversions APIs (CAPI) integration project funded by the UNDP and European Commission enables ISTEEBU to share data directly from servers or work offline, without reliance on web browsers.

1.

The Open Internet as Cornerstone of Digitalisation

While digitisation is an unstoppable process, the Open Internet which maximises the opportunities provided by digital development, is not and should not be taken for granted.¹⁴

Digital technologies and the **Open Internet** are two distinct concepts that are often mixed up and confused. Ensuring that the two go intrinsically together in the digitisation processes of countries and regions is an important policy and investment choice that has an impact on all key drivers for social and economic growth. Communities that embrace Open Internet digitisation are better placed to reap the full benefits of digital development.

Key to the success of the Open Internet is its **decentralised architecture** built on open standards and protocols¹⁵ and underpinned

by **multistakeholder Internet governance**. The multistakeholder model involves both government and non-governmental actors in dialogue at global, regional, and national level, and goes beyond the management of the technical and logical infrastructure.¹⁶ At the application level **democratically developed principles, regulations, and policies** ensure respect for fundamental rights and empower a locally driven development.¹⁷

The realisation of the Open Internet requires a comprehensive approach from policy makers and stakeholders that goes beyond investing in technology and connectivity. To progress, actions and investments must focus on five areas: the deployment of Open Internet digital infrastructure¹⁸; the development of enabling policy and regulatory environments for Open Internet¹⁹;

14 The report 'The Open Internet as cornerstone for digitalisation' demonstrates that the Internet's unpredicted spectacular growth and its ability to promote human centric development is underpinned by the current Open Internet model. Digital connectivity technologies as such, while essential, are largely agnostic of what type of Internet they support. If the Internet further develops into more closed networks, this risks to lead to a cascade of negative consequences tempering the Internet's growth and missing opportunities to drive innovation, investment, socio-political, economic, and cultural development around the world.

Degezelle W., et al. 2022. "The Open Internet as cornerstone for digitalisation. The Global Gateway Partnership Opportunities between the European Union and Africa." Stantec. October 2022.

15 The internet is constructed as one global network of individual networks that exchange data and information, without a centralised authority. Transfer of data between networks, and as such the exchange of information over the internet is possible because of the use of commonly agreed standards and protocols. Ibid p. 20-30.

16 The Open Internet's multistakeholder governance model, its venues, processes, and actors are described in the project's report. Ibid p. 31-34.

17 Examples of Internet-related policy, regulation, and e-government initiatives in Africa and Europa are compiled in the report. Ibid p. 57-65.

18 Ibid p. 38-57.

19 Ibid p. 57-68.

investment in Open Internet skills and competences²⁰; support for the creation of an Open Internet economy²¹; and participation in Open Internet governance²². These five pillars form clusters of investment priorities and partnership opportunities to be refined and

scoped in response to national, regional, and subnational contexts, local demand, and existing initiatives. A dialogue with local stakeholders on priorities will contribute to a more effective cooperation to create growth and socio-economic development driven by the Open Internet.

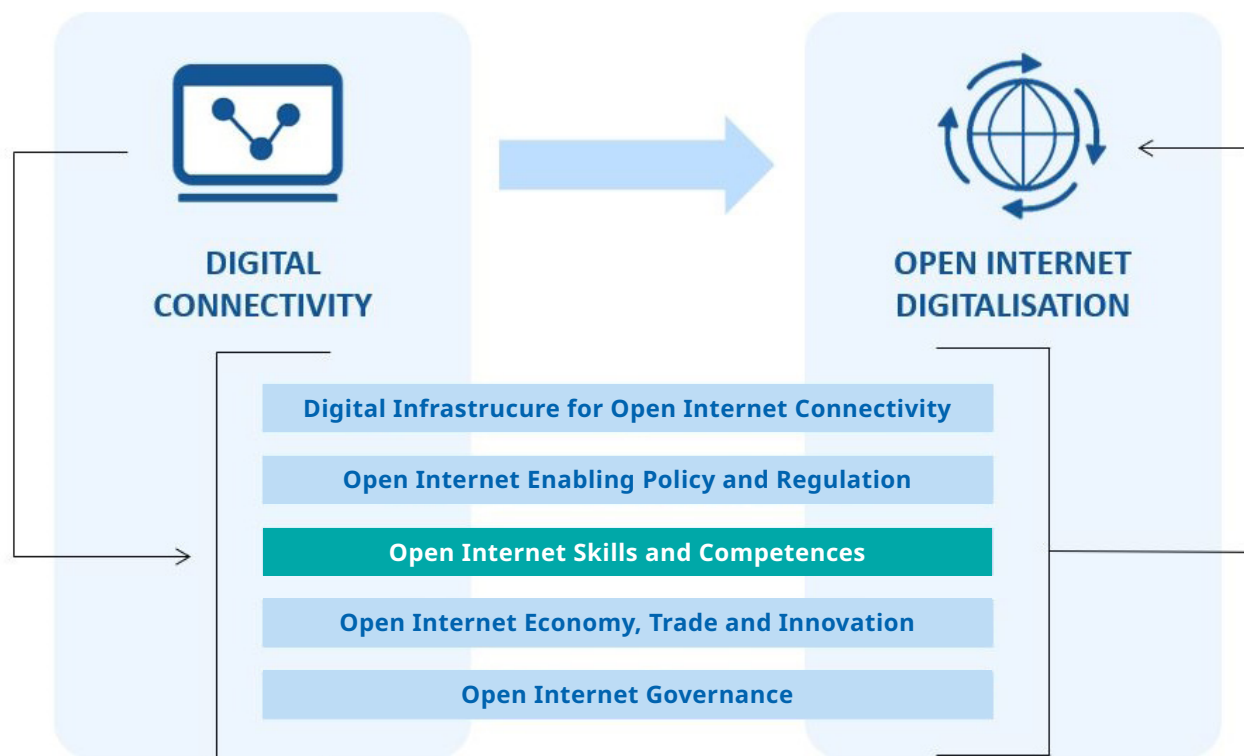


Figure 1. From Digital Connectivity to Open Internet Digitalisation

20 Ibid p. 68-74.

21 Ibid p. 74-82.

22 Ibid p. 82-87.

2.

Open Internet Skills and Competences

2.1 SKILLS AND COMPETENCES ENABLING THE OPEN INTERNET

Open Internet skills and competences in the broadest sense are **‘a broad range of skills and competences needed to realise the potential of the Open Internet for economic and social growth and development.’** Research²³ has shown that focusing only on infrastructure development and coverage without considering factors such as digital skills, education and affordability does not ensure a sustainable and welfare-enhancing ICT sector. Open Internet skills and competences allow to move from digital connectivity to Open Internet digitalisation. As is the case with infrastructure where basic connectivity is required but not sufficient to realise the Open Internet, a variety of basic skills and

education are essential as foundation to build the Open Internet skills and competences. Entry level skills such as digital literacy and the ability to recognise miss-and disinformation and understanding how to be safe online are equally important as high-end and specialised digital skills. Strategies to build Open Internet skills and competences must encompass so-called ‘supply-side’ skills required e.g., for the rollout and maintenance of infrastructure and equipment and ‘demand-side’ skills required e.g., for content creation, development and use of applications and services and e-governance, digital and media literacy and digital safety skills.²⁴

2.2 BUILDING BLOCKS OF OPEN INTERNET SKILLS AND COMPETENCES

Technical skills are important for digital development, but Open Internet skills extend beyond them. A multi-pronged approach is needed to effectively support the development of the Open Internet skills and competences as part of a broader educational policy that includes²⁵.

a. Open Internet skills and competences integrated in existing educational curricula and institutions.
Technical skills and general STEM (science, technology, engineering, mathematics) competences are important

23 2017 Research ICT Africa (RIA) After Access Survey conducted in 10 African countries, mentioned in Gillwald A., Onkokame M. 2019. “After Access 2018: A Demand-Side View of Mobile Internet From 10 African Countries.” Research ICT Africa. Policy Paper Series No. 5.

24 Degezelle W., et al. 2022. p. 68

25 Degezelle W., et al. 2022. p. 68-74.

for digital development. They should be incorporated into the standard educational curricula from primary school to tertiary levels. Learning must also include **digital and media literacy**, as well as skills in **online safety** and **online citizenship**, the understanding of human rights and how to exercise **individual human rights** responsibly on the Internet.

b. Open Internet skills and competences for the general population.

Those who **have completed their education** or who never had access to one should be targeted with **digital and media literacy** programmes, including on how to use e-government services. Such programmes should also include **Open Internet “social skills”**, particularly for using social media, understanding privacy and security risks and how social media can be harmful to specific individuals or groups of people. The skills the digital economy needs range from the ability to use a mobile phone, the internet, and social media to skills in data analytics, app development and network management. These **general skills are needed by workers in all sectors of the economy**, not just those in the digital sphere. Digitalisation means that all jobs in all sectors will need such skills.

c. Specialised Open Internet skills and competences that can improve presence and influence on the internet.

