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Digital Entrepreneurship Skills Academy
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Digital Africa



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About
AEDIB|NET: The vision of AEDIB|NET (African-European Digital Innovation Bridge Network) is to shape a common African-European innovation and start-up ecosystem in collaboration with key players and initiatives from Africa and Europe. The core of the project is to strengthen pan-African and African-European digital innovation partnerships with the objective to promote exposure and knowledge sharing between SMEs, start-ups, academic institutions, governments, hubs, incubators, large companies, research organisations and others.

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Authors:

- [Mr.Adrien Perot] (Digital Africa)

Reviewers:

- [Mrs Clara Schricke; Mrs Isadora Bigourdan] (Digital Africa)

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Abbreviations

ACFTA	African Continental Free Trade Area
ADIH	African Digital Innovation Hub
AEDIB NET	African-European Digital Innovation Bridge Network
AFD	Agence Française de Développement
AGOA	African Growth and Opportunity Act
AMI	African Management Institute
AWE	Academy for Women Entrepreneurs
CPO	Chief Product Officer
DAP	Digital Ambassadors Programme
DES	Digital and Entrepreneurial Skills
DFI	Development finance institutions
DIH	Digital Innovation Hub
EBRD	European Bank for Reconstruction and Development
EU	European Union
FCS	Female Concentrated Sector
ICT	Information and Communications Technology
IFC	International Finance Corporation
ITC	International Trade Centre
MDS	Male-Dominated Sector
MEST	Meltwater School of Technology
MSMEs	Micro, small and medium-sized companies
OFPT	Office for Vocational Training and Employment
SMEs	Small and medium-sized companies
STEM	Science, Technology, Engineering and Mathematics
TEF	Tony Elumelu Foundation
TVET	Technical and Vocational Educational Training



UWEP	Uganda Women Entrepreneurship Programme
We-Fi	Women Entrepreneurs Finance Initiative
WHO	World Health Organization
WSMEs	Women-led SMEs
YALI	Regional Leadership Centre for Young African Leaders



Executive summary

The nexus between Africa and digitalisation brings an array of opportunities as well as caveats. The continent is increasingly being looked at for its opportunities and talent around digital entrepreneurship. Gradually, stakeholders evolving in this ecosystem, such as African startups and entrepreneurs, have identified the key skills to navigate and perform in their environment. Nonetheless, digital entrepreneurship remains a male-dominated sector and women often struggle to thrive in this ecosystem for a myriad of reasons. The list includes psychological barriers, lack of digital skills, lack of networks or just resistance from men that want to preserve the status quo. Looking more specifically at training programmes and initiatives in some African countries, this white paper argues that many training opportunities exist but often fall short in answering women's needs, they remain expensive and are concentrated in urban areas. Thus, this white paper proposes a women-centred 3-week academy focusing on digital literacy as well as offering a holistic approach to equip women with the psychological, digital, and working skills to achieve their objectives. Designed around their needs, this training will allow women to dive into digital literacy and select the skills and the tools that they need to either digitise their business and/or discover wider opportunities in the African digital entrepreneurship ecosystem.



Context

In the bigger picture, the work package 3, entitled “Digital and Entrepreneurship Skills (DES) Academy for marginalised groups”, is part of the African-European Digital Innovation Bridge Network’s (AEDIB-NET) global objective to strengthen a common African European digital innovation ecosystem by supporting local digital innovation and start-up ecosystems in Africa and facilitating the collaboration between European and African Digital Innovation Hubs (DIHs). This includes developing and strengthening key infrastructures as well as building strategic cooperation mechanisms and facilitating bridging activities on technical capacity building and technology transfer between African and European innovators and startups, private sector, academia, local governments and investors.

The purpose of this white paper, integrated in the work package 3, is to address the needs of marginalised young women in semi rural areas by enhancing their inclusion and opportunities in entrepreneurship by raising their digital and entrepreneurship capacities within a 3-week training designed in independant blocks to ease its implementation by the partnering DIHs in Africa according to national contexts. This white paper will constitute a curriculum basis for the Digital Entrepreneurship Skills (DES) Academy. It does not intend to offer an exhaustive benchmarking of all trainings available on the continent pertaining to digital entrepreneurship in Africa but rather a global snapshot of relevant opportunities within the frame and requirements of the DES Academy that aims at better integrating African women in the digital ecosystem. This programme will be created and tested by ENABEL in two countries, Uganda and Morocco. Finally, the results will be capitalised upon by AfriLabs in order to scale it up and build it as a sustainable and inclusive programme for African DIHs through a toolkit.

Introduction

The acceleration of the African digital ecosystem has been noticeable in recent years with an increase in the volume of investments in African startups, reaching more than 4 billion USD in 2021. In the same year, startups raised more than 2.5 times the investment raised in 2020, with more than 800 deals on the continent. In 2019, they raised 2 billion USD, an increase of nearly 75% compared to the amount raised in 2018. The number of startups that have raised funds stood at 234 in 2019 against 146 in 2018. These funds have allowed the emergence of new champions, such as the Egyptian leader in electronic payments Fawry, whose capitalisation on the Cairo stock exchange recently exceeded one billion US dollars, the successful exit of Paystack in Nigeria, and Wave, the first-ever startup from French-speaking Africa to become a unicorn. An innovation ecosystem made up of supportive regulations for business creation as well as dedicated support structures and incubators is taking shape.¹

Alongside this digital boom, there is also a demographic and economic challenge on the continent. By 2050, the population of the African continent will have doubled to 2.5 billion, a quarter of the world's population. By 2100, it will have quadrupled to 4 billion. Half of the population will be under 25 years old. Today, 60% of the unemployed in Africa are young adults, and 95% of young people between 15 and 25 who work are in the informal economy.² They vary markedly in both their characteristics (e.g., gender, location, literacy, education, and skill levels) and their culture. Nonetheless, Africa's population of young people forms the bulk of the workforce and is more likely to engage in digital work, especially due to the growing internet penetration on the continent.³

If 2019 had seen a major milestone in the volume of investments for African startups, 2020 confirmed their attractiveness, in spite of -or perhaps thanks to? - the COVID-19

¹ **Digital Africa. (2022).** White Paper.

² **Campus AFD. (2021).** "Comprendre la dynamique des écosystèmes apprenants en Afrique".

³ **United Nations Economic Commission for Africa. (2019).** "Digital Trade in Africa: implication for inclusion and Human Rights".

pandemic. In 2020, the acquisition of the fintech Nigerian champion online payment by the American world-leader Stripe for more than 200 million US dollars was a record for an African startup and sent a positive signal to international investors regarding the opportunities offered by African tech ecosystems. According to the World Health Organization (WHO), while the COVID-19 pandemic galvanised the development of 1000 new technology innovations, 120 of them were piloted, adopted, or made in Africa. The opportunities ahead are limitless. In 2030, 800 million young African people will join the job market and the challenge is to ensure that they can find an occupation that makes them self-sufficient as well as ideally being outside the informal economy and in economically promising sectors. The ability of the region to capitalise on this demographic shift will depend on its ability to improve the education to employment pipeline.⁴

Nonetheless, the current digital ecosystem remains flawed. The opportunities offered by the growing use of the Internet and other digital tools are not being enjoyed by everyone equally.⁵ Gender divides and inequalities in skills development and digital literacy hamper the creation of an inclusive and virtuous ecosystem. Persistent gender, age, and other divides around Information and Communications Technology (ICT) usage have led to fewer opportunities for women, persons with disabilities, and other marginalised populations.⁶ Although entrepreneurship has been acknowledged as a cornerstone of development and socio-economic transformation to achieve key targets of the Sustainable Development Goals, the impact of digitalisation appears as a double-edged sword. Digitalisation can either be a springboard for greater inclusiveness or a profound transformation that further excludes half of society.⁷

Women make up a greater share of entrepreneurs worldwide than ever before and their participation in this digital revolution is vital. Globally, the gaps in the ratio of female to male participation in entrepreneurial activities are plummeting, and in some

⁴ **Digital Africa. (2022).** White Paper.

⁵ **United Nations Economic Commission for Africa. (2019).** “Digital Trade in Africa: implication for inclusion and Human Rights”.

⁶ **ITU. (2018).** “Digital Skills Toolkit”.

⁷ **United Nations Economic Commission for Africa. (2019).** “Digital Trade in Africa: implication for inclusion and Human Rights”.

countries, women are as or more likely than men to own a business. Women's greater participation, however, does not mean that they are benefiting equally, especially since the impact of the COVID-19 pandemic has been disproportionately faced by female entrepreneurs, who were more likely to experience a greater income loss than men. It can be explained by the fact that female entrepreneurs tend to work in hard-hit sectors and are, on average, less equipped to pivot their business activities in response to a crisis.⁸ Profits and sales of female entrepreneurs continue to be lower on average than those of male entrepreneurs and their businesses have higher closure rates and less potential for growth.⁹ Women still struggle more than men to raise capital to expand their business. It has been underlined that women start with 53% less capital than men and, across Europe as a whole, female founders have secured just 1.3% of all venture capital funding available since 2017.¹⁰ The road to success can be hampered by the gates of male-dominated sectors and although women are the backbone of the African economy, women's entrepreneurship in Africa is a ferocious battle, especially in terms of access to financing.

Africa is regarded as a fertile ground for female entrepreneurship where the continent has the highest rate of entrepreneurial activity for women in the world: 24% of African women entrepreneurs vs. 11% of women in Southeast Asia & Pacific countries, 9% of women in the Middle East, and 6% of women in Europe and Central Asia. Stephan-Eloïse Gras, Executive Director of Digital Africa, highlighted that: *"Africa represents the 'high' range in terms of inclusion of women in the technology industry with 30% of women professionals (admittedly, still too low)."*¹¹ It has also been stressed that although women currently account for only 30% of the technology industry in Africa, their rush into Science, Technology, Engineering, and Mathematics (STEM), encouraged by a number of initiatives, suggests that in a booming digital sector, women will play an increasingly important role.¹² However, men and women do not

⁸ OECD. (2021). "Covid-19 threatens to undo progress made on closing the gender gap in entrepreneurship".

⁹ World Bank. (2022). "Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector".

¹⁰ Parlmer, M. (2022). "Advice from female founders on starting your own venture", *Financial Times*.

¹¹ ANA Mag & Resilient by Digital Africa. (2022). "Femme & Tech: Une combinaison gagnante".

¹² Ibid.

start with the same chances, women have to overcome unfavourable structural conditions such as lower education levels and lower asset endowment. They also have to face difficulties in accessing financing where they sometimes fail to meet loan conditions. It has also been highlighted that women are predominantly practising subsistence entrepreneurship with a business model that offers little guarantee of strength to investors.¹³

Hence, this digital era is coming with many opportunities that need to be accessible to both men and women. However, specific skills are often required to pursue certain careers in digital entrepreneurship and women are under-represented in this sector and training opportunities often fall short in answering women entrepreneurs' needs to digitise their business or give them the confidence and tools to further their skills in digital entrepreneurship.

In the first section, this white paper provides a benchmark of digital and entrepreneurship skills on the African continent while offering a snapshot of women's involvement and needs within this ecosystem. The second section looks at the national level by focusing on some African countries that will be employed as case studies. The third section then presents recommendations on how to integrate women into this digitalisation era by matching the needs of the ecosystem and their capacities. A conclusion ensues.

¹³ **Roland Berger. (2020).** "Accelerating women's entrepreneurial dynamics in Africa".



Methodology

This white paper relies on the expertise of Digital Africa which has acquired substantial knowledge and analysis of the African tech ecosystem. It also relies on reports from international organisations that allow us to have a global perspective on the dynamics of the continent while using as much as possible reports and briefs published by African stakeholders as well as testimonies from actors on the field, amongst which the innovation DIHs being part of AEDIB NET Project. We deeply thank them for their involvement in building a powerful academy to ease the access of women in the tech industry.

1. State of the art on digital & entrepreneurship skills opportunities and needs in Africa

Mapping and benchmarking of already existing digital entrepreneurship trainings and/or digital skills trainings in Africa and the most in-demand skills by startups

The tech ecosystem in Africa is made of mostly young people (18-30) and remains a male-dominated environment. One pattern that is often reported is that young digital entrepreneurs are graduates from local universities and have little to no prior professional experience. They have few networks, are mostly self-taught about business, and are usually very product-focused.¹⁴ In the past two years, Covid-19 has impacted the upcoming generation of learners and has necessitated a mass transition to blended learning but offline remains key for communal interaction and skills matching.

The question of Africa's economic development by Africans is a crucial issue in many countries, with the desire to train a generation of leaders, entrepreneurs and change-makers. There is also a strong desire for Africa to provide its own solutions and not to be dependent on other continents, hence the strong development of start-ups and all kinds of incubation and acceleration programmes. Often, these schemes integrate the issue of positive impact and advocate the development of social entrepreneurship, capable of addressing the challenges of the country/continent. These training schemes combine both business and soft skills (e.g., leadership, management) development. The methodologies may not be innovative, but nevertheless, these programmes are helping to develop entrepreneurial skills - and for some, anchor talent in Africa.¹⁵

The literature on digital entrepreneurship has highlighted that one of the main hurdles faced by entrepreneurs vying for digital entrepreneurial opportunities includes the lack

¹⁴ Internal expertise of Digital Africa and EdTech.

¹⁵ Campus AFD. (2021). "Comprendre la dynamique des écosystèmes apprenants en Afrique".

of training in digital skills and business knowledge.¹⁶ Nonetheless, **many digital entrepreneurship and digital skills trainings are available in Africa, particularly in Côte d'Ivoire, South Africa, Nigeria, Senegal, and Kenya.** Those countries concentrate most of the trainings available on the continent. Looking more specifically at the skills proposed in those trainings, jobs perspectives mostly include the jobs of digital marketer, developer, tech entrepreneur, full-stack developer, data scientist, and project manager.¹⁷ Most training programmes cover the same core skill areas while overlooking the entrepreneur's core skills and the soft skills required to navigate the entrepreneurial ecosystem.