Providing a basic, yet solid insight into the **Open Internet’s technical architecture and basic principles** and exposing the more technically inclined to Open Internet standards and how they are developed can encourage future engineers to play a significant role in the evolution of the internet. **Specialised competences in research, developing internet protocols and emerging fields** such as digital trust,

machine learning, renewable energy, quantum computing can improve the country or region’s influence on the future internet. Competences to extend infrastructure and better cope with local challenges through tech innovations and redesigning business models can strengthen the Open Internet based on local expertise. **The Open Internet** economy has the potential to drive internet growth in the country and significantly contribute to local growth and development. Specific skill development programmes supporting startups and e-entrepreneurs can include for example project management, leadership, networking, and digital marketing. Participating in **Open Internet governance dialogues** require understanding of and skills to navigate the multi-stakeholder fora and processes.

3.

Burundi's Model of Open Internet Skills development

3.1 BURUNDI'S DIGITAL CONNECTIVITY AND OPEN INTERNET CONTEXT

Population	Total 12.9 M of which 14% Urban (2022)
Internet users (% population)	5.8 % (2021)
Mobile cellular subscriptions	58 (per 100 people) (2022)
Fixed broadband subscriptions	0.03 (per 100 people) (2022)
Mobile broadband subscriptions	1.12 M (2022)
Households with internet at home	17,9 % (2022)
Literacy rate (% ages 15 and above)	76 % (2022)
Network coverage - at least 3G	50.6 % population

Table 1: Burundi's Digital Connectivity and Open Internet context²⁶

The Republic of Burundi is in the African Great Lakes Region and home to an estimated population of 12.9 million people. Burundi is one of the most densely populated countries in the world and primarily dependent on agriculture. It is marked by a burgeoning rural populace (2022 est. 86% rural population) and a young demographic (est. two thirds under 25). The country is ranked 187th out of 191 countries in the Human Development Index (HDI) report²⁷ and is progressively advancing in its digital develop-

ment journey and in fulfilling its commitments to the UN Sustainable Development Goals (SDGs) and its 2030 agenda²⁸.

Digital Connectivity and Open Internet Infrastructure

Burundi is a landlocked country covering an area of 27,834 square kilometres and shares borders with Rwanda to the north, Tanzania to the east, and the Democratic Republic of Congo to the west.

26 Source: The World Bank Data, Burundi, <https://data.worldbank.org/country/burundi> (population data); ITU DataHub, Burundi, <https://datahub.itu.int/data/?e=BDI> (connectivity and digital development data).

27 The HDI is the index used by the United Nations to measure the progress of a country. Burundi was 0.426 points in 2021, See <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI>.

28 Current status of Burundi's implementation of the 2030 Agenda are detailed in the report "Accelerated Action and Transformative Pathways: Achieving the Decade of Action and Implementation for Sustainable Development,

Its southwest border is formed by Lake Tanganyika. Due to this geographic location Burundi depends for international data transfers on terrestrial or satellite connectivity²⁹ and connects via Rwanda, Uganda, and Tanzania to the submarine cable landings in Tanzania and Kenya.³⁰

Burundi's landscape comprises hills and densely populated regions across its 18 provinces, with its most populous cities being the capital Gitega and Bujumbura. Establishing fixed internet infrastructure across this terrain is expensive. Mobile internet, supported by fibre optic infrastructure is the primary form of connectivity. Satellite technology is also used to connect remote and hard to reach regions in Burundi.³¹

The Burundi Backbone System (BBS)³² serves as the principal high-capacity network that interconnects various communication systems and facilitates the transmission of data across the country. BBS is currently connected to 14 universities (public and private) via the Burundi Educational Research Network (BERNET) and aims at boosting e-learning, digital and vocational competences. BERNET also has 10 aggregation sites. In 2013 the government initiated the COMGOV project, placed under the Government's Executive Secretariat for Information and Communication Technologies (SETIC), to provide internet capacity of 100Mbps to public institutions and boost E-government services. As of 2022 it had connected 66 public institutions across Burundi.³³

The Burundi National Internet Exchange Point (BDIXP) was established in 2014 and started operations in 2019, contributing to a reduction of the cost of internet connectivity in Burundi, by keeping national internet traffic local. It operates under an Open Access model and is overseen by a consortium consisting of eight ISP operators and telecom service providers.^{34, 35} Although the adoption of IPv6 (crucial for expanding internet capacity to serve more users), is presently at a level significantly below the African average of 4%, the country is actively pursuing opportunities to enhance and boost its utilization.³⁶ As of 2020, SETIC, the Government agency overseeing government websites had successfully migrated over half of existing government sites to country-specific domain names under the .bi ccTLD or a dedicated .gov.bi subdomain, signalling a notable shift towards using .bi as standard domain for governmental online platforms.³⁷

Open Internet enabling policy and regulatory environment.

The Burundi Constitution safeguards freedom of expression (Article 31) and the right to privacy (Article 43) encompassing 'privacy in one's correspondence and communications.'³⁸ It also operates within the confines of international human rights obligations which it has ratified including the international convention on civil and political rights (ICCPR). The country has signed the principles of Freedom of Expression and access to information including principles 37 (e) to 'facilitate digital literacy skills for inclusive

29 Different providers offer satellite internet solutions in Burundi and talks are underway with Starlink to deploy low orbit satellite broadband services in 2024.

Kassouwi I. 2023. "SpaceX Initiates Talks with Burundi to Deploy Starlink Services in the Country." Ecofin Agency. 23 September.

30 <https://www.submarinecablemap.com>

31 Burundian stakeholder Interviews 2023, 11-19th September.

32 ITU Burundi Country profile. 2018 https://www.itu.int/en/ITU-D/LDCs/Documents/2017/Country%20Profiles/Country%20Profile_Burundi.pdf

33 <https://setic.gov.bi/le-comgov/>

34 www.bdixp.bi

35 Journal Burundi Eco. 2019. "GABIX-BDIXP : Pour un échange de connexion internet. 17 May.

36 According to Internet Society Pulse report Burundi has 393.2K IPv6 assigned numbers lagging the Africa Average of 16.2million (2023) while. <https://pulse.internetsociety.org/reports/bi>

37 World Bank Group. 2020. p. 63.

38 Constitution Burundi 2018.

and autonomous use'.³⁹ Following the resolution of the 2015 political crisis, Burundi has shifted its focus towards nurturing a digital economy investing more in internet infrastructure. The present government has pledged to preserve the openness of the internet, aiming to prevent incidents like the 2020 internet shutdown⁴⁰ during national elections.⁴¹

In 2018, the government adopted an ambitious 2018-2027 National Development Plan (PND). This comprehensive plan reflects the government's vision to fundamentally transform the Burundian economy, fostering robust, sustainable, adaptable, and inclusive growth, while generating employment opportunities for its citizens and enhancing overall social well-being.⁴²

Launched in 2015, the National Broadband Strategy, Stratégie Burundi Large Bande 2025 (BLB 2025), aims to raise internet penetration by 30% by 2025. The strategy guides broadband roll-out and speeds needed for e-government services and governs the work of the telecommunication regulator ARCT.⁴³ The Universal Service Fund for Burundi USF was established in 2017 with the goal to provide basic connectivity services for the underserved and supports training in internet competences.⁴⁴

Other documents such as the Burundi 2025 National Vision Prospective Study prioritise advancing the country's information and communication network infrastructure, along

with terminals and digital skills, for the upcoming decade.⁴⁵ Despite these goals, the absence of vital regulations on cybersecurity, data protection, digital identity, access to information and interoperability is a challenge to designing and implementing a comprehensive national strategy for the digital economy.⁴⁶ The need to adapt ICT regulatory frameworks to improve human resource capacity and universal access to ICT is highlighted in The National Development Plan (PND) 2018-2027, which establishes a framework to promote Open Internet and technology neutrality.⁴⁷

Creation of an Open Internet economy

Burundi's dedication to cultivating a digital economy is also captured in the National Development Plan (PND) 2018-2027. The country is progressively building on the foundational principles of the Open Internet economy notably, transparency, creativity, equitable competition, and inclusivity. However, its growth faces challenges such as the scarcity of specialised and advanced ICT skills at the local level, creating obstacles for innovation. Additionally, the problem of insufficient and expensive electricity exacerbates the difficulties they already face in the growth and scalability of technological advancements. Despite these hurdles, the youthful population is remarkably ambitious and eager to learn. Their enthusiasm to create start-ups and engage in the gig economy is a promising drive towards embracing digital opportunities.⁴⁸

39 ACHPR. 2019. "Declaration of Principles on Freedom of Expression and Access to Information in Africa". African Commission on Human and People's Rights. November 2019.

40 Anthonio F., Teye B. 2020. "KeepItOn: Burundi Silences the Majority on Election Day." AccesNow. 20 May 2020 updated 23 March 2023.