Africa is a diverse continent with countries-specific contexts that must be considered when developing and implementing digital entrepreneurship or digital skills trainings. A mosaic of actors can be involved in digital entrepreneurship including Academia, the private sector (e.g., entrepreneurs, hubs, and companies), the government, the public sector, and the Media.¹⁸ It has been highlighted that although being regarded as a driving force for development, universities, especially in East Africa, do not provide the knowledge and skills needed regarding tech and digital entrepreneurship.¹⁹ It is not an easy task to find degrees tackling entrepreneurship and digital skill while matching the needs of the market. When one can find some courses on entrepreneurship, it often falls short to live up to their expectations. Those courses do not allow a practical aspect of those fields. **Bachelor's degrees in Data science exist but mostly in expensive and private universities** such as the American University in Cairo or the Canadian International College located in Cairo as well. Besides, the only master's degree in data science available in a university is in Côte d'Ivoire at the Institut National Polytechnique Félix Houphouët-Boigny (INP-HB). Regarding master's degrees in entrepreneurship, only two programmes are available, one in Ghana and one in Tanzania. Thus, the offer is too scarce or costly. **Among**

¹⁶ Antonizzi, J., & Smuts, H. (2020). "The Characteristics of Digital Entrepreneurship and Digital Transformation: A Systematic Literature Review".

¹⁷ Internal expertise of Digital Africa and EdTech.

¹⁸ Möbius, M., & Ulrich Wünsch, U. (2020). "East Africa Digital Entrepreneurship Ecosystem in Higher Education".

¹⁹ Möbius, M., & Ulrich Wünsch, U. (2020). "East Africa Digital Entrepreneurship Ecosystem in Higher Education".

universities in sub-Saharan Africa, only 7% have an entrepreneurship centre dedicated to entrepreneurship development; 28% offer courses specialising in entrepreneurship, and 10% offer a course in innovation and technology. The education system tends to focus on theoretical education and harnessing skills most useful in corporate firms, failing to offer more practical curricula that can adequately prepare youth to work in entrepreneurial enterprises.²⁰

The curriculum must include local, national and regional contexts relying on a shared definition of what an entrepreneur is and what an entrepreneurial ecosystem entails. The different levels must work in harmony and complement one another.²¹ Context is of great importance to the extent that skills and solutions need to be applied to a specific environment: Industry, cultural, social, legal, etc... A former director of a startup training programme in Nigeria stressed that:

*“The context in Africa and each of its countries is fundamentally unique and different. You can’t parachute solutions from outside. You can try to implement best practices but need to take into account the local context”.*²²

It has been highlighted that experiential learning is a key factor to guarantee core skill learning not only to become a digital entrepreneur but also to thrive as one. A holistic digital entrepreneurship education shall include mentorship, coaching and direct exchanges with active digital entrepreneurs through peer-to-peer learning. Those conditions need to be addressed by Academia, the private sector as well as the Government.²³ Thus, a focus is necessary on content that helps digital entrepreneurs build the skills, experience, networks, and mindsets they need to navigate the growth of their businesses. The content needs to be contextualised to the reality of the

²⁰ Digital Africa. (2022). White Paper.

²¹ Möbius, M., & Ulrich Wunsch, U. (2020). “East Africa Digital Entrepreneurship Ecosystem in Higher Education.”

²² Internal expertise of Digital Africa and EdTech.

²³ Möbius, M., & Ulrich Wunsch, U. (2020). “East Africa Digital Entrepreneurship Ecosystem in Higher Education.”

countries and cultures the entrepreneurs are evolving in. However, some caveats are attached, not only is it necessary to avoid a one-size-fits-all approach but it is necessary to not just translate content to different languages. One has to be mindful of the fact that entrepreneurs' skill needs vary with the stage of their business and that the background of the entrepreneur plays a critical role in the skills they need to develop. Learning by doing is an approach that needs to be supported by guidance and used as a springboard to apply knowledge with personalised support from the ecosystem. The CEO of an incubator in Côte D'Ivoire highlighted that *"there is a lot of training content and programmes. But where to start? Also, we need more personalised support like mentors and community of peers"*.²⁴

Other forms of learning via ad hoc schools have been developed such as online courses, coding boot camps, or IT training. Those trainings offer an alternative to formal universities while allowing more flexibility without being expensive. The training structures that are implemented across most African countries in the tech ecosystem in Africa are **WIA Bootcamp**, **GomyCode**, **Samsa Africa**, and **Edacy** where most of which offer blended trainings and courses. The length of training varies according to the type of programme and the structure selected, going from one week to learn how to design and produce video content with **Samsa Africa** up to six years if you want to follow IT training at **1337** in Morocco. Having in mind the plethora of training courses available on the continent, it is necessary to collaborate with existing training and content providers to avoid duplication for needs already covered and potentially create counterproductive competition. There is also a call to invest in community building alongside content delivery and leverage offline infrastructure in different countries. Based on the skills needed by startups in Africa, **Talent 4 Startups** is a pilot programme of training grants aimed at training young Africans in tech and digital skills. Trained talent will be linked to startups looking for local talent. Talent 4 Startups aims to achieve two major objectives: enable the startup to access the skills they need to grow by working on a skills repository to ease the identification of such skills and providing them with qualified staff members trained by selected training providers, most of them

²⁴ Internal expertise of Digital Africa and EdTech.

being startups themselves. The programme also aims at helping African youth to upgrade their digital competencies in order to support ICT industries to recruit local talent, including talent coming from remote areas and support the creation and development of SMEs and local start-ups.

In regards to startups, it has been stressed that they are struggling not only to find but also to attract and retain talent. A CEO of a startup in the media industry in Nigeria highlighted that:

“There are not enough good people who have the skills to perform the job behind the title. The few good people are impossible to hire because they prefer the salary, stability, and prestige offered by big corporations”.

One misconception that must be debunked is that training is not the panacea to all issues regarding startups' needs. The lack of training is not the only reason explaining this talent shortage, other factors must be taken into account. The biggest recruitment challenges for startups include the lack of resources to process job applicants, the salary competition from local and international corporations as well as a perceived less attractiveness, brand recognition, and vision.

Looking at their needs, startups are seeking adaptable problem solvers with an entrepreneurial mindset and hustler mentality. A former director of a startup training programme in Nigeria highlighted that *“the most important is the entrepreneurial mindset. The hustle, being agile, solution and future-oriented, able to take risks and navigate uncertainty”*.²⁵ Regarding the most in-demand skills by start-ups, soft skills appear at the top of the pyramid. It includes skills such as collaboration, communication, leadership, self-organisation, creativity, and critical thinking. A CEO of an Edtech startup in Côte d'Ivoire underlined that *“the needs of the business always*

²⁵ Internal expertise of Digital Africa and EdTech.

change. So do the hard skills needed to perform the job. But what always stays is the need to collaborate, communicate, learn, iterate, give and receive feedback”.²⁶

- **The nuances between French-speaking and English-speaking Africa**

A study carried out among young African entrepreneurs²⁷ evaluated their current needs and pictured the gaps that exist in available training programmes. Among the participants, 73% of them were startup founders mainly coming from either Agriculture & FoodTech, E-Commerce & Retail, or Edtech. **When asked to identify the most important skills for young African entrepreneurs, the top answers were creative thinking & problem solving, product development, and sales & marketing.** One difference was noticed according to the language spoken by respondents. In particular, French-speaking participants were about two times as likely to list financial management, organisation management, leadership & motivation, or relationship building as critical skills compared to English respondents.

Regarding the identification of critical gaps that exist between the skills needed and the currently available training programmes, “soft skills” (e.g., emotional intelligence, communication, leadership, collaboration) were the most commonly listed skills just before management & strategy and finances. Looking more specifically at startup founders, when asked what were the most important skills for new hires, soft skills were the predominant skill and were mentioned by 3 out of 4 participants. Among French-speaking respondents, productivity (e.g., work ethic, reliability, proactive) also stood out, appearing in 77% of French responses. Thus, **this survey suggested that whereas English-speaking participants look for specific (role-oriented) skills, French-speaking participants seem more likely to look for a more broad profile of general competence and disposition, except for soft skills which are highly valued by both participant groups.** When asked to identify the key roles founders needed to hire, approximately 30% of respondents identified marketing or sales as the

²⁶ Internal expertise of Digital Africa and EdTech.

²⁷ Ibid.

key roles needed in their startup, just before customer service and finances. While many of the top skills and roles identified were consistent between survey versions, there were several thematic differences between the Francophone and English-speaking respondents. For example, responses among French-speaking respondents were more likely to include character traits such as **critical skills**, explicitly valuing classes on '*personal development*' or '*morality*', and new hires who are '*friendly*' and '*honest*'. By comparison, responses from English speakers were more likely to point to '*work ethic*' and '*efficiency*' as key traits in a good employee. French-speaking respondents were also more likely to point to general themes rather than specific skills. So whereas English participants underlined a need for *data analysis* and *digital marketing*, French speakers were more likely to request classes on *savoir-faire* and list *competence* as a critical skill in new hires.

Hence, the key skills desired vary for entrepreneurs in Anglophone & Francophone Africa but a strong emphasis on soft skills is sought after in Francophone Africa.²⁸ Training opportunities should focus on the development of key skills that entrepreneurs need to manage change as they and their ventures navigate in the African digital ecosystem. Beyond training, entrepreneurs have stressed the importance of exploring more practical formats that go beyond passive content consumption. One answer could be to integrate more practical formats into how programmes are delivered, with coaching and mentoring to provide varied, just-in-time learning that meets them wherever they are.²⁹

Looking at job opportunities across Africa, a study looked at LinkedIn job offers in the continent and highlighted that 45% of overall offers are published by middle-sized companies (11-50), 37% by big size companies (51-200), and only 17% by small size companies (2-10). Almost half of the job opportunities target entry-level positions with few years of experience while 36% are targeting associate-level positions and 17% mid-senior-level positions. Those job offers are primarily related to the industry of digital agency (34%), financial services & payments (21%), and EdTech (7%). Thus,

²⁸ Internal expertise of Digital Africa and EdTech.

²⁹ Ibid.

we see a real opportunity for the youth in Africa to take advantage of opportunities offered by entry-level positions through trainings that will reinforce their employability.

- **Development**

Development jobs represent 31% of offers and cover an array of different expertise. In this area, the most in-demand jobs are software **engineer, full-stack developer, back-end developer, and front-end developer**. The hiring momentum for those jobs occurs just between the end of the problem-solution fit and the premises of the construction of the product-market fit. Strong transversal skills such as **problem-solving**, attention to detail, programming languages, and patience are required to thrive in those jobs. An ecosystem builder at Government Start-up Support Agency in Senegal emphasised the importance of the product-market fit by highlighting that:

“(startups founders) tend to focus more on the product than on the market and they’ll come with something they think is a technically advanced product but it doesn’t answer any need of the market or the use pattern of the population.”³⁰

During this phase, essential skills include, among other things, product development, understanding the market, pricing, fundraising, and legal & governance. Although it has been underlined that those soft skills are essential to answer the needs of startups, it nonetheless does not exclude the need to master specific hard skills such as GIT in order to collaborate, Java (Spring), and Python to provide code web services, or MySQL to manage a database. Several training providers have been identified including **Gomycode** which provides training to become a full-stack

³⁰ Internal expertise of Digital Africa and EdTech.

developer and operates in Northern Africa as well as Côte d'Ivoire, Senegal, and Nigeria. Besides, **ecole241** in Gabon and **Kinshasa Digital Academy** in Congo both offer trainings to become a developer. **Moringa School**, based in Nairobi, offers training to become a full-stack software engineer through online or hybrid learning. To attend this 15-week training programme, one will have to pay between 1050 and 1200 euros while already having a university degree with a background in a computer-related course. Participants must beforehand follow a compulsory 8-week beginner module to get accustomed to online learning management systems and gain digital literacy skills for 400 euros. Thus, we see that in this sector, obtaining those skills can come at a cost but also require pre-existing knowledge.

- **Sales & Marketing**

The second most popular thematic job opportunities-wise is sales & marketing where technical skills are also required for in-demand jobs in sales and growth. The hiring momentum occurs right at the completion of the product-market fit to kick off startups' growth activities. **It requires strong analytical and collaboration skills, communication, and confidence.** Becoming a growth hacker entails acquiring skills pertaining to campaign and content management (e.g., web traffic analysis, content production & promotion) and marketing (e.g., growth strategy and planning, customer acquisition & retention) while using creative, low-cost strategies to help businesses acquire and retain customers. This sector requires skills in relationship management (e.g., negotiation, cold communication), organisation (e.g., planning, time management), and monitoring (e.g., market research, competition analysis). One job example can be a sales executive who is responsible for selling a company's products and services to individuals, businesses, and government organisations.

Several training providers have been identified such as **Kinaya Venture** operating in Senegal and Côte d'Ivoire which offers training to become digital marketers and project managers. Other actors in this field include the **African Management Institute** (AMI) operating in Kenya, South Africa, and Rwanda. To strengthen or acquire sales &

marketing skills, several training programmes are available on the continent. Operating in Egypt and sub-Saharan Africa (e.g., Kenya, Uganda, Rwanda..), **Sinapis** is one of the first places in Africa to train and accelerate entrepreneurs, it offers a 6-week programme focusing on sales & marketing. Lastly, **Apprenticeship Consults Africa**, which operates in Nigeria, proposes a Business Immersion Programme to acquire not only digital and online marketing skills but a whole set of skills to help small business owners acquire fundamental business and entrepreneurial skills.

- **Data & Analytics**

The third most sought-after thematic encompasses data & analytics and includes the jobs of **business analyst and data analyst**. People who can derive meaningful information from data are in high demand in every sector, a trend driven by the global exposition of big data and the generalisation of sophisticated tools to manage, analyse, and visualise data. Some trends suggest that **in 10 years, data experts will have replaced computer experts as being a desirable profession**. As such, people with data skills will be found in every industry just as people with computer skills are now needed across all job sectors. While data scientists with advanced mathematical and statistical expertise represent the top tier, many organisations are demanding data-based literacy and specific skills from employees.³¹

The hiring momentum for those jobs occurs right after the completion of the product-market fit to kick off startups' growth activities. One of the main challenges in the current ecosystem is that although African tech startups generate data, there is a lack of skills to put those insights in perspective, hence hampering the competitiveness of the organisation. Essential skills for those jobs include ETL, collaboration, communication, and business intelligence. The data analyst serves as a gatekeeper for an organisation's data so stakeholders can understand the latter and use it to make strategic business decisions. The job requires specific skills in reporting (e.g., business intelligence tools), database (e.g., SQL, Excel, R & Python), and extract transform load

³¹ ITU, (2018). "Digital SKills Toolkit".

(e.g., scraping & mining, management & export). The business analyst serves in a strategic role focused on using the information that a data analyst uncovers to identify problems and suggest solutions.

Required skills include business acumen (e.g., requirements analysis, business strategy & process), operation management (e.g., estimation and planning, system & workflow analysis), and analysis & reporting (e.g., SQL queries, competition analysis). Training to become data scientist and data analyst are notably offered by **Blossom academy** and **Zindi** respectively operating in Ghana and Southern Africa. In South Africa, **Umuzi** offers training to become data analysts, digital marketers, and developers. **Moringa School**, based in Nairobi, offers training to become a data scientist through online or hybrid learning. However, to attend this 18 or 25-week training programme, one will have to pay between 1050 and 2000 euros while already having a basic understanding of mathematics and statistical concepts. A 5-week beginner module is also available for 350 euros to get introduced to data science.

- **Operations**

Lastly, operations have been identified as another thematic that will be key in the growing African tech ecosystem. More specifically, it encompasses various jobs such as **product manager, product owner, and Chief Product Officer (CPO)**. The hiring momentum for those jobs occurs at the beginning of the problem-solution fit phase. Often, African entrepreneurs have attended engineering schools that trained them to become amazing builders. On the other side of the coin, it means they sometimes build things before knowing why they are doing it and whom they are doing it for. The absence of a clear roadmap and defined objectives can jeopardise their resources. Hence, essential skills pertaining to those jobs include, among other things, collaboration, market monitoring, competition analysis, and community building. Both implemented in Senegal and Côte d'Ivoire, **YUx design** offers training to become a

product manager and a UX Designer, and **Make Sense** proposes training to become a project manager.

- **Soft Skills**

Regarding soft skills, although they are necessary for every African entrepreneur to succeed in a tech ecosystem, the supply is way more scarce. The **Tony Elumelu Foundation** (TEF) identified the most important soft skills that every entrepreneur should learn. The first one is **effective communication**, to know how to communicate effectively with investors, employees, clients, peers and mentors. Then, **leadership** allows to motivate others and requires entrepreneurs to understand people and also help them figure out who they are. Thirdly, **flexibility** is an important skill that every entrepreneur should possess that will allow them to learn new things and flow with the tide while having an agile mind. Lastly, **time management** is essential to develop a discipline to stick to a timeline and help make better decisions and maximise productivity. As an entrepreneur, it entails being able to prioritise tasks and understand the ones that are vital to a business and the ones that can be postponed or should be delegated.

Mowgli mentoring proposes programmes that focus on supporting entrepreneurs and innovators, who work at a startup, that need to develop their entrepreneurial mindset, confidence and resilience, strengthen their leadership, build their acumen and effectively embed learning from business courses and skills training programmes. Their programmes are operating in the Middle East and the Northern African region as well as sub-Saharan Africa.

The **Tony Elumelu Foundation** appears as one of the leading champions of entrepreneurship in Africa. They launched their TEF entrepreneurship programme in 2015 which is the largest philanthropic initiative committed to empowering African entrepreneurs and entrepreneurship on the continent. The strength of the programme relies on its 360° approach based on 7 pillars (i.e., startup enterprise toolkit, online

mentoring, online resource library, meet-ups, TEF entrepreneurship forum, seed capital, TEF alumni network) that guarantee the success of participants and the sustainability of their projects. While it does not particularly focus on digital entrepreneurship, this programme offers a holistic high-hand experience in entrepreneurship.

Philtech Business Academy is another African actor which offers an entrepreneurship curriculum that comprises multiple only business-related short courses. At the end of each course, participants are awarded certificates of achievement. The length of courses goes from 6 to 8 weeks and they target innovative thinking, effective goal setting, managing business operations, or “*Your story is Your Best Marketing Tool*”. While this academy has the asset of accepting applicants that don’t have an academic degree and associating blended, problem-based and experiential learning, the price range goes from 450 euros to 1,100 euros depending on the modules. Any applicant also needs to be able to read and write English fairly well to access those courses while attending lectures in South Africa where the academy is operating.

Finally, the **Meltwater School of Technology (MEST)** is another leading actor in the West African entrepreneurial ecosystem tackling soft skills in both of their tracks. Through two training tracks, the training centre approaches the latter as a cross-disciplinary component of their training programmes. The MEST Africa Training Programme is a 12-month, full-time, fully sponsored programme in which the cohort completes a graduate-level course in software development, business, and communication, with a focus on practical implementation. The course culminates with an investor pitch and the opportunity to receive seed funding. The other training programme, ‘Pre-MEST’, is open to those who do not have a university degree and consists of a 12-week, full-time, tuition-free early-stage training programme designed to help participants acquire skills in software development, digital marketing, and social media marketing (including soft skills).

- **Open-source learning**

Online learning platforms that share short free videos are also very popular to learn various skills pertaining to digital entrepreneurship. For instance, **Young African Leaders Initiative** - *funded by the US Government* - offers online courses through 10-minute videos in English with French subtitles to introduce an entrepreneur to digital marketing. Another influential actor is **BPIFrance** which offers more than 400 free training courses in French through various supports such as e-learning modules, webinars, podcasts, interactive exercises, or interviews. The length can vary from 10 minutes for a video to more than 1h30 for webinars. Those courses have the advantage of being taught by experts and cover a wide array of topics linked to entrepreneurship and the ongoing digital transformation in businesses. Although BPIFrance is one of the rare structures to offer soft skills trainings, the variety of videos is quite limited. In the same vein, **Numa** offers e-learning courses in French through a 'remote academy' through 2-hour workshops mainly on entrepreneurship, leadership, productivity and management skills. While the content is delivered online by professionals and participants can enjoy peer-learning, it targets managers already within an organisation/company.

Somo Africa, based in Kenya, offers two free-of-charge programmes to enhance digital entrepreneurship. 'DigiSomo' consists of a set of digital business training tools that are available through WhatsApp, Youtube and a toll-free number and 'Buruka' consists of a 3-month training programme that teaches, among other things, business skills, storytelling, financial and digital literacy. The **British Council** Creative Economy E-Learning Programme for aspiring young entrepreneurs is focused on entrepreneurship and delivers a collection of free online courses to support African leaders to support them through their business journey via courses on creative and impact entrepreneurship, social innovation and factors to consider in pivoting enterprises to achieve social impact.

Lastly, **SheTrades** is an initiative that was established by the International trade Centre to address the barriers women face to access economic opportunities. It offers

e-learning courses and webinars for free that are delivered together with experts in logistics, global trade, management. For instance, one is able to follow courses such as “Logistics for E-commerce” or “How to shoot e-commerce photos”. However, most of the e-learning courses are only available in English.

This type of free learning opportunity might be interesting for autonomous learners that are living in countries with scarce resources regarding training centres. Nonetheless, not only it doesn’t give a structure for learners that need professional or educational support and nor does it connect you with a network of alumni to create new links and opportunities afterwards. Above all, one of the pitfalls of aiming at having as many participants as possible is that it does not include context-specific elements that could be crucial for the professional and personal development of future entrepreneurs.

Online learning options, whether one has to pay or not to access it, might be regarded as the most convenient ones when one is able to use a laptop or a phone and have access to the internet. However, most of the supply is operating in English and is only available in South Africa, Kenya, Nigeria, Côte d’Ivoire, Senegal, and Ghana. Nonetheless, they mostly offer a wide range of training to acquire skills going from development, digital marketing, soft skills, or data.

- **The pedagogical challenges of the 21st century to prepare future African champions of digital entrepreneurship**

A report recently published by Campus AFD³² underlines that the 21st century will require three key skills in order to thrive and adapt to a fast-paced environment. The first one concerns ***problem-solving skills*** that require curiosity, critical thinking, the ability to link several complex elements, the ability to develop imaginaries, empathy, adaptation and action. Francois Taddéi, a French researcher working on education and co-creator of the Learning Planet Institute (formerly the Center for Research and dInterdisciplinarity), emphasises the need to train young people and adults in a

³² Campus AFD. (2021). “Comprendre la dynamique des écosystèmes apprenants en Afrique”.

“researcher” approach, that is to say, one that allows them to develop abilities to solve complex and volatile problems by relying on methodologies that promote critical thinking, testing, iteration, trial-and-error and implementation.

The second one encompasses ***creativity-enhancing skills*** that can be expressed first through being able to project oneself into new imaginaries to deconstruct the representations and biases some people have about reality and thus imagine solutions by thinking outside the box and create new narratives that can allow us to generate new models of society (e.g., by using brainstorming, mind-mapping, body storm...). This approach is crucial to adopt when designing and operating the DES Academy since, *via* the Digital Innovation Hub (DIH), its purpose is also to vie for the development of an inclusive African digital ecosystem where women have the same opportunities as men in the ecosystem by taking advantage of digitalisation. This change of paradigm requires deconstructing the social norms and stereotypes that prevent women from entering and thriving in this field.

The third skill is ***cooperation***, underlining the ability to work in collective intelligence. It is a key element to navigate in a complex, global and multicultural world. Cooperation has developed through multidisciplinary approaches, but multidisciplinary alone is not enough; it is necessary to integrate a facilitated working process that will allow collective results to emerge. The ability to cooperate requires building up relational skills based on empathy, non-competition, peer-to-peer, and the systemic approach that allows working in multidisciplinary environments.

In a nutshell, those observations highlight the importance of promoting active learning throughout the training process. The participants of the DES Academy should be encouraged to engage with their peers and acquire not only soft skills but an agency and a mindset that will allow them to thrive in their environment. It is strategic to foster a learning ecosystem where the production and dissemination of knowledge are not so much conceived in classrooms and enclosed spaces but rather in open, mixed, playful and evolving spaces. Those spaces are capable of stimulating processes of experimentation while encouraging formal and informal encounters between

heterogeneous actors within the ecosystem. By using the human resources of local territories, it can stimulate innovation and be employed as a springboard to an enriching and stimulating learning experience.

- **4 strategic areas of digital entrepreneurship in Africa: Digital Trade, Climate Smart Agriculture, Smart Cities and Clean Tech**

Within the framework of the work package 4, which aims at creating a vibrant DIHs landscape in Africa, African DIHs (ADIH) will be created in four of the most rapidly developing topics that provide the biggest opportunities in Africa: Digital Trade, Climate Smart Agriculture, Smart Cities and Clean Tech. Those four areas have been pinpointed due to their strategic potential to improve and solidify Africa's digital evolution. The digitalisation of African SMEs in those sectors can drive innovation, economic growth and job creation and allow for greater interconnection of African markets with one another and with the rest of the world. The **Smart Africa initiative** has identified priority actions in response to digitalisation challenges and Smart Africa member states have selected topics with the objective to lead its implementation in their respective countries. Subsequently, the countries will develop blueprints for their selected topics, which other countries can then adopt. The AEDIB NET project, through those four topics, aligns its aims with the vision of Smart Africa. Focusing on those strategic areas can enhance both market and financial access for all, particularly in marginalised areas neglected by traditional financial institutions. Thus, The AEDIB NET will establish ADIHs in four domains, which have been pre-identified as digital innovation priority topics by the AEDIB NET partners – **Digital trade, Climate Smart Agriculture, Smart Cities and Clean Tech**. The creation of ADIHs in these domains will contribute to the Smart Africa Manifesto³³ and support the **African Union (AU) Digital Transformation Strategy** in order to strengthen national/regional digitalisation strategies. The ADIHs will be established in synergy with digital services and

³³ Smart Africa manifesto. (2013).

innovation projects that are implemented by individual countries and regional organisations. This will contribute to the sustainability of ADIHs.

Digitalisation will also impact the way that countries trade, enabling new means for trade, especially in services. **Digital Trade**, which includes e-commerce, will grow in scope and have a significant influence on traditional channels of international trade. It can help entrepreneurs connect with purchasers abroad for cross-border orders and provide the supportive services necessary to facilitate their exports, including simplified payments and logistics. In the time of the African e-commerce boom, digital trade can play a leading role by facilitating the buying, selling, and servicing of physical goods and services. The African Continental Free Trade Area (ACFTA), signed in 2018, aims at boosting intra-African trade and facilitating market access to the region for international e-commerce companies. Besides, Smart Africa has a clear and ambitious vision to transform Africa into a single digital market by 2030. One of the challenges will be to avoid the pitfalls of international trade that could undermine local industrial development but instead use digital trade as a positive force for the growth of national e-commerce companies. To achieve this, strengthening local and regional entrepreneurship will be crucial. Alongside soft skills, specific skills pertaining to digital trade include data analytics, artificial intelligence, online market research, strategies planning, and other intelligent data extraction tools.³⁴

Climate Smart Agriculture refers to a range of proven and innovative practices that can deliver triple wins: increase productivity, strengthen climate resilience and reduce agriculture's greenhouse gas emissions. It has increasingly become a topic of interest since African farming accounts for two-thirds of employment and that 65% of the world's uncultivated arable land is in Africa. Alongside the growing importance of digitalisation in Africa, opportunities and challenges have arisen (e.g., African smallholder farmers produce 80% of Africa's food supply, increasing prevalence of extreme weather events and climate change threatens 56% of crop production in Africa). Besides, only 13-35% of African farmers use digital solutions, of which only

³⁴ **United Nations Economic Commission for Africa. (2019).** "Digital Trade in Africa: implication for inclusion and Human Rights".

25% are women.³⁵ The main barriers to scaling digital solutions for agritech in Africa include a lack of digital infrastructure, regulatory frameworks and data policies that are needed to support innovators reaching the last mile. Digital literacy and human capacity to develop, access and utilise digital solutions for smart agriculture are still nascent. African champion countries regarding smart agriculture include Tunisia, Morocco, Uganda and Rwanda. In the same vein, Senegal is regarded as a mid-track country with growing tech services in this area.