41 Burundi stakeholder interviews 2023. 11-19th September.

42 Burundi National Development Plan 2018-2027 : Republique du Burundi. 2018. "Plan National De Developpement du Burundi. PND Burundi 2018-2027."

43 Kalemera A., Kapiyo V., Kimumwe P., et al. "State of Internet Freedom in Burundi 2019. Mapping Trends in Government Internet Controls, 1999-2019." CIPESA. <https://cipesa.org/wp-content/files/State-of-Internet-Freedom-in-Burundi-2019.pdf>

44 The FSU is entirely funded nationally through a 1 percent tax on the turnover of telecom operators, and government grants through the Ministry of ICT

45 Ministry of Planning and Communal Development, UNDP Burundi. 2021. "Vision Burundi 2025." p. 60.

46 World Bank Group. 2022. "Creating Markets in Burundi. Leveraging Private Investment for Inclusive Growth."

47 Ibid

48 Interviews with stakeholders 2023. From Kit-hub, Buja hub and Burundi Youth Centre from September 11-19th

Commitment to Open Internet governance

Since 2010, Burundi's civil society community has been contributing to regional and global multistakeholder dialogues and has participated in regional internet governance processes particularly in the East Africa regional Internet Governance Forum (EAIGF). Physical participation is however often limited and more on an individual level.⁴⁹ Since 2017 the country has been more involved with the Ministry of National Education and Scientific Research organising a village booth at the 2022 IGF in Addis Ababa and giving a presentation on setting up internet governance in schools.⁵⁰ There is a need to raise awareness and build the capacity of Burundians in Open Internet governance. This will ensure that discussions held since 2009 on hosting a national and youth Internet Governance Forum materialise.⁵¹ Participation in Internet Engineering Task Force (IETF) meetings by the Burundi technical community is also more on an individual basis. The country holds an observer status in the technical committee (JTC1) of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).⁵² The JTC1 works on standards related to ICT such as cloud computing, cybersecurity and privacy protection, internet of things and digital twins, all requiring advanced Open Internet competences. With increased

awareness and financial support, more Burundians could acquire the needed knowledge to make significant contributions to global internet governance decision making.⁵³

Open Internet skills and competences

Digital literacy in Burundi faces several obstacles. For example, a European Union and GIZ funded study from 2022 carried out by a coalition of education institutions (Coalition EPT BAFASHEBIGE⁵⁴) shows a significant shortage of computers and terminals in primary schools, making it difficult to teach foundational competences.⁵⁵ This lack of learning and teaching aids reduces ICT tuition to theory only in many schools. In its report, the EPT BAFASHEBIGE coalition also revealed that primary school teachers lacked the requisite ICT training to deliver digital learning. Building the capabilities of ICT and STEM (science, technology, engineering, and mathematics) will require investment in digital resources to deliver crucial competences for the job market. While foundational level digital skills are important, various specialised Open Internet professional competencies are also needed to increase Burundi's competitiveness particularly in agribusiness.⁵⁶ Stakeholders also highlight the need to establish an Open Internet skills gap database and a harmonised approach to advanced and specialised learning⁵⁷.

49 The National IGF representative, Jean Paul Nkurunziza has been coordinating Burundi's IGF participation in the East Africa IGF and at global level (mainly virtual) since 2010. <https://www.intgovforum.org/en/content/nkurunziza-jean-paul-mr-consultant-burundi>

50 IGF 2022 – Village booth of the Ministry of National Education and Scientific research <https://www.intgovforum.org/en/content/igf-2022-village-booth-51-ministry-of-national-education-and-scientific-research>

51 Capacity Development, How the Internet Governance Forum empowered people from Developing Countries -2009 https://www.diplomacy.edu/wp-content/uploads/2021/06/CD_Jean_Paul_Nkurunziza.pdf

52 According to DiploFoundation, Twenty-one African countries are engaged in at least one of the twenty-three JTC1 subcommittees (SCs), either as participating or observing members (Figure 29). In addition, Zimbabwe, Gabon, and Burundi participate as observers in the overall JTC1. Teleanu, S., Kurbalija, J., et al. 2022. "Stronger digital voices from Africa: Building African digital foreign policy and diplomacy." DiploFoundation. p.71-72.

53 Burundi stakeholder interviews 2023. 11-19th September

54 'The EPT: Education Pour Tous (Education for all) BAFASHEBIGE coalition is a network of several civil society organizations in education in Burundi. 'BAFASHEBIGE' is a name in the national Kirundi language, which means "help children with access to school'. This 2022 Digital Solutions for Basic Education in Burundi Study aimed to establish a qualitative and quantitative database on the use of digital technology in the school environment is this project receives funding from the European Union and the Federal Ministry for Economic Cooperation and Development. It was carried out collaboratively by Enabel and GIZ under the "Team Europe" initiative.

55 For example, only 241 computers were recorded across 8 sampled provinces with Gitenga, Miyangi and Bujumbura provinces having the greater proportion of terminals to aid digital learning.

56 IFC, World Bank. 2022. "New Report Finds Burundi Could Create More Jobs and Grow its Economy Through Increased Private Sector Investment." 2 November.

57 Ibid.

3.2 THE BURUNDI MODEL OF OPEN INTERNET SKILLS AND COMPETENCES DEVELOPMENT

3.2.1 Introduction – stakeholders & initiatives

Despite limited resources, the people of Burundi have a strong desire to acquire digital skills. There is a lot of self-tutoring, but people would be helped if knowledge and capacity building is better structured and harmonised, and basic skills are complemented with empowering Open Internet skills.⁵⁸ The relatively low levels of formal education make strengthening Open Internet skills and competences challenging, particularly those involving high-end technical and STEM skills. On the other hand, the flexibility of the Open Internet presents new opportunities for human capital development through customised applications and services designed to meet people's specific needs.⁵⁹

To bridge the gap between the formal education and the practical training of Open Internet skills, a number of private sector and civil society organisations have stepped up to offer training and upskilling for the job market. For example, private non-profit institutions such as the Burundi Innovation hub (Bihub), Bujahub, Kit-hub and the Burundi Youth Training centres offer upskilling and training from basic internet services at foundation level to coding and software development. They organise hackathons and support the creation of web-based applications. Bujahub and Kit-hub offer workspace, mentorship, and networking opportunities as well as training for entrepreneurs on how to leverage data analytics to enhance their products and services. These hubs also organise programmes to enhance accessi-

bility and inclusion aimed at women, minorities, or people with disabilities. For example, Kit-hub has special programmes for the deaf⁶⁰ and is planning to establish *CoderDojos* to support refugee children and those from underserved areas.⁶¹

In 2012, the Government adopted a sectoral plan for education and training (Plan Sectoriel de Développement de l'Éducation et la Formation –PSDEF) covering 2012-2020, which aimed at achieving universal primary education for most of the youth.⁶² While education in Burundi has made substantial progress, there remains a need to review ICT education policies to better align them with emerging industry needs and assure that they incorporate the empowering Open Internet competencies.

The Ministry of Youth and ICT (MoYICT) has a pivotal role as the leading policymaker in ICT and digital skills development in Burundi. MoYICT collaborates with the Ministry of Education to enhance proficiency in Open Internet skill competencies nationwide. The Ministry of Education is divided into two entities: the Ministry of Education, Technical, and Vocational Training (referred to as MEFTP) and the Ministry of Higher Education and Scientific Research (abbreviated as MESRS). The MEFT oversees basic education which is 9 years, while secondary and tertiary are 3 and 4 years respectively.⁶³ Open Internet competencies are introduced in the education curricula, but progress has been slow due to constraints schools face such as access to learning resources, computers, software, and availability of ICT teachers.⁶⁴

58 Burundi Stakeholder interviews 2023. from 11-18th September

59 Degezelle W., et al. 2022. p70.

60 Interviews with stakeholders 2023, From Kit-hub, Bujahub and Burundi Youth Centre from September 11-19th

61 Proffitt E. 2023. "Welcome, new partners: Growing the global impact of Code Club and CoderDojo." Raspberry Pi foundation. 24 October.

62 World Bank. 2018. p. 33-34.

63 World Bank. 2018. "Burundi: Addressing the Challenges and Opportunities in Basic Education. Public Expenditure Review."


64 Burundi stakeholder interviews 2023. 11-19th September /20th- 23rd November

Burundi’s National Commission for Science, Technology, and Innovation (STI) is tasked to coordinate, regulate, and promote the STI sector. It also collaborates with the MoYICT to support development of the digital economy. The National Commission’s policy and strategy are aligned with that of the East African STI Policy and Strategy. This signals the government’s commitment to expand capacity in data collection and analysis within the STI domain.⁶⁵ In acknowledgement of the significance of e-services coordination between the various ministries and agencies, the Government has established specialised agencies like SETIC to coordinate and oversee

ICT projects and programmes. The government intends to conduct a comprehensive review of institutional structures and mandates to avoid overlap between SETIC, the National Commission for Information Society (CNSI) and the Directorate General of ICT within the MoYPICT and streamline frameworks promoting a more integrated and unified approach toward the nation’s digital agenda.⁶⁶

In the next section, the report takes a closer look at examples of how Burundi is approaching the key building blocks of Open Internet skills and competences.