Several initiatives have been launched such as “Foodie Smart Agrihub” which aims at developing a smart agriculture innovative hub where developers and researchers will be able to connect with users and to integrate different types of applications where farmers, developers and researchers will be able to cooperate and share common experiments. GIZ’s “Digital Agriculture Africa Program”, operating in Kenya, Nigeria and Ethiopia aims at enabling digital learning for small-scale farmers to overcome challenges (e.g., low access to information, markets and investment, low use of inputs, degraded soils and a lack of water management).

Many cities, irrespective of their size, are harnessing new technologies to improve the quality of life of their citizens. **Smart cities** are programmes meant to integrate available technologies at every level of urban management. It emphasises the role that technology plays in enhancing the delivery of services both in the public and private sector.³⁶ Its approach should not consist of tackling preconceived models in any given territory, but of developing, from a base of digital technologies, an inclusive and collaborative approach that enhances the cultural, economic and geographical specificities of each territory. Other projects are more concerned with injecting a digital component into a well-defined urban service, such as transport, energy or waste management.³⁷ The government of Rwanda has been proactive with a comprehensive smart city master plan that underlines how innovative tech can benefit city dwellers.

³⁵ African Development Bank. (2021). “Promoting Data-driven and Tech-enabled Agriculture in Africa”.

³⁶ Ministry of Information Communication Technology and Innovation. (2017). “Rwanda unveils smart cities blueprint as transform Africa summit gets underway”.

³⁷ Tactis. (2022). “Transition numérique: vers des villes plus durables en Afrique?”.

Innovations implemented in Kigali include “smart street lights, air-quality sensors and buses offering Wi-Fi connectivity and cashless payment facilities”.³⁸

The term **Cleantech** – short for “clean technology” – refers to companies and technologies that promote sustainable development. These new technologies offer competitive returns to investors while responding to current challenges in terms of ecology and combating global warming, such as the use of renewable energy, recycling methods or more generally eco-friendly practices. **Cleantech** has become an imperative as Africa is to face its climate challenges head-on, and there is a call to create continent-wide African cleantech startup ecosystems to substantially scale up innovative solutions to the continent’s climate challenges.³⁹ Cleantech’s activities are mainly targeted towards the energy, agriculture, waste treatment and mobility sectors.⁴⁰

- **Global trends and observations**

Looking at a snapshot of training centres in Africa unveils that a majority of trainings is available where we find most of the investments in startups. Among the 4.3 billion dollars raised by African startups in 2021 - more than double the amount of the previous year -, 81% of those funds were raised by South Africa, Kenya, Nigeria, and Egypt.⁴¹ Although other destinations on the continent are gaining momentum such as Senegal, Cameroon, and Tunisia, there is a correlation between the number of training opportunities in a specific country and the amount of funds raised.

Many African countries are in the process of transforming their economies from predominantly agricultural economic systems to a modern service economy. African countries, such as Rwanda, are driven by the digital economy boom in neighbouring countries, in particular FinTech in Kenya, and are developing a strategy of profound change that requires massive development of code schools and digital training. In French-speaking Africa, new generation schools for digital professions

³⁸ Toesland, F. (2021). “Realising the potential of smart cities in Africa”, *Raconteur*.

³⁹ Future Africa. “Africa’s Cleantech Imperative”.

⁴⁰ Big média. (2021). “C’est quoi la cleantech ?”.

⁴¹ Resilient Digital Africa. (2022). “A record year for African start-ups in 2021”.

inspired by French models are on the rise with schools such as **Ecole 42** and **SIMPLON**. These are being set up in many countries (e.g., Tunisia, Morocco, Senegal) on the same French model of free tuition with exactly the same methods based on challenges, peer-to-peer, self-learning and individualised self-learning.⁴²

Thus, in order to promote inclusive development in the African tech ecosystem and leave no one behind, public and private actors must be conscious to include training opportunities not only in the most attractive African countries but strive to include as many African countries as possible in the process. **Most formal training systems remain inaccessible to the poor and to workers in the informal economy due to the high cost of training, the level of formal education required to qualify and their concentration in urban areas.** It also should be stressed that most training opportunities are mostly in-person, hence isolating a substantial share of the population from digital literacies. It has also been shown that current training opportunities tend to focus on hard skills. Nonetheless, this section highlighted that although hard skills remain important to consolidate the employability of future digital entrepreneurs, soft skills should not be neglected. The latter has gained substantial momentum in the African digital ecosystem and the DES Academy should take advantage of it by filling the gaps in training. As stressed by a Trainer and Facilitator in Collective Intelligence:

“We also understood that a hard (say objective) skill can be transmitted and learned through a YouTube video. On the other hand, soft skills such as adaptability (and thus renewal of one’s skills), empathy, creativity, cooperation or empowerment are more subtle in their learning, requiring time, interaction and experience.”⁴³

⁴² Campus AFD. (2021). “Comprendre la dynamique des écosystèmes apprenants en Afrique”.

⁴³ Ibid.

At first glance, one could think that the digital entrepreneurship ecosystem is on the right track for equal access to tech entrepreneurship opportunities. However, the current ecosystem surrounding digital entrepreneurship remains male-dominated. Women have a harder time starting a venture. A shift in paradigm is needed to integrate and offer an improved representation of women and young women in digital entrepreneurship.⁴⁴

Unveiling the drivers of the gender digital entrepreneurship divide

Digital entrepreneurship is profoundly transforming the world of work and should be seen as a powerful tool for women's economic empowerment, where the latter is a cornerstone of gender equality and transformative economic growth. Nonetheless, initiatives aiming at bringing gender equality in a male-dominated sector (MDS) should avoid the pitfalls of implementing a one-size-fits-all approach. Africa, although having a mosaic of specific contexts and needs, is the region with the lower rate of internet penetration and the widest digital gender gap. Even if connectivity is crucial, it is not enough. Women entrepreneurs need tailored digital skills and digital entrepreneurship skills development and training to ensure their equal participation in the ecosystem. Hence, the digital gender divide needs to be tackled to ensure economic empowerment and equal participation of all women in the development of Africa.⁴⁵

Female-owned firms tend to be concentrated around trade and retail industries, especially in textile and footwear, pharmaceutical and perfume products, whereas male-owned enterprises dominate most manufacturing sectors as well as agriculture, forestry, and fishing. In Sub-Saharan Africa, male-owned firms have six times the capital investment of female-owned firms. Considering those obstacles

⁴⁴ Möbius, M., & Ulrich Wünsch, U. (2020). East Africa Digital Entrepreneurship Ecosystem in Higher Education.

⁴⁵ United Nations Economic Commission for Africa. (2019). "Digital Trade in Africa: implication for inclusion and Human Rights".

pertaining to funding or networking opportunities, female entrepreneurs may either decide to find a male business partner to increase their chances to dodge sectors that are less profitable and that require fewer capital inputs. It has to be highlighted that female entrepreneurs who cross over to male-dominated sectors perform better than female entrepreneurs in female-concentrated sectors (FCS) in all countries studied by a World Bank report.⁴⁶ They suffer from de facto discrimination which makes them structurally disadvantaged compared to men entrepreneurs. They are denied more loan applications than men. Essentially, causes that prevent women from starting their businesses are socio-cultural.⁴⁷

Thus, the DES Academy will aim at breaking those barriers and encourage women to digitise their business and/or to enter non-traditional or non-conventional sectors such as digital entrepreneurship and make them switch from necessity to opportunity entrepreneurship. **This way women would ‘do business’ (i.e., identify a good business idea or opportunity) rather than a necessity for money or inability to find wage work.**

Female entrepreneurship is on the rise globally and in some countries, women are as or more likely than men to own a business, yet they operate smaller businesses and concentrate in less profitable sectors than men. Women entrepreneurs often have to go over a lot of hurdles to access a loan for their businesses and access networks within sectors. **Social norms, unconscious biases, lack of exposure to male-dominated sectors, and time and capital constraints are just some of the factors holding women back from entering more profitable male-dominated sectors.** Helping women cross over to more profitable MDS could contribute to their business performance more generally, and may also make them as profitable as male entrepreneurs. And this will contribute to economic growth as skills are more efficiently distributed.⁴⁸ When asked why women tend to raise less money, one woman entrepreneur highlighted:

⁴⁶ **World Bank. (2022).** “Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector”.

⁴⁷ **Hadda, M. (2016).** “Female entrepreneurship in Tunisia: What are the obstacles and challenges?”.

⁴⁸ **World Bank. (2022).** “Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector”.

“If I were to pick one thing, it’s that our networks are not as good as men’s.”

One woman entrepreneur underlined the need to “*sell the dream*” and that unfortunately the two biggest mistakes that women frequently make are “*underselling themselves and not being confident with their financial numbers*”.⁴⁹

Common challenges include the lack of awareness and cultural stereotypes.

Often, under-represented populations are unaware of the importance of digital skills development or the career opportunities that exist for people with advanced digital skills.⁵⁰ Women may not be encouraged by their relatives and peers to develop their digital skills, and may even be discouraged from doing so. They typically shoulder a greater burden of care for children and elderly relatives and are more likely to locate their businesses in their homes to manage domestic responsibilities.⁵¹ Furthermore, training programmes that charge fees are less likely to attract and retain participants from less represented populations, including women. In addition, instructors should follow awareness training that equips them to give lectures or provide trainings that encourage young female entrepreneurs who might not be comfortable in a classroom dominated by male students. Other barriers include access to the internet where men remain 21% more likely to be online than women, rising to 52% in the world’s least developed countries - 49% in *sub-Saharan Africa*.⁵² Access to the internet and mobile ownership has increasingly become a necessary tool for entrepreneurship, especially regarding digital trade. Although the gender gap in mobile internet use continues to reduce (women’s access to mobile internet is increasing across low- and middle-income countries), female mobile owners use a narrower range of services than male owners. Reasons that prevent mobile users (who are aware of mobile internet) from using it include a lack of literacy and digital skills, among other things. Although mobile internet awareness is growing in developing countries, Sub-Saharan

⁴⁹ Parlmer, M. (2022). “Advice from female founders on starting your own venture”, *Financial Times*.

⁵⁰ ITU, (2018). “Digital Skills Toolkit”.

⁵¹ World Bank. (2022). “Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector”.

⁵² Iglesias, C. (2020). “The gender gap in internet access: using a women-centred method”, *Web Foundation*.

Africa, contrary to other regions in the world, is not improving its gender gap in mobile ownership and internet use (see Figure 1).⁵³ **Addressing the gender digital divide in Africa has become essential to ensure women's meaningful participation in the digital economy.**

Characteristics such as women's education, past exposure to male-dominated sectors through work experience or training, exposure to MDS through male relatives, mentors, or role models, and spousal support appear to be positively associated with crossing over in almost all countries where these factors were assessed. Other factors that are explored include *"sociodemographic and family-related characteristics such as age, marital status, household size, number of children, household assets, parental education, and parent's occupation; skills and training-related factors including education levels, self-efficacy and locus of control, cognitive abilities, and exposure to a male-dominated sector through previous work experience; factors associated with social capital, networks, and family support such as receiving support from a spouse or partner, having a role model or mentor, and inheriting the business."*⁵⁴

If current trends continue, apprenticeship rates are expected to stagnate in middle-income countries and decline by nearly a third in francophone African countries by 2030. Without rapid acceleration, it is projected that 20% of young people and 30% of adults in low-income countries will still be unable to read by 2030. While women alone account for 70% of the output of the rural economy in Africa, they are largely excluded from adult training. Thus, relying on human capital and designing training programmes adapted to the needs of the territories while taking into account their transitions and strengthening the capacity to act seems to be an essential lever for the development of these territories.

This gender inequality partly stems from education inequity. Of all regions, sub-Saharan Africa has the highest rates of education exclusion. Over one-fifth of children between the ages of about 6 and 11 are out of school, followed by one-third of

⁵³ GSMA. (2021). "Connected Women: The Mobile Gender Gap Report 2021".

⁵⁴ World Bank. (2022). "Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector".

youth between the ages of about 12 and 14.⁵⁵ In sub-Saharan Africa, 32.6 million girls of primary and lower secondary school age are out of school. This number rises to 52 million when taking into account girls of upper secondary school age, with millions more at risk as a result of the COVID-19 pandemic. For every 100 boys of primary school age, 123 girls are denied the right to education.⁵⁶

Recommendations to overcome those barriers can take different approaches. It can include safely connecting women to mentors and role models; providing early exposure to and training in male-dominated sectors; enhancing women's education and increasing access to capital and loans.⁵⁷ There is also the need to conduct activities to raise awareness and address stereotypes within safe spaces where women would be able to freely express their opinions and experiences. Pertaining to gender stereotypes and digital entrepreneurship, media and social media campaigns should be designed to debunk those ideas and stress the importance of ensuring women and girls develop their digital skills, and would also pinpoint career opportunities that go with such skills and are currently over-represented by men.⁵⁸ Additional initiatives, such as tackling discrimination and harassment, which wrongly harm their agency, could help women establish and scale up their ventures once they have crossed over.⁵⁹ Furthermore, having instructors that share the same background with the target population can be a great asset. Thus, not only does having women instructors mean that they have a shared reality with female students but also in some cultures, women can only receive instruction from other women. One of the most important success factors is to tailor curriculum and training methods. The goal is to make those elements more attractive and accessible to women that could find digital and entrepreneurship languages intimidating.⁶⁰

⁵⁵ UNESCO. (2022). "Education in Africa".

⁵⁶ CAMFED. "Why girls' education".

⁵⁷ World Bank. (2022). "Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector".

⁵⁸ ITU, (2018). "Digital Skills Toolkit".

⁵⁹ World Bank. (2022). "Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector".

⁶⁰ ITU. (2018). "Digital Skills Toolkit".

In regards to digital entrepreneurship, initiatives that safely link female entrepreneurs to mentors in male-dominated sectors (e.g., internships and mentorship programmes) should be promoted to open these sectors to women. Besides, training opportunities that improve women's socioemotional and cognitive skills, alongside their technical skills and access to information about MDS at early stages are other ways of encouraging women to cross over and fully take advantage of the digitalisation in Africa to develop their business.⁶¹

Highlights

- 4 key in-demand skills by startups: development, sales & marketing, data & analytics, operations
- Differences in most in-demand skills according to the language spoken, French respondents tend to emphasise the importance of soft skills
- Most training opportunities are in urban areas, need a substantial time commitment, are pricey and available in English and in African countries where there are the most opportunities and investments
- Africa is the continent with the most female entrepreneurs, although they tend to work in the lowest-paying sectors
- Most observed challenges faced by women entrepreneurs: lack of soft skills, gaps in entrepreneurial culture, management, problem-solving approach, hard to enter networks...