SUMMARY TABLE: MODEL OF OPEN INTERNET SKILLS & COMPETENCES



	Skills	Examples
 <p>Skills & Competences Integrated in Educational Curricula.</p>	<p>Technical skills and general STEM (science, technology, engineering, mathematics) competences.</p> <p>Digital and media literacy.</p> <p>Online safety and online citizenship.</p> <p>Understanding of human rights and how to exercise individual rights responsibly online.</p>	<p>‘EFT Bafashebige project’ supports technical schools across 8 provinces on STEM including train the trainer programs.</p> <p>Tertiary education diplomas on computing and Open Internet skills including collaborations on long distance learning, such as the partnership between University of Bujumbura (ULB)’s digital campus and the University of Laval in Canada (ULC)⁶⁷.</p> <p>BERNET project interconnects and provides infrastructure for schools and over 14 universities to facilitate e-learning services.</p> <p>Enabling Policies: 2010-2025 National ICT Development Plan and 2020 Education policy and school reforms makes provision for ICT skills.</p> <p>National Development Plan (PND) 2018-2027, establishes a framework to promote Open Internet</p> <p>2018-2025 Burundi Broadband Strategy enables FastTrack broadband infrastructure access to schools and colleges.</p>

65 Republic of Burundi. 2023. “CSTD 2023-2024 priority theme on “Data for Development. Statement submitted by Burundi.”

66 Burundi stakeholder interviews 2023. 11-19th September /20th- 23rd November

67 EPT BAFASHEBIGE coalition ,2022, «State of affairs regarding the use of digital technology in the school environment “Report

SUMMARY TABLE: MODEL OF OPEN INTERNET SKILLS & COMPETENCES

SUMMARY TABLE: MODEL OF OPEN INTERNET SKILLS & COMPETENCES		
	Skills	Examples
 <p>Skills & Competences for the General Population</p>	<p>Digital and media literacy for those who already completed or never had access to formal education.</p> <p>Open Internet “social skills” including understanding social media use, online privacy, and risks.</p> <p>Skills for workers to use the Open Internet in all sectors of the economy, e.g., practical skills to use the internet and social media, to develop apps, for data analytics, customer service, programming, and internet network management.</p>	<p>Upskilling and training from basic internet skills to coding and software development by Burundi Innovation hub (Bihub), Bujahub, Kit-hub, and the Burundi Youth Training centres.</p> <p>Initiatives bridging the gender digital divide such as Miss Tech Burundi, eSkills 4 Girls, EQUALS Tech4Girls digital skills workshops in Muzinda and Bujumbura.</p> <p>EQUALS “Her Digital Skills” workshops focusing on website development, establishing an online presence, online safety, and social media marketing.</p> <p>Dedicated programmes to enhance digital inclusion for minorities and people with disabilities, e.g., Kit-hub’s special programmes for the deaf and planned CoderDojos to support refugee children and those from underserved areas.</p> <p>“Bumenyi” initiative empowering over 10,000 youths and local government employees to use social media tools for development.</p> <p>Trainer-of-trainer sessions and ICT clubs in schools ran by MINCOTIM in collaboration with the Ministry of Education, supported by UNDP and the EU.</p> <p>Enabling Policies: National Development Plan (PND) 2018-2027</p> <p>2010-2025 National ICT Development Plan.</p>
 <p>Specialised skills and Competences (these improve presence and influence on the internet)</p>	<p>Insight in Open Internet’s technical architecture and basic principles.</p> <p>Specialized competences in research and sector specific skills, internet protocol development, emerging fields such as AI.</p> <p>Supporting skills for e-entrepreneurs and start-ups, for example project management, digital marketing.</p> <p>Open Internet Governance skills, including understanding of and skills to navigate the multi-stakeholder processes and fora.</p>	<p>Specialised competences: Deployment of the E-health customised OpenClinic project⁶⁸ by Burundi’s Ministry of Public Health (MSPLS) in partnership with Enabel to connect 63.9% of the total healthcare facilities in the country via the District Health Information Software Version 2 (DHIS2) platform. Specialised competences acquired in patient management biomedical activities, reporting, and statistics.</p> <p>increased efficiency in data collection and analysis by Burundi’s Institute of Statistics and Economic Studies (ISTEEBU’s). Specialised advanced internet competency training on online tools for advanced statistical analyses, creating data visualizations for research.</p> <p>Skills for startups: Partnership Initiatives such as the UN Women and the African Girls Can Code program, Kit-hub’s partnership with the Women Tech Global movement to train 200 women in blockchain technology, as well as Bujahub’s tailored digital development bootcamps for women on data science, marketing analytics and mentorship opportunities.⁶⁹</p> <p>Enabling policies: Plan National de Développement de l’Informatique de Santé 2020-2024” (PNDIS II) facilitated the integration of digital technology in the healthcare sector to boost e-health.</p> <p>National Development Plan (PND) 2018-2027</p>

68 Open Clinic GA. 2020. “Informatisation des hôpitaux avec OpenClinic GA au Burundi.” YouTube video. 11 April. <https://youtu.be/KT8HwADCyK8>

69 Nkurunziza T. 2023.

3.2.2 Integrating Open Internet skills and competences in educational curricula and institutions

Educational curricula from primary schools to tertiary levels must prepare students for a world where digital increasingly enters in all aspects of life. The increased digitisation means that all jobs in all sectors will need digital skills, not just those in the digital sphere.⁷⁰ Basic technical and mechanical digital training must be complemented with the development of Open Internet skills that empower people to maximise their opportunities. Learning has to include not only STEM and entry-level digital literacy, but also media literacy, skills in online safety and online citizenship as well as understanding of individual human rights and how to exercise them responsibly on the Open Internet.⁷¹

Foundational digital skills are now part of the mandated curriculum at **primary and secondary school levels** in Burundi, marking a significant step in educational reforms. The integration of ICT courses starting from the 8th grade covers different subjects such as mathematics, science, computer usage and basic digital hygiene.⁷² However, the effective delivery of tuition faces challenges due to the shortage of adequately skilled teachers, computers, and reliable electricity in several schools. Consequently, learning experiences of students vary significantly with those in rural areas disproportionately affected. During the 2020-2021 school year, inspectors from the Ministry of Education visited 142 schools and revealed that only 46 had access to at least one computer. Additionally, 64 schools lacked both a dedicated computer training room and computers, underscoring the disparities in

access to digital education resources⁷³. While procurement of equipment is under the purview of the Ministry of Education, connectivity and ICT training is a mandate of the Ministry of ICT.⁷⁴

At the intermediary level, some schools offer training in digital skills and issue specific technical diplomas predominantly in fields like computer maintenance, basic programming, and networking. Examples include the Secondary Technical School of Kamenge (ETS Kamenge) in Bujumbura and ETS de Kiryama. However, the quality of digital skills training varies between different institutions as the Ministry of Education and MoYICT have yet to standardise the benchmarks. Students tend to encounter inconsistencies in the training they receive and often turn to digital hubs such as Buja-hub, Kit-hub, and The Burundi Youth ICT training centres for practical lessons to complement their learning.⁷⁵

At the tertiary level (which covers both technical and university level training) various institutions offer engineering diplomas, particularly in network and software engineering. These include the National University of Burundi as well as private universities such as Bujumbura International University, Université du Lac Tanganyika, Université Sagesse d'Afrique, Université Polytechnique de Gitega, Université Lumière de Bujumbura, Université de Ngozi and others. The Belgian development agency, Enabel, funds several technical schools across 8 provinces and has committed to increase the training centres from 13 to 18 under the EFT Bafashebige project. To overcome the challenges of ICT proficiency by trainers and students, technical training support will cover digital libraries, multimedia rooms for enhanced self-tu-

70 Caballero A., Bashir S. 2020. "Africa needs digital skills across the economy – not just the tech sector." World Economic Forum. 22 October.

71 Degezelle W., et al. 2022. P. 70-75.

72 Journal la Voix de l'Enseignant. "Burundi-Éducation. La dispense du cours des TIC reste quasiment théorique." CONAPES.

73 Ibid.

74 Stakeholder interviews from 20-23rd November 2023

75 Burundi Stakeholder interviews 2023 from 11-18th September

toring in both French and Kirundi languages.⁷⁶ The use of Kirundi as a language of instruction in addition to French in teaching internet competences enhances greater understanding of key principles from foundational to advanced level.⁷⁷

Additionally, with the aid of donor support and partnerships, eight training centres have begun to introduce new digital tools. This follows a teacher training programme, conducted in collaboration with the Rutana training centre in Burundi.⁷⁸

3.2.3 Open Internet skills and competences for the general population

The development of basic digital and Open Internet skills must part of a broader educational approach that reaches those already outside the educational system or never had access to it. The formal education system faces constraints in developing critically needed digital skills for the digital economy. There is currently no significant industry-skills connection, nor is there a database of advanced skills or detailed competency gaps in the country.⁷⁹ Educational authorities in Burundi are working to forge stronger links with the digital ecosystem community, specifically in mapping and defining the level of internet competency gaps. When completed, this exercise could guide how training opportunities and new digital techniques are distributed.⁸⁰

In 2019, the Ministry of Youth and ICT through SETIC, its ICT implementing arm, launched an ambitious project named “Bumenyi,” translating to “Knowledge” in Kirundi. This initiative aimed to **empower ten thousand (10,000) youths and local government employees** by imparting efficient skills in using social media tools for development. The training included a week-long workshop of 36 provincial trainers.⁸¹ Project Bumenyi was funded with approximately 200 million Burundian currency (equivalent to about \$80,000.00 USD) from Burundi’s Universal Service funds (USF)⁸². According to the Ministry, participation was satisfactory, but detailed information regarding the project’s overall success and impact is limited.⁸³

Targeted initiatives to empower women with the necessary skills and knowledge to thrive in the digital economy.⁸⁴ Women constitute over 50% of Burundi’s population and 90% work in Agriculture⁸⁵. Many are self-employed in the informal sector, engaged in small-scale farming, micro enterprises or working in retail and hospitality. The cost of internet access and devices acts as barrier to as many of these work in low-wage occupations. Without affordable broadband and meaningful connectivity many of these women risk missing out on the benefits of the digital economy⁸⁶. In addition, women face challenges in acquiring Open Internet competencies due to gender stereotypes and cultural norms which discourage them from pursuing education or training.⁸⁷

76 Agence Burundaise de l’information Net Press. 2022. “La société ne peut pas être dans le système numérique sans la digitalisation des écoles.” 21 May.

77 Stakeholder interviews from 20-23rd November 2023

78 D4D Hub. 2022. “Strengthening the education system in Burundi with digital tools, a real good idea?”

79 Stakeholder interviews from 11-18th September 2023

80 Ibid

81 Arakaza E.J. 2019. “Projet Bumenyi : Pour l’utilisation responsable des réseaux sociaux. ”

82 Burundi Operators contribute 1% of their revenues into the Universal Service Fund, which is managed by the Ministry.

83 SETIC. “ « Bumenyi » : un nouveau produit dans le monde des TICs au Burundi. ” And from interviews with Stakeholders from 11-18th September 2023

84 Burundi Stakeholder interviews 2023. from 11-18th September

85 UN women. <https://africa.unwomen.org/en/where-we-are/eastern-and-southern-africa/burundi>

86 Sarpong, E. (2021), “Beyond the basics: Quality, speed, affordability, relevance”, in Development Co-operation Report 2021: Shaping a Just Digital Transformation, OECD Publishing, Paris, <https://doi.org/10.1787/bc7b62dc-en>.

87 Burundi Stakeholder interviews 2023. from 20-23rd November

Open Internet competencies among women in Burundi range from foundational to intermediate levels and are impacted by factors such as age, geography, social status, and education.⁸⁸ There is a clear opportunity for teaching how to operate basic internet devices and the utilization of online content and tools. International partner such as EQUALS⁸⁹, civil society and local private sector have stepped up to fund and offer needed training. For example, Kit-hub partnering with the Women Tech Global movement has effectively trained 200 women in blockchain technology and Bujahub conducts tailored digital development bootcamps for women, emphasizing education in Python, data science, marketing analytics and offering mentorship opportunities.⁹⁰

Other initiatives such as ‘Miss Tech Burundi’ by Burundi Innovation Hub (Bihub) and ‘eSkills 4 Girls⁹¹’, are actively bridging the digital gender gap by training girls in digital skills and inspiring them to pursue STEM fields⁹². In partnership with the Burundian Ministry of Education, over 150 girls drawn from various locations including Gitega, Bujumbura, and Ngozi were trained in 2019. Internet competences imparted to these participants included app development, web design, graphic design as well as soft skills such as public speaking⁹³. BiHub also runs the annual Africa Code week which has imparted digital

skills training to over 13,560 youth since its inception. Its success is due in part to partnerships with local companies such as the higher life foundation, and international players such as SAP and UNESCO YouthMobile and Global Peace Chain⁹⁴.

Internet competencies required for E-Commerce

‘**Social media commerce**’ has been primarily driven by the rapid adoption of social media services such as WhatsApp and Facebook, which have a low entry threshold, particularly for small businesses. Social media commerce is also relatively popular as it encourages real-time interaction between merchants and customers, unlike the situation in traditional e-commerce transactions, which are typically automated.⁹⁵ Commerce platforms such as Burundishop⁹⁶, Famaburundi⁹⁷, Kilakitu⁹⁸, Kukasoku⁹⁹ and others operate alongside one another and are run by local Burundian. Online platforms and marketplaces are instrumental in advancing the country’s e-commerce industry. According to Statista, the digital commerce market in Burundi is forecasted to expand by 26.84% (2023-2027), reaching a market volume of US\$390.60m by 2027.¹⁰⁰ The growth of this sector hinges on the increased awareness of basic Open Internet skills as well as the development of intermediate and advanced Open Internet competencies.

88 Stakeholder interviews from 11-18th September 2023

89 EQUALS is a global partnership between several key partners, including the International Telecommunication Union (ITU), UN Women, International Trade Centre (ITC), GSMA, and the United Nations University (UNU). It also funds a Digital skills knowledge share platform See <https://www.equalsintech.org/digitalskillshub>

90 Nkurunziza T. 2023.

91 eSkills 4 Girls is a G20 initiative, focuses on addressing the digital gender gap in low-income and developing countries, aiming to expand global digital access for women and girls while fostering relevant educational and employment opportunities.

92 Burundi Innovation Hub , 2019 Miss Tech Burundi, <https://regionweek.com/burundi-innovation-hub-officially-launches-miss-tech-burundi-2019-highlights/>

93 Burundi Innovation hub – <https://regionweek.com/miss-tech-burundi-2019-closure-ceremonies-highlights/>

94 Ibid

95 Okeleke, K., Penteriani, G., Mastaki, J. L. N. 2021. “Enabling e-commerce in Central Africa: The role of mobile services and policy implications.” GSMA and UNECA.

96 <http://www.burundishop.com/>

97 <https://www.famaburundi.com>

98 <https://kilakitu.bi>

99 <https://www.linkedin.com/in/kukasoko-burundi-online-marketplace-b6770a177/>

100 USA Business. 2021. “Online selling platforms & marketplaces in Burundi.” 8 February.

Encouraging local content development:

Local innovators, equipped with Open Internet skills have been developing their own apps and solutions. However, they encounter obstacles when expanding their businesses. For instance, in Gitega, a local innovator developed a social media app called Gasape, but its usage remains limited due to insufficient marketing. Another local innovation, 'Leaper,' a payment processing platform created at Bujahub, successfully generated over \$8000 in a year. Despite modest progress in local innovation, challenges persist, particularly regarding regulations from the central bank, which pose threats to its growth. To foster the evolution of the digital financial services (DFS) sector, which relies on advanced Open Internet skills, regulators will require significant education to establish a more supportive environment for startups. Moreover, the government could boost the adoption of e-commerce platforms by focusing on creating more awareness of their use. For instance, local applications like E-soko, supporting agribusiness could be pitched for wider use. Local startups also stand to gain significantly from partnerships geared towards financing, marketing, and scaling if they can be backed by government incentives¹⁰¹. Improved national policies, particularly the planned E-commerce Strategy which aims to tackle issues on affordability, local adoption, intellectual property, privacy, and cyber security could provide a more enabling environment for local innovation¹⁰².

E- Commerce initiatives for women and Girls.

Recently, specialized trainings on e-commerce competencies have empowered young women and girls. Notable Initiatives such as the EQUALS Tech4Girls digital skills workshops in Muzinda and Bujumbura have been hosted in partnership

with the International Telecommunication Union (ITU) and the Enhanced Integrated Framework (EIF). Rural women farmers and entrepreneurs were trained in internet basics and obtained skills such as setting up email accounts and creating a WhatsApp presence that allowed them to advertise and grow their businesses.¹⁰³ Other training initiatives, such as the EQUALS "Her Digital Skills" workshop have focused on website development, establishing an online presence, online safety, and social media marketing. 30 young women beneficiaries of this training from the Muzinda region reported using these newly acquired Open Internet competences to reach a wider customer base for their agricultural products, services and for enhancing their businesses¹⁰⁴.

Digital Marketing initiatives: - Several training sessions conducted by the hubs and partners have prioritized digital marketing and the development of foundational Open Internet competencies. Participants typically consist of small business owners from different provinces in Burundi. For example, a 1-2-day Digital Marketing workshop, organized by EQUALS and GSMA, targeted predominantly young women aged 20 to 35. The training sessions were conducted in both French and Kirundi to encourage broader participation. Post-workshop, attendees reported feeling more proficient in fundamental digital marketing areas such as web fundamentals, establishing an online presence, utilizing social media, and creating content marketing tools.¹⁰⁵

101 Burundian Stakeholder interviews 2023 16/17 December

102 Burundian Stakeholder interviews 2023 16/17 December, Government is consulting on a draft E-Commerce Strategy to be outdoored in 2024.