⁶¹ **World Bank. (2022).** "Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sector".

2. Looking at the national level: a mosaic of expertise and initiatives

This white paper will shed light on five African countries that will play a key role in the success of the DES Academy. **Tunisia, Rwanda and Senegal** have been selected among twelve countries for this case study through a mapping rating them according to specific criteria. The mapping notably looked at the maturity of the digital innovation ecosystem and the opportunities behind it. Besides, the approach was to have a representative sample of the different regions of Africa while focusing on countries that usually do not have the spotlight on them (e.g., Egypt, South Africa, Nigeria). Regarding **Uganda and Morocco**, those countries have been selected since ENABEL, which is in charge of testing the DES Academy through Summer Schools, is already well established in both countries with operating programs and substantial expertise in the entrepreneurial ecosystem.

Tunisia

Although Tunisia has often been regarded as one of the most advanced Arab countries regarding women's rights (e.g., establishment of the family code in 1956, amendment of the labour codes, the penal code etc), lack of support, sexism, the extent of skills to be acquired, family constraints and lack of legitimacy still dominate the world of female entrepreneurship in Tunisia.⁶² Nonetheless, the Tunisian ecosystem is a place where women are visible. **They manage 58% of startup support organisations, they represent 55% of coworkers in coworking spaces, and have founded or co-founded more than 32% of labelled startups.**⁶³

The government works closely with the entrepreneurs and has established the Tunisian Start-Up Act which has been in place since 2018. This legislation provides an

⁶² Hadda, M. (2016). "Female entrepreneurship in Tunisia: What are the obstacles and challenges?".

⁶³ Internal expertise of Digital Africa and EdTech.

incentive framework for entrepreneurs, startups, and investors. These concerted measures are, among others, the startup grant which allows founders and shareholders to receive an allowance for one year of an amount between 300€ and 1,500€, the exemption from social security contribution, or the exemption from capital gain tax.⁶⁴

- Women entrepreneurship

The Prime Minister Najla Bounded launched in March 2022 the national “**Raidet**” programme for women’s entrepreneurship and investment. It takes over another programme launched in 2017 called “Raïda” seeking to decrease the number of unemployed women. The latter programme has created 4,868 projects for women, generating approximately 6,216 direct jobs, with investments of around 42 million dinars. The new project “**Raidet**”, is supposed to create 3,000 projects with investments amounting to 50 million dinars at the rate of 600 projects per year over the next five years. It will also grant a new generation of loans ranging from 100 to 300 thousand dinars.⁶⁵

Looking more specifically at already existing projects aiming at women’s entrepreneurship, **Oxfam** launched a 4-year programme that began in December 2018 aiming at strengthening technical and life skills that enable young people to actively engage in society. The programme includes vocational training and development of professional skills as well as training of trainers to become employment counsellors and deliver soft and technical skills. It also includes soft and job-oriented skills training, online self-development and employment skills courses⁶⁶

This train-the-trainer approach has also been adopted by the International Trade Centre (ITC) through its “**ecomConnect**” programme in Tunisia that aims at using e-commerce as a way to alleviate some of the constraints faced by women entrepreneurs who own small businesses. ITC trains advisors who, in turn, train

⁶⁴ Internal expertise of Digital Africa and EdTech.

⁶⁵ **Agence Tunis Afrique Presse. (2022).** “National ‘Raïdet’ programme for women’s entrepreneurship and investment launched”.

⁶⁶ **Opportunities 4 MENAYOUTH.** “Youth Participation and Employment (YPE)”.

women-owned businesses through group training and advise them individually through one-on-one coaching sessions. This programme addresses the knowledge and skills gap by building capacity and providing online tools.⁶⁷

UNDP Tunisia is also operating the project “**Entrepreneurship for Development**” that supports women’s access to entrepreneurship in the southern governorates with the aim to reduce gender inequalities and structural obstacles to women’s agency through various training in management, digital marketing, e-commerce and communication.⁶⁸

Lastly, the Women Entrepreneurs Finance Initiative (We-Fi) proposes the programme “**MENA E-Commerce and Women-led SMEs (WSMEs)**” (2018-2023) that provides WSMEs with access to markets through e-commerce platforms and to improve e-commerce-related business environments and infrastructure for women entrepreneurs. The programme also focuses on increasing access to training, networks, and mentors and working with governments to improve the business environment for WSMEs. This project is also implemented in Morocco. We-Fi, in partnership with the International Finance Corporation (IFC), implemented in 2019 the “**FLat6Labs Tunis**” to support provision of seed capital to early-stage high-impact startups and ensure that WSMEs are a dedicated focus of the fund.⁶⁹

Morocco

Morocco is currently facing major transitional challenges, including youth employment, the quality and access to education, and climate change and its impact on agriculture. Africa’s fifth-largest power after South Africa, Nigeria, Egypt, and Algeria, Morocco has enjoyed a decade of economic performance with exporting where it is one of the world leaders on some goods exportation such as agriculture (e.g., olive oil, citrus fruits, tomatoes). Morocco’s main challenges today lie in education and professional

⁶⁷ **International Trade Centre. (2021).** “An e-commerce turning point for women-led businesses in Tunisia”.

⁶⁸ **UNDP Tunisie. (2022).** “Women entrepreneurs in southern Tunisia: Sana’s journey”.

⁶⁹ **Women entrepreneurs Finance Initiative. (2021).** “Annual report: Pivoting toward a resilient future”.

integration, especially among young adults, and in climate change management, as Morocco was the victim of the major droughts of 2015.

The Moroccan population is young: nearly 28% of the population is under 15 years old. Their integration into society is a major challenge: **of the 25-35 age group, only one in two Moroccan has a job, which is often informal and precarious.**

From an economic perspective, the informal economy is very important, representing nearly 15 billion euros, or 20% of the Moroccan GDP excluding agriculture, and involves about 2.4 million people. The unemployment rate was 10.15% in 2020⁷⁰, but if we look at gender-disaggregated data, the rates are increasing considerably among women and young people and in urban areas, against a backdrop of a persistent decline in the activity rate, which has fallen below 46%.

- Development Finance Institutions

Looking at institutional partners and development finance institutions (DFI) operating in the country, the **French Development Agency** (AFD), which has been a partner of the Kingdom since 1992, is currently supporting 44 projects for a total of EUR 5.6 billion committed. AFD's efforts are largely focused on the issue of the vocational integration of young people aged 25 to 35 with the signing of a New Education Strategy 2015-2030 with the Moroccan government, and support for the construction of 25 vocational training centres and an employment and skills development programme. **GIZ**, the German DFI, is focusing on adult education through vocational training, Technical and Vocational Educational Training (TVET), based on the strengthening of partnerships between schools and companies. Through the **British Council**, the UK's adult education cooperation is mainly part of the global Skills for Employability programme and the TVET training actions. **USAID** collaborates with the Moroccan Ministry of Education for the continuous professional development of teachers and deploys youth and social inclusion programmes in remote areas of Morocco with a focus on vocational training for young people. The partnership with the **World Bank** has three objectives: adult education, job creation in the private sector (including youth

⁷⁰ **Macro Trends.** "Morocco Unemployment Rate 1991-2022".

employability), strengthening human capital (quality and efficiency of education and health systems), and strengthening social protection for poor and vulnerable populations.

- Education

Morocco is at the same time very rich in terms of training offers and initiatives, with an abundance of private and public higher education, a hundred or so technical training centres in the country, and at the same time encounter major difficulties in terms of access, equity, quality of teaching and, *in fine*, the baggage of operational skills at the end of the courses. Yet demand is very high. The volume of young people to be trained is not without consequences and has an impact on the quality of training (i.e., numbers of students in the classrooms, lack of trained teachers, use of temporary staff with little experience).

There is a divide between the public and private systems, with the middle and upper classes in urban areas favouring public schools and universities. In rural areas, the problem of education is linked to difficult conditions (one class for all primary schools, classrooms without electricity, poorly adapted textbooks), absenteeism of pupils and also of teachers parachuted into isolated rural areas. It also has to be highlighted that young girls are dropping out of school in large numbers. This public/private divide can also be found at the university level, with 14 public universities alongside as many private universities and colleges recognised by the State, financed by investment funds, rather English-speaking, weaving strategic partnerships with Anglo-Saxon universities, with a very good level of education and a strong scholarship system offered to young Moroccans.

Vocational training is structured by the state through the Office for Vocational Training and Employment (OFPT). With more than a hundred buildings with integrated workshops throughout Morocco, the OFPT delivers training courses leading to a diploma for 1 to 3 years in technical trades. The institution covers thousands of teachers. Access is free and allows young adults to enter a formal economic sector that the government is trying to support. The OFPT can also organise training

according to the very targeted and specific development needs of medium or large companies (car manufacturers, construction of a dam). Although the institution seems to be quite powerful because of its strike force (thousands of teachers, financial and geographical accessibility), the offers may not be fully adapted to the reality of labour market needs.

- Women entrepreneurship

In April 2022, the government signed an agreement to boost gender equality, strengthen women's position in social and economic sectors, as well as empowering them through creating more jobs with incomes equal to their male counterparts. Actions include strengthening women's know-how on entrepreneurship to develop their cooperatives and provide them with the necessary financing funds to ensure the sustainability of their entrepreneurship projects.⁷¹

In the same vein, the main programme operating in Morocco to further women entrepreneurship is “**Women in Business**”. Operated by the European Bank for Reconstruction and Development (EBRD) and the European Union (EU), the programme promotes women's entrepreneurship and participation in business, combining a wide range of activities to enable small and medium-sized enterprises (SMEs) led by women to access the finance and know-how they need to grow. This programme is intended exclusively for women professionals operating in a liberal setting and for women managers of Moroccan small and medium-sized enterprises with fewer than 250 employees, small and medium-sized enterprises or Moroccan SMEs with a turnover not exceeding 550 million Dirhams. The programme's approach is based on improving access to finance and skills for women professionals and business leaders. (see Appendices).

There is also the **Association des femmes chefs d'entreprises du Maroc** (AFEM), founded in 2000, that aims at promoting female entrepreneurship, managing, guiding and supporting female entrepreneurs in their business development and in their competitiveness. They also encourage the creation of businesses by women in

⁷¹ Latrech, O. (2022). “Morocco to Strengthen Women's Leadership, Economic Inclusion”, *Morocco World News*.

Morocco while promoting the image of female entrepreneurs in Morocco and abroad. Lastly, they represent women business leaders at decision-making levels as a unit group in relation to power networks.

Senegal

The country, just like other countries on the continent, is facing transitional challenges that include; demographic pressure, climate change, informal economy and poverty, eclectic and unequal trainings offered according to territories and disciplinary fields.

Senegal is the second-largest economy in French-speaking West Africa and has experienced strong growth since 2014. The country benefits from a number of assets: its democratic tradition, its geographical position, a young population, vast agricultural and mining potential and the dynamism of its diaspora. But it has to deal with an informal economy that deprives the state of significant resources, demographic pressure that increases poverty and a young population in need of jobs. Not to mention the environmental emergency: with its 531 kilometres of coastline, Senegal is particularly vulnerable to climate change.

Senegal is one of the most developed tech ecosystems in Francophone West Africa, along with Côte d'Ivoire. This was made possible with numerous investments from the private and public sectors into skill development (technical and vocational training are a government's priority), innovation funding as well as programmes such as accelerators and incubators. In December 2019, Senegal was the second African country to pass the start-up act, recently ratified by President Macky Sall. As with every start-up act, it gives start-ups conditions to get access to trainings, tax incentives and funds but it also concerns the Senegalese diaspora who own at least 50% of the start-up. The Senegalese Startup Act among other things seeks to promote innovation in the country's economy towards achieving the country's "Digital Senegal 2025" strategy.⁷²

⁷² Internal expertise of Digital Africa and EdTech.

- Development Finance Institutions

AFD is a long-standing partner of Senegal and uses its full range of financial instruments to support local economic and social development actors (the State, public companies, the private and financial sector, Non-Governmental Organisations (NGOs)) to promote a development model that creates jobs, promotes sustainable infrastructure and respects the environment. In particular, AFD seeks to strengthen vocational training so that it is in line with market needs. It has therefore involved the private sector in the governance of nine vocational training centres, reformed the training financing fund, and financed the construction of two higher vocational education institutes dedicated to agricultural trades.

GIZ supports the fight against the root causes of migration and is committed to creating new perspectives for the future and staying in Senegal. The **Being Successful in Senegal project**, which focuses on renewable energy, is helping to boost future prospects and job opportunities for young people. Senegalese universities and colleges are being supported to improve the employment opportunities of graduates in the field of renewable energy by making their curricula and courses more practice-oriented.

USAID's primary objectives in Senegal are to improve living conditions and job creation by improving access to education. USAID supports leadership training for young adults and works with the private sector to improve leadership training and connect young African leaders aged 18-35 to each other and the world. This partnership has resulted in the creation of a Regional Leadership Centre for Young African Leaders (YALI), based in Dakar, one of four such centres on the continent (along with Pretoria, Accra, Nairobi). The centre focuses on developing a network of leaders in public management entrepreneurship and civic engagement across Francophone Africa.

In Senegal, the **World Bank's** priorities include: accelerating growth, wealth creation, human development, shared growth, and rural-urban synergies. Recent programmes in Senegal include the Youth Employability and Informal Learning project, which aims

to strengthen the apprenticeship system and improve the employability of selected apprentices, and the Skills for Employment and Competitiveness programme, which focuses on strengthening TVET.

- Education

Today, despite the progress made over the years (via performance contracts or the organisation of a national consultation on the future of higher education), Senegal's education system is still faced with major challenges, in particular the protracted need to increase the quality and supply of training to meet the challenge of population growth and student numbers. The demographic growth in Senegal accentuates the challenge of receiving and maintaining students in optimal conditions for their success. Besides, there is the need to adapt the supply and methods of training to the needs of economic and social development. In particular, it is a question of strengthening vocational training so that it is in line with the needs of the market and to better accompany the graduate towards access to professional life.