103 Burundian Stakeholder interviews 2023 16/17 December

104 ITU Tech4Girls Workshops in Burundi, YouTube <https://www.youtube.com/watch?v=yqFQczOWg0o>

105 Burundian Stakeholder interviews 2023, 16-17th December

3.2.4 Building specialised Open Internet competences

Specialised Open Internet skills and a wide range of competencies including in research, protocol development, emerging fields such as digital trust or machine learning, and many other, empower people to create progress by tech innovations or redesigning business models. In Burundi, innovation in E-government services play a crucial role. This section showcases two key e-government services that stand out with their scale and impact: the OpenClinic project and ISTEEDU data collection and management. Their realisation, operationalisation and maintenance require specialised skills and competencies.

OpenClinic project

Burundi's Ministry of Public Health (MSPLS) creative deployment of the customised **OpenClinic project**¹⁰⁶ (funded by Enabel) in e-health has been instrumental in improving patient care, medical, administrative, and technical services.¹⁰⁷ This project was commissioned in 2018 to connect all hospitals and health centres via the District Health Information Software Version 2 (DHIS2) platform. With 40% of hospitals already connected and approximately 35 health centres computerized, the initiative is making commendable progress towards universal health coverage and accounts for 63.9% of the total healthcare facilities in the country.¹⁰⁸ The infrastructure of the OpenClinic model operates largely on renewable solar energy (photovoltaic), reinforced with lightning protection measures, ensuring uninterrupted

functionality in hospitals and health centres. It also benefits from a dedicated data centre and server hosted at the Ministry of Health with an effective cooling system and uninterrupted electricity supply.

Users of the OpenClinic system require intermediate and advanced internet competences. The system was designed to work mainly offline, but it has an option to connect to hospitals remotely via Virtual Private Networks (VPN) to access advanced IT specialist services.¹⁰⁹ Specific MSPLS departments have been trained and equipped with computers and basic software. Hospital staff using the OpenClinic have varying degrees of digital skills proficiency from foundational to specialised. Those with intermediate and advanced Open Internet competences are trained intensively for a week while others, particularly the nursing staff without basic internet skills have longer training periods. Online training modules include patient administrative and medical records management; reception and admission management; operating room management; medical imaging and other biomedical activities; reporting and statistics.^{110,111} Initial data entry errors at the start of digitising the health records were corrected through training and upskilling of the relevant healthcare personnel and data entry clerks. The OpenClinic platform is built on open-source software which has not only been cost effective but has encouraged more transparency, innovation, and interoperability with other systems.¹¹² An internal digitalisation team of Burundians with advanced internet competencies now oversees continuous upskilling in upgrades of the health management information system (HMIS).

106 Open Clinic GA. 2020. "Informatisation des hôpitaux avec OpenClinic GA au Burundi." YouTube video. 11 April. <https://youtu.be/KT8HwADCyK8>

107 Burundi Stakeholder interviews 2023. from 11-18th September

108 Burundi Stakeholder interviews 2023. From 20-22nd November 2023

109 Burundi Stakeholder interviews 2023. from 11-18th September

110 The full set of e-modules ran by OpenClinic include Patient administrative and medical records; Reception and admission management; Operating room management; Hospitalization management Care management; Medication management; - Consultation management; Financial management + billing; - Human resources management; Laboratory management; Medical imaging and other biomedical activities; Reporting and statistics.

111 Including training videos available at <https://www.youtube.com/@openclinicga2028/videos> .

112 Burundi Stakeholder interviews 2023 from 20-22nd November

They also manage the data centre, platform and other hardware infrastructure related to the programme.

Institute of Statistics and Economic Studies (ISTEEBU)

Burundi's Institute of Statistics and Economic Studies (ISTEEBU)¹¹³ is the overseeing body for the technical coordination relating to the National Statistical System in Burundi. In recent years it has increased its efficiency in data collection and analysis, and several international development institutions rely on its data. For instance, it showcases the performance of different sectors like agro- processing, by compiling the Harmonised Index of Industrial Production. This index includes over 22 sub-sectors and 56 products.¹¹⁴ ISTEEBU has significantly increased its monitoring of the country's progress towards the Sustainable Development Goals (SDGs) and national priority indicators. It played a crucial role in Burundi's submission of its inaugural Voluntary National Review (VNR) in 2020, which was subsequently presented at the High-level Political Forum on Sustainable Development in July of the same year.¹¹⁵ The agency has significantly enhanced its efficiency in collecting and processing social, demographic and economic data after investing in a new data centre and implementing modern archiving and storage tools, along with fostering new digital and Open Internet capabilities.¹¹⁶ Field enumerators are kitted with GPS-enabled tablets connected to a central data centre. Respondents reply directly via these field smart devices which make data entry and processing faster. ISTEEBU has also intensified advanced internet competency training for its staff, focusing on software and online tools like DECAT. Additionally, enumerators remain updated

on emerging trends and software related to data collection and statistical analysis including SPSS (Statistical Package for the Social Sciences), Adobe Flash Player, and Stata. These tools assist the ground teams with conducting advanced statistical analyses and creating data visualizations for their research.¹¹⁷

Other examples

The utilities sector notably the electricity and water distribution company Régie de Distribution de l'Eau (REGIDESO) has digitised its water bill payments to increase its efficiency. Field officers are connected to a data centre by smart tablet which helps them scan/photograph water meters and submit this data for issuing a bill to the consumer. Consumers are able to check and print out their bills via customised apps.¹¹⁸

Other sectors employing Burundians with advanced internet competencies include the financial sector particularly banking, insurance, and telecommunication. Key skills in demand involve managing back-end systems and platforms, including roles like software and product developers, engineers, programmers, and database managers. Front-end users with proficiency in software for efficient consumer services and transactions are also essential. Upskilling and training in these advanced competencies are conducted using locally trained talent or through recruitment based on the technology's origin.¹¹⁹

113 <http://www.isteebu.bi>

114 World Bank. 2018.

115 UN Statistics Division. 2020. "High-level Political Forum on Sustainable Development in July 2020."

116 Decree n°100/59 of 18 March 2008. Reorganization of the Burundi Institute of Statistics and Economic Studies (ISTEEBU). Initial funding provided by UNDP and the European Union.

117 Burundi Stakeholder interviews 2023. from 11th to 18th September

118 Burundi Stakeholder interviews 2023. from 11th to 18th September

119 Burundi Stakeholder interviews 2023. from 11-18th September and November 20-23, 2023

3.3 KEYS TO SUCCESS

3.3.1 Policy framework and plan of implementation for Open Internet competencies

The second iteration of the National e-Health Development Plan, known as the “Plan National de Développement de l’Informatique de Santé 2020-2024” (PNDIS II) stands out as an effective collaborative strategy that facilitated the integration of digital technology in the healthcare sector and paved the way for the innovative OpenClinic programme.¹²⁰ Having a policy framework with a roadmap for the implementation of robust data architecture and complementary Open Internet skills competencies contributed to the successful execution of the plan but also increased project’s credibility and made it easier to find partnerships and funding.¹²¹

3.3.2 Provision of critical infrastructure resources to support the Open Internet.

The OpenClinic in the health sector and ISTEERBU’s efficient data collection and analysis rely on robust digital infrastructure. For instance, a modern data centre equipped with state-of-the-art computers and cooling systems offers the capacity to host digital resources and services. This robust infrastructure facilitates data mapping and resource provision, allowing efficient storage and retrieval of data. These centres are connected to the national grid to ensure uninterrupted electricity supply and also linked through dedicated special lines, enhancing their reliability and resilience.¹²² The management of the back-end infrastructure by in-house resources ensures knowledge retention and transfer. By providing necessary

hardware and software supported by motivated staff teams, significant contributions can be made to the development of Open Internet competencies in Burundi.

3.3.3 Capacity-building and upskilling

Burundi’s government along with multilateral banks and development agencies has made significant investments in promoting Open Internet competencies through e-government initiatives. These efforts aim to bolster the skills of the public and institutions while enhancing expertise in various sectors of the expanding economy, including healthcare, education, the central bank, and statistical services. There is visible progress in e-governance, government projects and ongoing monitoring and evaluation activities geared towards continuous improvement and learning.

Privately run digital hubs such as Kit-hub and Bujahub actively pursue resource partnerships to develop practical digital training for students graduating from Burundi’s formal educational system. Both hubs train on average 2000 people annually and offer internet competences from coding, programming, data science and analytics to digital marketing. In addition, they mentor startups with soft skills like using data insights to improve customer targeting.¹²³ Other training institutions for upskilling the population include the Burundi Youth ICT Centre and the Rutana Training centre which focuses on building the capacity of ICT trainers.¹²⁴

120 World Bank Group. 2020.

121 Burundi Stakeholder interviews 2023. from 11th to 18th September

122 Stakeholders mentioned that the large data centre through the UNDP had sufficient capacity and is located at the Ministry responsible for information and communication technology (SETIC). Electricity supply was also not a problem because the data centre has a dedicated power supply line. In case of power outages, backup generators automatically kick in.

123 Ibid

124 D4D Hub 2022.

The country sets an inspiring example in **advancing gender equality by empowering women with Open Internet competencies** to bridge the digital gender divide. Successful collaborations between the Government, UN agencies such as ITU and UN Women, EQUALS Partnership, International Development Institutions, local civil society groups, hubs, and NGOs have enabled women and girls to acquire vital digital skills. Notable digital programs implemented through these multi-stakeholder collaborations include:

A partnership involving Burundi's local chapter of the International Planned Parenthood Federation (IPPF), Countdown 2030 Europe, and the Action Technology and Innovation Coalition demonstrates how **gaining Open Internet skills and social media training enable women to access comprehensive sexuality education (CSE)** ¹²⁵. Basic and intermediate internet skills have not only enhanced women's participation and engagement through platforms like WhatsApp but have also facilitated the distribution of crucial sexual reproductive health products such as contraceptives and pregnancy test kits. These digital skills have provided more women with opportunities to access essential support and guidance on sensitive issues, including HIV testing, contraceptive care, and services for survivors of sexual and gender-based violence (SGBV)¹²⁶. Successful case studies from Burundi and other nations culminated in concrete steps during the Generation Equality Forum in 2021, with the goal of promoting global gender equality in technology.¹²⁷

A structured system exists for enhancing internet competencies and upskilling within the National Statistical Agency ISTEEDU and the healthcare sector. This includes specialised training for data scientists, researchers, data centre managers and healthcare professionals. Continuous upskilling programmes include a range of competencies from data analysis tools like Stata, R-software, and SPSS to data entry and processing, as well as healthcare management training for Ministry of Health staff.¹²⁸

The Open Internet offers opportunities for e-learning, self-tutoring and earning income through the gig economy. Local innovations and platforms require increased awareness, user adoption, and improved transaction rates. A shift in mindset towards supporting local platform development is crucial for the growth of Burundi's economy.¹²⁹ Additionally, the nascent digital payments ecosystem requires enhancements through better consumer interfaces and customized Application Programming Interface (API) development. These improvements will facilitate easier payments, delivery of goods, and location services.¹³⁰

Skills required for emerging technologies like artificial intelligence and computing are important, as well as mentoring and project management skills. Mentorship programmes, such as Bujahub's Innopreneur bootcamp, provide individuals with diverse skills an opportunity to brainstorm and solve a real-life business case within 24 hours.¹³¹

125 Countdown 2030 Europe (C2030E) is a consortium of European NGOs advocating to ensure universal access to sexual and reproductive health and rights (SRHR) and family planning (FP) in developing countries through holding European governments to account on their international policy and financial commitments on SRHR. See https://countdown2030europe.org/storage/app/media/uploaded-files/FACTSHEETS_%20IPPF_technology%20innovation_02-Acrobat4.pdf

126 Countdown 2030 Europe. (2021). Sexual and Reproductive Health and Rights in the Generation Equality Forum' Action Coalition on Technology & Innovation for Gender Equality, p4. https://countdown2030europe.org/storage/app/media/uploaded-files/FACTSHEETS_%20IPPF_technology%20innovation_02-Acrobat4.pdf

127 Burundian Stakeholder interviews 2023 16/17 December

128 Burundi Stakeholder interviews 2023. from 11th to 18th September

129 Burundi Stakeholder interviews 2023. from 11th to 18th September

130 African Development Bank Group. 2019. "Republic of Burundi Country Strategy Paper 2019-2023."

131 Burundi Stakeholder interviews 2023. from 11th to 18th September

3.3.4 Collaboration and financial resources

The Burundi government has established collaborations with regional and international organisations such as the World Bank, European Commission, African Union, USAID, UNDP to advance Open Internet competences across sectors. Successful partnerships such as between the Belgian Development Agency Enabel and the Ministry of Health, between ISTEERU and World Bank/IFC and UNDP have facilitated research and the exchange of good practice in Open Internet competences including governance, knowledge sharing, accountability, policy alignment and technical cooperation.¹³² The health sector public/donor collaboration is also a good model in ensuring continuous technical and financial support. Funding for building requisite infrastructure such as data centres, supplying computers, training initiatives and expansion programmes has been made possible through joint efforts of the government, national and international sponsors.

In recent years, authorities have launched various initiatives to support job creation for young people, such as project incubators and ventures in livestock and agricultural projects. However, there's a latent risk that these efforts do not meet their stated objectives when there is poor coordination and inadequate resources.¹³³ Collaboration with private sector stakeholders could reverse some of these trends. Technology hubs and innovation

centres in the capital Bujumbura have been instrumental in sourcing funding or partnering internal development from agencies such as UNDP to effectively incubate start-ups and develop digital skills. Despite these strides they still face constraints to raise capital for expanding their service offers like supporting their incubated start-ups to scale.¹³⁴

By leveraging valuable partnerships especially with multilateral banks, development partners such as Enabel, GIZ, European Commission, UNDP, EQUALS and UNICEF, Burundi has been able to support education and technology programmes. Support varies from training in basic to specialized competences targeting specific groups. For example, a UN Women initiative involves working with cooperatives and educates women on digital and financial solutions. The trainings for example learn how to set up a mobile money account and use it to trade with customer or how to file group loan applications, a practice often overlooked by traditional banks¹³⁵. However, there needs to be better coordination of initiatives to optimise funding. In particular, partners and donors should consider direct engagement with existing initiatives to avoid duplication. For example, the World Bank Burundiskills4Jobs program works on a number of initiatives with Women and Youth in Burundi.¹³⁶ It will be beneficial for other funders to engage with them and collaborate where possible.

3.4 RESULTS OF THE BURUNDI MODEL OF OPEN INTERNET SKILLS DEVELOPMENT

Increased sector specific specialisation of Open Internet competences

Burundi recognizes the significance of sector-specific specialisation in Open Internet compe-

tences. This is exemplified in the training provided to data collectors, field officers, and enumerators working for the national statistical agency, the Institute of Statistics

¹³² Burundi Stakeholder interviews 2023. from 11th to 18th September

¹³³ Burundi Country Strategy paper 2019-2023 p9

¹³⁴ Ibid

¹³⁵ Burundi: UN Women strengthens usage of digital management for young girls and boys in cooperative groups.

¹³⁶ World Bank 2021. Approval of a \$80million to support women and youth projects in Burundi https://www.worldbank.org/en/news/press-release/2021/06/25/women-and-youth-at-the-center-of-the-world-bank-s-priorities-in-burundi?cid=SHR_SitesShareLI_EN_EXT

and Economic Studies of Burundi (ISTEEBU). ISTEEBU's personnel have honed their proficiency in software applications like the Data Entry and Cleaning Tool (DECAT)¹³⁷ and Strategic Shift in Public Policy Support (SSPPS)¹³⁸. In turn they also periodically train staff from other government agencies such as the Ministry of the Interior, of Community Development and Public Security on the use of specialist statistical and cartographic software.¹³⁹ ISTEEBU also monitors the country's SDG indicators and has developed a draft metadata handbook to aid this process based on its experience gained from compiling metadata indicators.¹⁴⁰

Continuous digital learning is pursued by both individuals and institutions given the dynamic nature of technology. Use of tools such as digital libraries and e-learning modules build up professional development e.g., sector-specific competences staying up to date with the latest advancements in technology and healthcare practices.

Efficiency in healthcare delivery driven by digital development

OpenClinic's digital healthcare management system has streamlined the process of accessing patient records, allowing healthcare professionals to quickly retrieve and update medical information. It has also helped with monitoring and evaluation of universal health coverage, leading to continuous improvement.¹⁴¹ Patient information is categorised and managed across three systems: the hospital's central server, a backup server set to back up data at least

twice daily, and a high-capacity Network Attached Storage (NAS) hard drive for an additional backup.¹⁴² These systems are operated by highly skilled teams in real-time and ensure data recovery in case of server failure. Plans involve centralising data onto the Ministry of Health's data centre, a project recently supported by UNDP.¹⁴³

The enhanced efficiency of patient care has reduced the risk of errors associated with manual record-keeping. Competencies to operate the system range from learning to manage the platform, infrastructure, and systems to learning how to use associated software. Initial training of staff ranges from a week to a month depending on the complexity of the Open Internet competency to be learnt and the required digital proficiency.¹⁴⁴ Healthcare professionals continue to build and refresh competencies with on-site training facilitated by the Health Sector IT Management Programme (PROGISSA) team in partnership with the local OpenClinic headquarters in Bujumbura.