- Women entrepreneurship

To achieve the objectives set around job creation and micro, small and medium-sized companies (MSMEs), the AFD, the government and the African development bank have set up the **Project for supporting and promoting entrepreneurial initiatives** (Pavie). The objective of Pavie is to support the creation of jobs for young people and women through the promotion of entrepreneurship and the densification of the economic fabric of MSMEs by offering technical and financial support for targeted entrepreneurial initiatives. The programme Pavie will eventually finance more than 14,000 entrepreneurial initiatives to create about 154,000 jobs, 60% of which will be for women. It will also help to improve the technical capabilities of beneficiaries through the training and capacity-building of 27,000 entrepreneurs, more than half of whom are women. Promoting innovation and digital technologies is also an important component of Pavie. In fact, 2,200 companies will be supported with the digital transformation, in addition to the formalisation of all the companies already supported by the DER/FJ. In

addition, the financing mechanism will be strengthened by a geo-localised investment tracking system.⁷³

Another programme called **Pareel** also has women entrepreneurship as a core objective. This project is an initiative of the World Bank to improve women's access to public and private markets. Faced with the many barriers to women's ability to win contracts, the programme aims to strengthen the competitiveness of small and medium-sized enterprises (SMEs) in Senegal run by women. To this end, the project is based on a combination of support in technical skills, leadership skills, coaching, mentoring by successful entrepreneurs and networking. The programme is also a lever to benefit from other support offered by the Senegalese ecosystem, particularly on the financial aspects⁷⁴ (see Appendices).

Rwanda

Through forced digitisation and the establishment of the conditions necessary for the development of entrepreneurs, Rwanda, despite its modest size and its imposing neighbours, is establishing itself as an entrepreneurship and innovation hub in Africa. The government has set up strong organisations such as Rwanda Finance Limited or the Rwanda Development Board, which work on its attractiveness with, among others, the set up of Kigali Innovation City of the Angaza Capital fund or the reinforcement of educational work with the ambition to equip by 2024 82% of primary and secondary schools in the country with electricity and internet in order to deepen digital acculturation.⁷⁵

It has been highlighted that Rwanda particularly needs to enhance its pre-existing strong women networks and knowledge in the country and use it as a springboard to set the example for other countries in the region. It can also be noted that the country should take advantage of its political stability and social

⁷³ Délégation Générale à l'entrepreneuriat rapide des femmes et des jeunes. (2022). "Le Projet d'Appui et de Valorisation des Initiatives Entrepreneuriales des Femmes et des Jeunes (PAVIE)".

⁷⁴ VC4A. (2021). "Pareel - Accompagner les femmes dirigeantes de PME à accéder aux marchés publics et privés".

⁷⁵ Internal expertise of Digital Africa and EdTech.

reconciliation to broadcast national success stories pertaining to digital entrepreneurship within and outside its borders. Lastly, the university ecosystem should focus on developing high-quality interventions and content in its curriculum to support surging entrepreneurship infrastructures.⁷⁶

The government implemented the campaign **eRwanda** that aimed at enhancing digital literacy in ICT skills. The project supports four components, which focus on the use of technology as an enabler to growth and development. The **eRwanda** project trained more than 2,000 citizens and focused on having a minimum of 30% female students in each of the classes it offered to young citizens of Rwanda to obtain the ICT driving licence.⁷⁷ Another programme, “**Digital Ambassador**” (2017-2024), aims at increasing the digital literacy of five million Rwandan citizens, and their resulting access to and use of online systems and services. The programme, funded by the government and operated by the GIZ, is based on the model of recruiting young women and men with entrepreneurship ambition to provide digital literacy training and act as catalysts of change in their communities.⁷⁸

- Women entrepreneurship

The US Embassy has launched a programme called “**Academy for Women Entrepreneurs**” (AWE) to support women entrepreneurs globally. Through the programme, Rwanda women entrepreneurs aged 18-35 can receive personalised business mentorship, as well as professional knowledge, tools and networks, in order to turn their ideas into businesses. The curriculum teaches women to create their own business plans, understand how to raise capital, and connect with networks of successful business owners. AWE is aimed at women entrepreneurs with six to twelve months of experience in their business projects, and who can commit to participate in all the weekly sessions of the programme for eight months.⁷⁹ Through this Academy for Women Entrepreneurs, participants learn core business skills, then get together as a

⁷⁶ Möbius, M., & Ulrich Wunsch, U. (2020). East Africa Digital Entrepreneurship Ecosystem in Higher Education.

⁷⁷ World Bank. “eRwanda Project”.

⁷⁸ Ministry of Information Communication Technology and Innovation. “Digital Ambassador Programme”.

⁷⁹ U.S. Embassy in Rwanda. “Academy for Women Entrepreneurs”.

class to discuss the material with experienced implementers, local mentors, and U.S. Exchange Alumni. Partnerships with local NGOs, universities, and chambers of commerce offer women the opportunity to amplify their newly learned business skills and network with other businesspeople through speed mentoring, pitch competitions, and entrepreneurship fairs.⁸⁰

The GIZ is operating a programme called **Digital Ambassadors Programme** (DAP) that is funded by the government of Rwanda and aims at increasing the digital literacy of five million Rwandan citizens, and their resulting access and use of online systems and services. Although it does not specifically target women, it encourages the involvement of both men and women (see Appendices).

Regarding existing networks in Rwanda, the **African Women Entrepreneurship Program** (AWEP) is an outreach, education, and engagement initiative that targets African women entrepreneurs to promote business growth, increase trade both regionally and to U.S. markets through the African Growth and Opportunity Act (AGOA) and other trade initiatives. Operating in different African countries, the chapter in Rwanda is one of the women business associations that has been promoting women entrepreneurship and the exportation of their products. Founded in December 2012, AWEP Rwanda has been conducting training on export market readiness, entrepreneurship and engaging in trade fairs, while partnering with other public and private institutions to promote women-owned businesses.⁸¹

Uganda

It has been highlighted that the education ecosystem in Uganda should increase investments in special areas of the creative industries for digital solutions (e.g., music, fashion, media, digital agencies) while supporting pitch competitions without regard to their size in order to stimulate an interest in entrepreneurship among students. Lastly,

⁸⁰ U.S. Bureau of Educational and Cultural Affairs. “The Academy for Women Entrepreneurs (AWE)”.

⁸¹ Women 4 Intra Africa Trade. “African Women’s Entrepreneurship Program”.

substantive support is needed to support and scale-up innovation centres at universities that have started a process of professionalisation.⁸²

Kampala's ecosystem includes a wide variety of actors that stimulate the entrepreneurial ecosystem including innovation labs, business plan competitions, incubators, and accelerators. Although many opportunities can be identified, the lack of maturity of the ecosystem means that only limited services can be provided to a small part of entrepreneurs in the country. Tech hubs in the capital facilitate innovation hubs focusing on specific subsectors of digital technology and host occasional startup competitions. Nonetheless, those tech hubs tend to be currently used more as a working space than a space to facilitate promising technology-focused startups.⁸³

The country's entrepreneurial ecosystem enjoys strengths such as a large domestic demand for products and services where the market is filled with untapped opportunities and remains a fertile ground for entrepreneurship. Supportive family, cultural beliefs, and social/informal networks were also identified as key for starting and growing a venture. Lastly, Uganda enjoys relatively straightforward processes to start a business. On the other hand, the main weaknesses to a thriving entrepreneurial ecosystem include dissuasive tax rate and tax administration, corruption, as well as trust.⁸⁴

- Education

Some universities, most of them being in the capital, Kampala, offer trainings and degrees in entrepreneurship. However, the curriculum tends to be very theoretical and does not take advantage of using locally relevant business case studies. There is also a lack of affordable and accessible management trainings offered through accelerators and incubators. Sociocultural factors are also playing a key role in the entrepreneurship ecosystem. The culture of informality sustains management practices

⁸² Möbius, M., & Ulrich Wünsch, U. (2020). East Africa Digital Entrepreneurship Ecosystem in Higher Education.

⁸³ Aspen Network of Development Entrepreneurs. (2018). "UGANDA: Entrepreneurial ecosystem initiative: phase I".

⁸⁴ Ibid

that hamper scalability. For instance, a family member is more likely to be employed rather than a skilled applicant. Hence, many young entrepreneurs are more likely to rely on their parents for business guidance rather than successful entrepreneurs who have made their way to the top in the formal system.⁸⁵

- Women entrepreneurship

Looking at women entrepreneurship, the **Uganda Women Entrepreneurship Programme** (UWEP) aims at empowering women by improving women's access to financial services and boost entrepreneurial economic growth. The programme addresses the challenges women face in setting up economically viable businesses, including limited access to affordable credit, limited technical knowledge and skills for business development, limited access to markets and information on business opportunities. The programme aims at increasing women's participation in enterprise development, increasing their incomes, livelihood security and overall quality of life. It includes improving the skills of women to open and run their business. Beneficiary groups receive an interest-free loan based on a revolving fund to develop their businesses. The programme also offers basic training to strengthen beneficiary groups in accounting, team building, business planning and implementation, entrepreneurship/business skills and group dynamics.⁸⁶

⁸⁵ Ibid

⁸⁶ **Women Connect.** "Programme ougandais d'entreprenariat féminin (UWEP)".

Highlights

- Countries under focus do not have the same level of maturity regarding digital entrepreneurship
- Most of the programmes lack national and local contexts in their curriculum
- States' programmes are increasingly focusing on women entrepreneurship which underline a policy move towards more inclusivity in the digital ecosystem
- Most of training opportunities are for women entrepreneurs that already acquired digital literacy

Based on the studies analysed above in this white paper and the broader literature, one sees that most training opportunities tend to require substantial time commitment (approximately 4-6 months), to be expensive, in urban areas, in English, to sideline soft skills and fall short in tackling women entrepreneurs' needs accordingly. As noted throughout this white paper, an array of factors ultimately drive gender inequality in digital entrepreneurship: (a) support, networks, and exposure to the field; (b) skills and training; and (c) access to loans and financing opportunities.

Although the section above highlighted that soft skills remain very important according to start-up founders and entrepreneurs, few training programmes are available on the subject. The digital training environment can be very hard to get into for people that are not able to allocate the time and money that the ecosystem currently requires. There is a need to have a short training programme that will be able to target women by breaking their psychological glass barrier, without requiring previous qualifications and by offering a snapshot of available opportunities. From all the research done for this white paper, no such short training programme, available in French and English, free of cost, that aims at introducing women to digital skills and digital entrepreneurship while offering them the opportunity to strengthen their soft skills has been found.



Building on these observations, the DES Academy will propose a more flexible and shorter curriculum to support women in entering the digital entrepreneurship ecosystem. Within the requirement of designing a 3-week academy, each week will focus on a different aspect that has been identified as essential namely (a) debunking gender biases around digital skills (b) enhancing women's digital skills through hard skills and a snapshot of careers in this ecosystem (c) providing women with role models and soft skills to strengthen their network and profile.

3. Unleashing the potential of women entrepreneurs: an Academy to enhance their agency and drive big change

The first and second sections of this white paper unearthed that most digital and skills training programmes are either too expensive or not tailored to the needs of women, specifically for the target group of the DES academy represented by women who lack access to basic digital literacy. **Thus, the DES Academy will aim at including women in this ecosystem and make them aware that opportunities are waiting for them in this sector.** The benchmark of the available training opportunities and of the needs of startups highlighted that there is a need to integrate soft skills alongside entrepreneurial/business skills development into training programmes. **To succeed in the digital economy, women need basic digital skills related to the effective use of technology, as well as soft skills necessary to ensure collaborative and effective work.** Entrepreneurial/business skills are likewise important, as graduates with the right knowledge and entrepreneurial mindset can find opportunities to start a new business. However, there are some challenges ahead.

Challenges

One of the risks is that this DES Academy is not successfully assimilated into the DIH's activities and ends up being sidelined. To avoid this outcome, this white paper has relied on data and expertise linked to ground realities and strives to best answer the needs of African women who want to pursue a career in digital entrepreneurship. This academy shall be adapted and shaped according to national and regional contexts to meet the ecosystem's characteristics and offer a curriculum that matches the needs of the national job market. Conversations with DIHs representatives highlighted that countries, where the DES Academy will be implemented, do not have the same maturity while national contexts vary. It has to be highlighted that one of the main challenges for DIHs will also be the commitment and availability of participants. To

increase those chances, a pick-and-choose approach is suggested and will be further explained later in this section.

While the non-continuous 3-week length should allow for more flexibility and realistic time-commitment from future participants, its character is inherently introductory, and this white paper underlines the necessity to adjust potential unrealistic expectations : this is not a revolutionary 3-week experience turning each participant into a data scientist or full-stack developer. As mentioned in the benchmark of training opportunities, most of the training available pertaining to digital entrepreneurship last between 4 and 6 months. Thus, one shall bear in mind that **the purpose of this academy is to enable the acculturation of women to digital entrepreneurship through digital literacy, remove barriers that prevent them from accessing opportunities in this field, and promote the opportunities revolving around it.** Nonetheless, one has to be careful to not throw the baby out with the bathwater. The observations and arguments exposed in the previous sections were not influenced by this required 3-week format but tried to capture the overall challenges faced by young African people and startups in the digital ecosystem. Thus, although the following section will focus on a three-week academy, the previous sections will be useful to any stakeholders who try to break barriers for African women entrepreneurs and allow them to access professional opportunities in this ecosystem.

Train the trainers approach

Exchanges with DIHs representatives underlined that there was a need to target women living in semi-rural areas and that trust was an essential component for the buy-in of participants in the DES Academy. Thus, in order to reach the target group, being women living in semi-rural neighbourhoods or on the outskirts of urban centres, DIHs will have to rely on intermediaries. Not only do those intermediaries know their audience and the needs of semi-rural areas but they also have a strong legitimacy as they know the women that interact with them. Thus, trust is embodied by those intermediaries and will greatly contribute to the willingness of women to take part

in this academy. Intermediaries can be either formal or informal, including a grassroots NGO or a network of women entrepreneurs. It needs to be structures revolving around women empowerment with a physical space, IT materials, and an appetite for digital entrepreneurship. This white paper calls for DIHs to adopt an early adopters approach by selecting pilot structures to implement the DES Academy. While being empowered, they will create a bridge between the DIHs and the participants by organising the logistics such as in-person modules with trainers/coaches, how the schedules are organised, etc... On the other side, the intermediaries will be able to enjoy this partnership by enriching their knowledge and services towards their communities.

Two types of intermediaries can be identified according to the maturity of the DIHs:

Primary intermediary

- The intermediary is able to select women beneficiaries
- They lend their physical spaces to host trainings on-site
- They are acting as a bridge between the beneficiaries and the DIHs

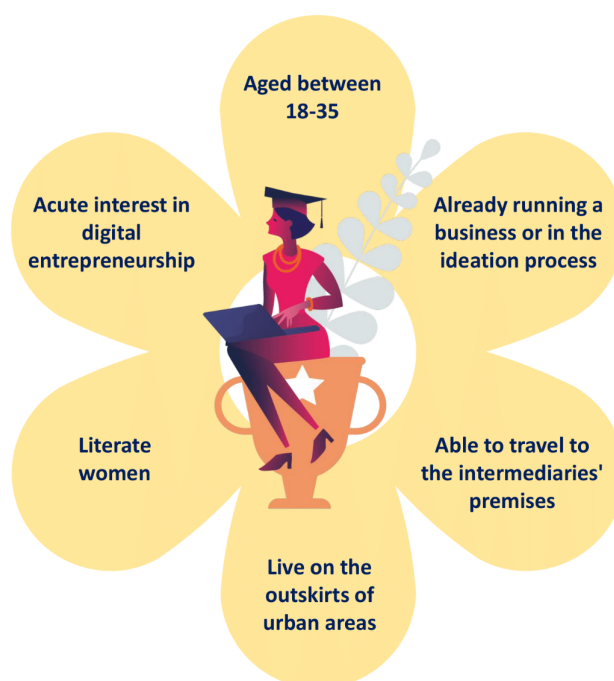
Advanced intermediary

- The intermediary is able to select women beneficiaries
- They lend their physical spaces to host trainings on-site
- They are acting as a bridge between the beneficiaries and the DIHs
- **DIHs train the intermediaries that would eventually directly teach the beneficiaries**
- **Intermediaries do not need to be experts in digital entrepreneurship but will acquire enough expertise to eventually not substantially depend on the DIHs to deliver the DES Academy**

Pedagogical approach

- Start from women: they should be the centre of every decision regarding the academy.
- Use the concept of gamification throughout the academy with games and interactions in order to motivate and engage users.
- Adopt a simple methodology with user-friendly pedagogical instruments, languages and tools.
- DIHs should take into consideration that the pedagogical approach might vary according to the age of participants. An 18-year-old woman might need a different teaching approach than a 35-year-old woman.
- Agility to ensure that the format fits specific needs of the women trained

Profile of participants



Hence, participants of the DES Academy should be **literate women, living in a rural area that is more or less close to the urban environment, aged between 18 and 35 and that already has a business or a business idea which requires digital literacy**. It has been stressed that women living in urban areas are currently

over-represented in most training opportunities on entrepreneurship. Participants in the programme should also possess a cell phone and an internet connection at home to follow training content during online sessions. If they do not possess a laptop or a phone to follow some modules at home, the intermediaries should be able to provide them with an internet connection and materials to follow online modules. **The participants should also be able to go to the intermediaries' physical spaces, offices or physical spaces to take part in the training programme when needed.** Apart from those criteria, the programme is open to women who already have a business or have an idea linked to digital entrepreneurship that they want to explore. Above all, the DES Academy strives to open new opportunities for women entrepreneurs who think that they don't belong in digital entrepreneurship.

The 3H approach

The DES Academy will be guided by the 3H approach: heart, head, and hand.

This model was developed through understanding sustainable education, transformative learning theories and experiential learning. It is the core relationship between the heart, head and hand while learning and it refers to the three learning domains:

- **Affective** (relating to moods, feeling, inner drive and attitudes)
- **Cognitive** (skills)
- **Psychomotor** (relating to action and how you transform your activity with the new skills acquired)

To involve the **heart**, participants need to be given something to feel, they are nudged to bring in their feelings and reflect on their experiences. Pertaining to the **head**, learners need to be given something to think about, they shall explore available resources and build on primarily their literacy skills, notably through assignments, internet research, and reading. To involve the **hand**, they need to be given something to do to apply their knowledge. It is important to give equal time and importance to the three components (heart, head and hand) so that participants can really challenge

themselves and think out of the box while being proactive in the learning process, not just passive consumers. It is necessary to know how participants feel about working in groups and how they process their feelings. One variable that should be tackled is the formation of trainers before the beginning of the DES Academy. Instructors should follow a training on how to lead a classroom with only women and know how to create a safe environment throughout the training both online and on-site, so that participants feel safe enough to engage with the activities and participate in conversations freely.

Overall structure of the DES Academy

The prerequisite was to propose a design for a 3 week program and to focus the learning on digital acculturation. The target was really to ease access to women to the activities of the hubs supported by AEDIB program.

Looking at the format of this training opportunity, it is important to ensure that the modules followed by women answer their needs. Following the pick-and-choose approach, **hubs as well as intermediaries will be able to craft their “own” academy by either following all of the 3-week training, 2 weeks out of the three, only one, or specific modules.** Beneficiaries should not be compelled to follow all of the DES Academy if some modules do not answer their needs.

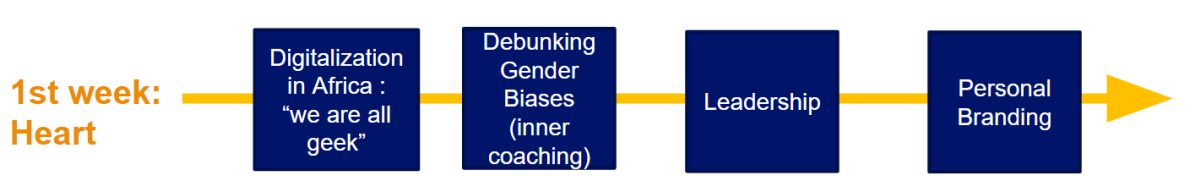
Reflecting on a workshop held with DIHs representatives, this white paper suggests having between 2 or 3 hours per day of training to be sure that women are able to fully engage with the Academy. DIHs representatives also highlighted that a kick-off session would be necessary to be sure that all members of the community are able to exchange on the overall aims and objectives of the DES Academy (it should particularly include male relatives and male community leaders to ensure that).

First week: Heart

Specific Learning Objectives

- Understand the challenges around digitalisation in Africa and how digital tools are around us everyday
- Debunking gender biases around digital entrepreneurship
- Strengthen the mindset of participants around digital tools and digital entrepreneurship
- Understand the basics of leadership and self-confidence
- Be able to speak in public and entice women in their communities to empower themselves
- Set a powerful visual identity for themselves

Structure



Content

The first week, focusing on the heart, consists of an introduction to digitalisation in Africa and will aim at debunking gender biases around digital entrepreneurship. The target of the first week will be on strengthening the mindset of participants and help them acquire relevant soft skills. While some of the participants might already start with solid confidence in their abilities, many of them will have to work on their lack of confidence in their competencies and reluctance to embark on careers and take on roles that are conventionally perceived to be more masculine and competitive. Thus, the first week will consist of a snapshot of the ongoing digital revolution in Africa alongside the main challenges and opportunities in the tech ecosystem on the continent.

The curriculum should emphasise how this digital revolution is impacting the concept of ‘work’ and how it will indubitably transform and take some traditional jobs out of circulation. It will be important to highlight how the African tech ecosystem will flourish and scale-up through diversity and make participants realise that they are legitimate to enter this environment. While it is likely that there are gaps in digital entrepreneurship skills and technical knowledge between male and female entrepreneurs, it is likely that these are socially constructed and internalised societal expectations. It is necessary to debunk these gender biases around digital entrepreneurship and make them ask themselves if those norms are real or simply gender-role-induced scepticism of professional abilities that often hold women back. Once this work is done, the remaining of the week should focus on the soft skills identified as most important in the previous sections according to African women entrepreneurs. The courses should encourage participants to engage in conversations and make them participate in the learning process.

This first week should also focus on wellness and personal branding. It has been raised by DIHs representatives that women usually appreciate times, where they can work on building relationships between each other and working on their virtual and digital identity, which will allow them to strengthen their profile and allow them to develop their network.

Second week: Head

Specific Learning Objectives

- Understand the basics of Data & Analytics / Sales & Marketing / Development / Community
- Perform activities that will allow participants to understand how digital tools can enhance their business
- Digitise their business by exploring digital marketing, create a facebook page, get acquainted to social media

- Be able to perform basic search engine optimisation techniques to attract online customers
- Exchange with women who successfully implemented digital tools in their activity

Structure



How to structure one day of training ?

Morning → Theory + Job Opportunity

Afternoon → Practice

Content

Continuing on the second week of the DES Academy, channelling the head element of this approach, it will offer an **introduction to the most in-demand skills and a snapshot of available careers in the morning while offering activities in the afternoon to practise the skills and allow women to engage with it in concrete terms**. Through testimonies and meet-ups with successful women evolving in the digital entrepreneurship ecosystem, the aim is to present them with an array of job opportunities and that although there might be some hurdles along the way, women can successfully crossover to MDS. It is also important that during this week women

can have practical experience of those skills. It can include an introduction to coding, introduction to digital tools without coding, creating their facebook page or their website, or even google analytics. This way, women will be able to see how digital literacy and digital tools can contribute and enhance their business.

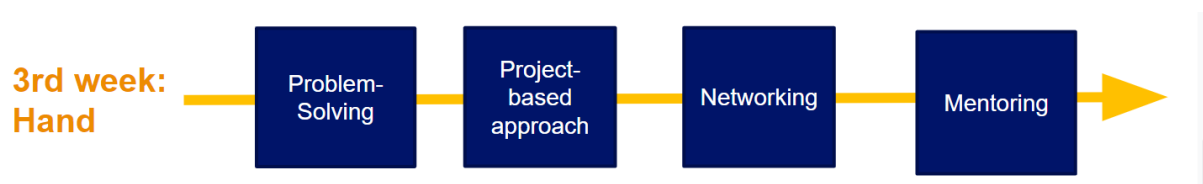
Participants will be able to focus on one or two areas of digital entrepreneurship. After a short presentation on what hides behind the term 'digital entrepreneurship' and the array of opportunities, participants will be able to choose one or two tracks among the most in-demand skills (i.e., development, sales & marketing, data & analytics and operations) that will guide their experience during the rest of the week. Once they have picked one or two tracks, they will be able to immerse themselves in the life of a woman who works in this sector. The latter will play the role of a 'mentor' and will be able to share her experience and answer participants' questions.

Third week : Hand

Specific Learning Objectives

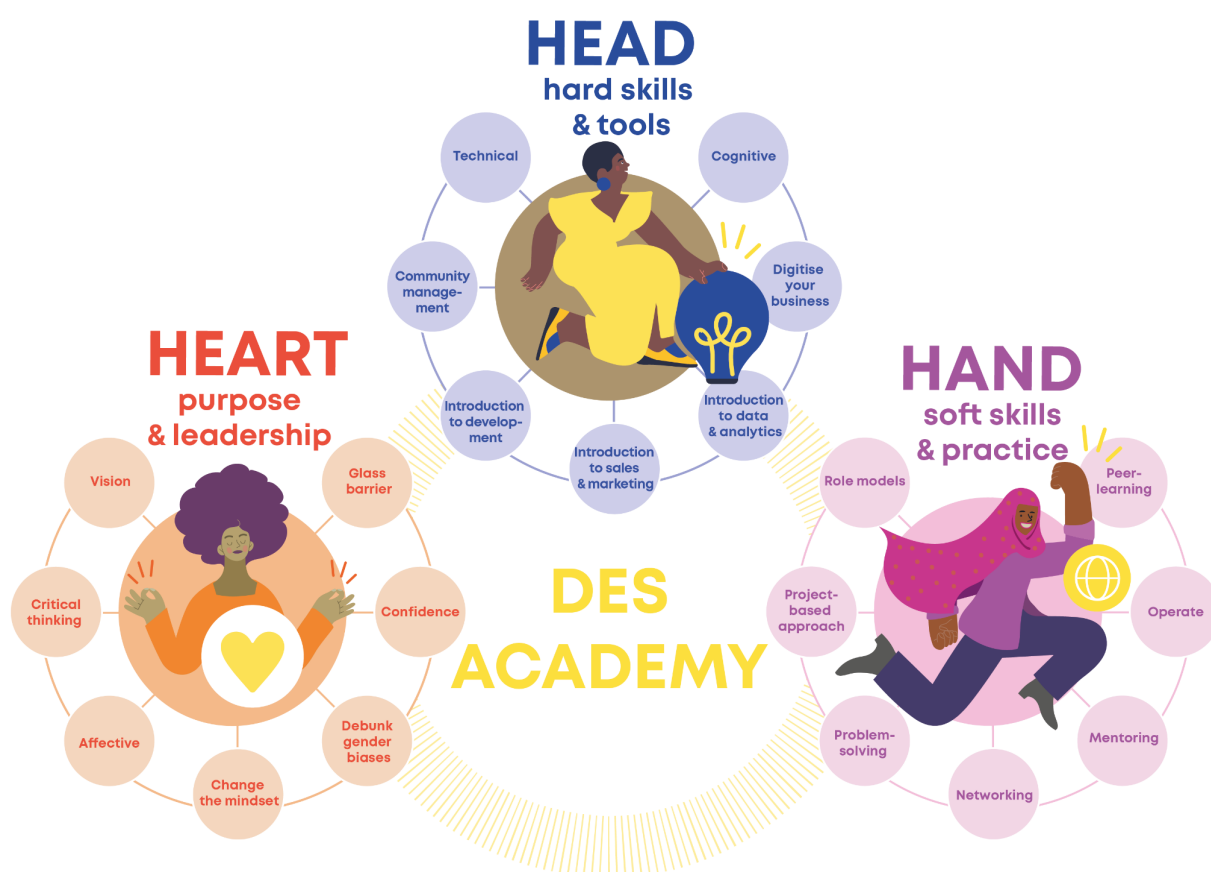
- Create a mindset and get the tools to be able to work in team
- Understand and be able to put in practice a project-based approach and see how everyone's different skills can contribute to the global objective of a project
- Exchange with role model and create new networks to leverage collective intelligence and connect with women entrepreneurs across Africa

Structure



Content

The last week of training will focus on the hand aspect through work methods such as project-based learning and mentoring/networking to secure the sustainability of the **DES Academy**. This week will be the opportunity to leverage collective intelligence and how digitalisation shapes our ways of working. As highlighted in previous sections, it has been raised that women are eager to know more about role models and women who have successfully broken this digital glass ceiling. It is also important that participants can exchange in groups with mentors but also between them and have small 'check-ups'. Through this peer-learning, they will start creating a network that could potentially grow after the end of the DES Academy.