Another success is improved revenue and medication management. Specialised training has improved oversight and tracking of financial transactions, making it easier to manage budgets and resources effectively. Additionally, medication management has also been optimised, ensuring the availability of essential drugs and minimising stockouts.¹⁴⁵

Enhanced contribution of Women Entrepreneurs through acquired digital skills

Burundi acknowledges the importance of empowering women with Open Internet digital skills to

137 DECAT is a software application typically used in data collection and management processes. It aids in streamlining and organizing data, ensuring accuracy and consistency.

138 SSPPS is a software application that aids decision-making processes within the public sector by providing tools for analysis, planning, and implementation of policies, often tailored to specific sectors or areas of governance.

139 *Burundi News Agency*. 2021. "Official Launch of the 10th Month of Statistics in Burundi." 5 November.

140 Voluntary National Review Report on the Implementation of Sustainable Development Goals in Burundi 2020. Burundi country report <https://unstats.un.org/capacity-development/UNSD-FCDO/burundi/>

141 Gustave, K., Verbeke, F., Ndabaniwe, E., Mugisho, E., & Nyssen, M. 2017. "OpenClinic GA Open Source HIS enabled Universal Health Coverage Monitoring and Evaluation in Burundian Hospitals." doi:10.13140/RG.2.2.27249.58720

142 NAS devices are standalone units designed specifically for file storage, data sharing, and backup purposes over a network.

143 Burundi Stakeholder interviews 2023. 20-23rd November

144 Burundi Stakeholder interviews 2023. from 11th to 18th September

145 Burundi Stakeholder interviews 2023. from 11th to 18th September and 20-23rd November

enhance their contributions to the local economy. To achieve this goal, it has actively pursued partnerships aimed at providing essential Open Internet skills.

It is worthy of note that the country keeps attracting strong commitments to support digital gender training from international development agencies such as UN Women, ITU, GSMA and the EQUALS Global partnership. These collaborations are instrumental for scaling up basic and intermediate Open Internet competences for women. An *“Accelerating Digital Transformation for Sustainable Development through Digital Innovation”* report by ITU Africa highlights the potential of targeted digital innovation in improving access to crucial services, job creation, and fostering economic growth. Following recommendations in this report, the Burundian Government through the Ministry of ICT and Media has advocated for financial commitments to specific projects. Subsequent to its engagements with the ITU’s BDT Director in May 2023, it has secured a commitment to involve Burundi in projects focusing on women’s empowerment and early warning systems to be funded by the African Development Bank.¹⁴⁶ Additionally, pledges have been secured to develop a comprehensive national strategy on digital accessibility.¹⁴⁷

Partnerships such as the ITU-EIF-EQUALS Initiative¹⁴⁸ with Burundi’s Ministry of Communication, Information Technologies and Media, Ministry of Commerce, Transport, Industry, and Tourism, in collaboration with the EQUALS Global Partnership and the International Telecommunication Union (ITU), have enhanced productivity of entrepreneurs.

This is particularly evidenced in the textile and tourism sectors as well as the coffee, tea, cocoa, and related agricultural sectors. Training sessions such as the “Tech as a Driver of Gender Equality in the Digital Economy workshop” have educated farmers to improve their agricultural methods and add value to their products. Farmers are able to share digital pictures and videos of their planting seasons with potential clients.¹⁴⁹ Additionally, workshops held in Bujumbura by digital experts in textiles and fashion showed how to open up to new markets in the US and Canada. Beneficiaries of the 2022 workshops have reportedly gained increased confidence to add value to their textiles for export.¹⁵⁰

Women entrepreneurs are not only provided with Open Internet skills, but they are also given international exposure to enhance their business development skills. For instance, in partnership with the Burundian Government, nine women entrepreneurs from the coffee and tea industries participated in the 2022 Organic & Natural Products Expo 2022 held in Dubai. Ahead of the event, these women engaged with potential buyers and partners through the Open Internet and a specialized online platform. During the expo, participants such as Coffee grower *Kaliko* and tea producer *Lovimax Tea Factory*¹⁵¹ exhibited their products, employing additional social media and digital tools such as Instagram to expand their online audience¹⁵²

Privacy and training in online safety to manage risks

There are Basic digital hygiene training programs to protect the privacy of individuals. These include

146 Interviews with Stakeholders, 2023 14-16th December.

147 Burundi Ministry of Communication, Information Technologies, and Media Report (2023) Presented at the Regional Development Forum of the International Telecommunication Union for Africa 2023 (RDFAFR): “Digital Transformation for a Sustainable and Equitable Digital Future: Accelerating the Implementation of SDGs in Africa”.

148 Under the framework of the EIF-ITU Project Enhancing the Digital Ecosystem and Digital Skills for the economic empowerment of women in LDCs target countries - Burundi, Haiti, and Ethiopia are assisted with resources to bridge the digital gender gap in sectors like textiles/ apparel and agriculture.

149 Burundian Stakeholder interviews 2023, 16-17th December

150 Ibid

151 <https://kalicocoffee.com/> and <https://lovimax.com/>

152 Burundian Stakeholder interviews 2023, 16-17th December

teaching device protection measures such as setting secure passwords and identifying spam content. However, to address online safety concerns, the Burundian Government, private sector, and local NGOs could greatly benefit from expert training to combat online gender-based violence (OGBV) and ensure a secure online environment for citizens. Collaboration with organizations like UN Women are helping to build capacity in online gender-based violence (OGBV) and child online safety protection measures. Additional training for the country's law enforcement and regulatory bodies will be essential to safeguard the digital rights of vulnerable groups, refugees, displaced persons, prisoners, and establish protocols for reporting incidents¹⁵³

Building blocks of Open Internet skills and competences coming together

The examples described above and elsewhere in this report showcase how Open Internet skills and competences (which include but are not limited to technical knowledge and skillsets) contribute to achieving progress, social and economic growth, and development. The projects and partnerships also show how different kinds of skills – skills that fit under different ‘building blocks’ (see section 3.2) and range from basic skills that should be integrated in educational curricula to specialised competences – come together, complement, or reinforce each other. Hence, projects, policies and investment strategies that aim to provide social and economic benefit through Open Internet digitisation should consider the full range of skills and put efforts where there are gaps.

153 Burundi Stakeholder interviews, 2023, 13-15th December

4.

Is the Burundi Model of Open Internet Skills and Competences Applicable to Other Countries?

The Open Internet skills and competences demonstrated in Burundi through initiatives like the OpenClinic, which empowers healthcare professionals with digital tools and skills, illustrates the potential to improve healthcare delivery through enhanced digital literacy. ISTEEBU's efforts in data management, collection and statistical analysis also underscore the importance of strengthening data-related competencies to support evidence-based decision-making. Additionally, the specific training efforts for entrepreneurs to boost E-commerce have shown not only to be empowering and productive but with a potential improve gender equality. All these initiatives highlight the potential benefits of investing in Open Internet competences including digital literacy, infrastructure, and data-related skills.

Burundi's experience underscores the value of multi-stakeholder collaboration involving government bodies, private sector, training centres, civil society groups and international organisations. For a country that has historically suffered political strife and division, taking this open integrated approach on digital skills development in the agriculture, health and other growing sectors fosters diverse skills and ensures widespread distribution of Open Internet competencies. The Ministry of ICT, ISTEEBU and the Ministry of Health's ability to

establish and secure partnerships for technical assistance and funding for capacity-building is commendable.

Burundi's model can be modified by other countries to suit their socio-economic, cultural, and technological contexts. Countries first need to gain insight as to what Open Internet skills competences are needed, at what level they are presently and where they are missing, map the gaps and design policies and strategies in response. Establishing strong partnerships for funding, resourcing, and capacity-building are equally critical. Countries also consistently need to iterate existing initiatives in response to their specific and new needs. Finally, regular skills audits must be carried out to ensure timely upskilling.

In summary, the examples given of Burundi's Open Internet competencies serve as an inspiring example of resilience despite financial and infrastructural challenges. Their success is based on openness, collaboration and knowledge sharing towards a more digitally empowered future.

5.

Acknowledgements

This document was developed by Stantec for the European Commission and is based on research by Stantec experts and interviews with local stakeholders.

We warmly thank the interviewed stakeholders for their availability and time, in particular,

Mr. Olivier Francis Cubahiro, Director General of the Ministry of Communication Information Technology and Media (MINCOTIM), Mr Jean Paul Nkurunziza, Vice President of the Burundi Youth Training Centre and Internet Governance Forum participant; Mr. Ingabire Parfait Head of ICT , Ministry of Health; Ms Spès Nimbona, Head of the Department of Data Processing, Data Publication, Diffusion, and Statistical Data Archiving and Documentation at ISTEEBU; Mr Cassien Gashirahamwe, Planification Department of the Ministry of Education; Mr Chris Igiraneza, Founder Kit-hub; Mr Abiyah David, CEO of Bujahub; Mr. Hans Massisa Co-founder, Bujahub. Mr. Egide Niyogusaba, Program Manager, Infrastructure. Energy at the European Union office, Burundi.

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