The format of the DES Academy

Flexibility should be a keyword when implementing the DES Academy. Taking into account the commitments that women face, the tools will have to adapt to women's imperatives without jeopardising the quality of the DES Academy. **This white paper calls for a curriculum that requires as little time as possible in front of a screen.** Ideally, participants should not spend more than six hours per week in front of a computer. Preferably, the intermediary will provide a space so that the women can follow the learning as a community. Peer-to-peer learning, direct conversations and face-to-face will be favoured to ensure that the human-centred approach of this programme is not hampered by screens which could potentially compromise participants' engagement. Besides, the DES Academy should not be run for three weeks in a row. DIHs should space out training weeks by at least one week so that participants can have the time to digest the knowledge and information received, but also the time to schedule the next week to have the time to manage the training and personal obligations of participants.

If the beneficiaries of the DES Academy have an internet connection and a phone/laptop at home, a balance is needed between online and on-site training. We suggest that during the first week, it is necessary that the cohort is able to introduce each other and exchange on their respective paths, expectations and motivations. Thus, to guarantee a successful onboarding, we suggest that the first week should be on-site, or at least the first three days. The second week could be partly on-site and offline. The first part focusing on hard skills could be dispensed through videos that participants could watch at home according to their own schedule. On the other hand, the other part of the module focusing on practice should take place at the physical space of the intermediary. During the first part of the second week, a 'check-up' call should be scheduled from instructors to participants to make sure that they have access to the online content and answer any questions they might have. To better capture the utility of the project-based approach, the last week should be on-site so that participants can better engage with each other and their instructor(s). This week might be the most challenging as it aims at presenting a way of interacting with

other stakeholders either through a group project/presentation or through the induction to networking and mentoring.

It is important that women also have tokens of their training journey to highlight that something came out of this experience. This white paper encourages DIHs to challenge participants by making them work on group project presentations or any practical exercise that might be reemployed in the future. DIHs representatives suggested having the DES Academy certified by a university, either African or European, to convey a sense of reliability and recognition to the training programme that not only would attract participants but also allow them to apply to further training post-DES Academy.

After the programme, women who want to go further (either by doing a specific training on a skill or a job, or just keep in touch with their cohort and role models encountered during the training) should be able to continue their journey in another format. Thus, this white paper suggests that female participants wanting to deepen their skills should be connected to training centres operating within the DIH or working in partnership with the latter. This way, the sustainable component of the DES Academy would be reinforced to the extent that it not only allowed women to break psychological barriers but also enticed them to further their knowledge and potentially pursue a career in this realm. A 'graduate reunion' could also be considered to reunite former students of the DES Academy alongside an informal channel to keep in touch with each other (e.g., set up a Facebook group, Whatsapp conversation...). DIHs representatives highlighted that women who graduated from the DES Academy should become ambassadors and promote the Academy within their community.

Monitoring and Evaluation

Regarding the monitoring and evaluation of the DES Academy, it would be interesting to develop a questionnaire inspired by the SWOT analysis. Through this exercise, it would be a useful tool to know to what extent this 3-week experience has been transformative for women. This questionnaire should essentially revolve

around the strengths and weaknesses that participants identified about themselves at the start of the DES Academy, on their knowledge of digital literacy, entrepreneurship, and digitalization. Questions could look like the following ones: “*From 1 to 10, how would you rate your leadership skill?*” or “*From 1 to 10, would you say that jobs in digital entrepreneurship are only for men?*”. This data could be aggregated and analysed to rate the success of this programme and what could be improved. Feedback from graduates shall also be highly valued to the extent that they might have an acute analysis of their needs after the training and improve its implementation. For instance, the questionnaire submitted at the end of the programme could include the question: “*How likely is it that you would recommend this DES academy to a friend?*”. The DIHs will also have to monitor the DES Academy and update the curriculum as often as possible in line with changes and evolutions of the digital entrepreneurship ecosystem’s needs.

To contribute to the sustainability of the DES Academy, **this white paper calls for the DIHs to create links and synergies with already existing structures and initiatives that could leverage on what is done.** (see Appendices).

Highlights

- Intermediaries are essential to scout potential participants as they know their audience and are trusted by women
- Adopt a women-centred approach: the DES Academy should always put women’s interests and needs at the core of its functioning.
- Rely on intermediaries that have physical spaces and focus on women’s empowerment and have an appetite for digital entrepreneurship
- Pick-and-choose method: participants will be able to select modules that fit their needs
- 1st week: induction to digitalisation in Africa and debunking of gender bias

around digital entrepreneurship (Heart)

- 2nd week: snapshot of available careers and areas within the ecosystem and practical training on digital literacy (Head)
- 3rd week: focus on work methods such as project-based learning and on mentoring/networking to secure the sustainability of the DES Academy (Hand)
- Many opportunities across the continent to create synergies with: there are many initiatives that promote women's agency through digital entrepreneurship across Africa. It offers an array of services: trainings, network, events etc...

Conclusion

Digital skills have become a prerequisite for anyone to participate meaningfully in the growing digital world. It is particularly true in Africa that although it encompasses a myriad of different economies and cultures, opportunities are growing and everyone needs to be involved in the blossoming of Africa in the global digital ecosystem, men as much as women. This statement is challenged by stereotypes and gender norms. The ecosystem remains male-dominated and efforts are needed to entice women to strengthen their digital skills. It bears repeating that this DES Academy, to have a lasting impact on the digital ecosystem, needs to be adapted to local contexts and engage with national experts and professionals as a springboard to guarantee the DES Academy's success and sustainability.

Contributing to gender equality and women's economic empowerment in Africa through digital entrepreneurship requires addressing the lack of digital skills and the poor digital literacy that prevent women's participation in this growing digital economy. Digital and entrepreneurial skills are crucial for supporting and uplifting African women to shift from being passive observers of digitalization to becoming active agents of change and harnessing the opportunities of the digital age. Investing in women is one of the most effective ways to increase equality and promote inclusive and sustainable economic growth.

This white paper also calls for more gender-disaggregated data that are scarce when it comes to women-owned businesses and women entrepreneurs at the local level. The more data is collected the more future programmes and training will be tailored to

answer the evolving needs of women navigating in this digital ecosystem. Having adapted training for women is a key component to struggle against gender inequality in digital entrepreneurship and promoting women's agency and empowerment as proactive development agents on their continent.

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Figures

Figure 1: Regional gender gaps in mobile ownership and mobile internet use, 2017-2020.
Source: GSMA Intelligence, 2020

Figure 1

Regional gender gaps in mobile ownership and mobile internet use, 2017-2020



Source: GSMA Intelligence, 2020

Appendices

	Digital Ambassadors Programme (DAP)
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Country - City	Rwanda, the program operates country-wide
Contact	info@minict.gov.rw
Date of creation	2017 - 2024
Supporting structure	GIZ
Fees	Free
Type of learning	<ul style="list-style-type: none"> DAP's delivery approach is based on the model of recruiting young women and men with entrepreneurship ambition to provide digital literacy training and act as catalysts of change in their communities. Digital Ambassadors (DAs) are recruited from among young social innovators and are deployed in communities throughout the country in order to directly train citizens in accessing e-Government and other digital and mobile services through Irembo Platform.
Beneficiaries	Women

Global objective	<ul style="list-style-type: none"> • Transform rural communities into digitally literate and skilled ones through digital literacy trainings (Digital Ambassadors Program-DAP). • Increase access to information, internet services, ICT infrastructure and different applications for provision of online services (Irembo, E-health, e-Agriculture, e-Business, e-Commerce and digital financial inclusion services). • Support the efforts of increasing device penetration through stimulating demand and empowering citizens with the capacity to use those devices. • Provide digital literacy trainings to women, youths and persons with special needs/disabilities • Mobilise partners and involve the private sector to support digital literacy trainings for Rwandans. • Job creation and increase citizens' productivity through use of ICT. Digital ambassadors will be linked with ICT private companies and they can gain commission based on services provided to citizens.
Activites	<ul style="list-style-type: none"> • Involve different key partners that offer services through ICT (telecom companies, banks, irembo, government institutions that offer online services etc...) and put together efforts for training and sensitising citizens. • Develop a clear partnership framework with clear responsibilities of each part.

	<ul style="list-style-type: none"> ● Recruit Digital Ambassadors with an entrepreneurship mind that can manage SAP efficiently, generate their own revenues for sustainability and train citizens. ● Combine effort with other public institutions that need to reach citizens and sensitise citizens on their e-Services and other ICT services. ● Provide funds to support each Digital Ambassador to acquire some necessary materials, repair devices and subscribe as agents to different companies. ● Provide a transport allowance to each Digital Ambassadors. ● After 12 months, each Digital Ambassador deployed in SAP will continue to train citizens free of charge and deliver e-services upon receiving commissions. ● The minimum service for a Digital Ambassador deployed in SAP is three years, if he/she stops before one year a balance of the investment fund provided must be repaid back. ● There will be other categories of Digital Ambassadors who will train citizens at cell levels because they don't have full SAP requirements. These will receive their monthly transport allowance as usual.
Results	<ul style="list-style-type: none"> ● DAP was launched in September 2017 in Rulindo Districts and started with 50 Digital Ambassadors;

	<ul style="list-style-type: none"> • 41,025 citizens were trained through the Proof of Concept (from September 2017 to June 2019). • The DAP new model is designed and implemented from November 2019. This new model is based on training cost optimization through the strong partnership between the Ministry of ICT and Innovation (MINICT), Ministry of Local Government (MINALOC), Ministry of Youth and Culture (MYCULTURE), development partners and private sector. • The new model was run using 110 digital ambassadors deployed across 110 cells across 30 districts. Since November 2019 (5 months), 27,602 citizens have been trained and this makes a total of 67,627 citizens trained under Digital Ambassadors Program (DAP). • Currently 262 Service Access Points (SAPs) are operational in Rwanda; among them 200 are at sector level, each equipped with four (4) laptops, one (1) all in one printer and one agent. The other 62 SAPs are operating at District level each having 15 desktop computers, one all in one printer and one agent.
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	‘Hackeuses’ - Digital Culture and Techniques
Country - City	France
Contact	https://simplon.co/formation/hackeuses/19
Date of creation	NR
Supporting structure	Simplon
Type of learning	On-site
Fees	Free
Beneficiaries	<ul style="list-style-type: none"> • Women from the Priority Neighbourhoods of the City Policy. • Unemployed and/or untrained women. • Women in vocational retraining. • Foreign women (outside the EU).
Global objective	<ul style="list-style-type: none"> • Understand the key concepts of digital culture: history, languages, etc... • Acquire digital literacy to understand the societal issues related to it. • Discover the digital professions. • Be able to use “agile” working methods and adapt them to your needs. • Develop your curiosity in digital culture to potentially pursue a training at Simplon or elsewhere and become an integrator / web developer for example.
Activities	<ul style="list-style-type: none"> • The fundamentals <p>Introduction to digital literacy</p>

	<p>Preparing your digital identity</p> <p>Organising its technology watch</p> <p>Presentation of digital jobs</p> <ul style="list-style-type: none"> • Methods <p>Discover project management methodologies</p> <p>Learning to organise</p> <p>Using web tools</p> <ul style="list-style-type: none"> • Web services and programming <p>First notions of programming and panorama of languages</p> <p>Use of a content management system</p> <p>Technical deepening with the programming of connected objects</p> <ul style="list-style-type: none"> • Vocational integration <p>Immersion into the tech ecosystem</p> <p>Use of professional social networks</p> <p>Developing personal branding</p>
Results	NR

	Women in Business
Country - City	Morocco
Contact	https://www.bmci.ma/women-in-business/#:~:text=Ce%20programme%20s'adresse%20exclusivement,pas%20550%20millions%20de%20Dirhams.
Date of creation	2018
Supporting structure	EBRD and the EU Initiative for Financial Inclusion
Type of learning	
Beneficiaries	Professional women operating in a liberal framework and women managers of Moroccan small and medium-sized enterprises with fewer than 250 employees, small and medium-sized enterprises or Moroccan SMEs with a turnover not exceeding 550 million Dirhams.
Global objective	The programme's approach is based on improving access to finance and skills for women professionals and business leaders.
Characteristics of the method of apprenticeship	<p>In addition to the financial contribution, the Women In Business program offers you several services:</p> <ul style="list-style-type: none"> • Free online diagnostic tool, designed to provide personalised self-assessment, highlighting the company's strengths and weaknesses. • Business coaching & Consulting, on the different aspects of the company for the development of a strategy for its growth.

	<ul style="list-style-type: none"> • Skills development training with the aim of developing your entrepreneurial skills on specific topics, including starting and running a business; sales and marketing; online marketing; financial management... • Mentoring & Networking in the form of mentoring and technical assistance sessions to help entrepreneurs prepare to grow and scale their businesses.
Results	NR

	Pareel - supporting women entrepreneurs to access public and private contracts
Country - City	Senegal
Contact	https://vc4a.com/we-fi/pareel-cohorte-2/?lang=fr
Date of creation	2021
Supporting structure	Deloitte / World Bank / We-fi
Fees	free
Beneficiaries	<p>Be a woman from Senegal that:</p> <ul style="list-style-type: none"> • Formalisation: Hold a National Business and Associations Identification Number (NINEA); • Role of women in SMEs: owned or co-owned by a woman (more than 50% of the shares) or managed by a woman; • Legal definition of SME: Have an annual turnover of between 5 million CFA francs and 2 billion CFA francs and have at least 51% of its capital held by a Senegalese citizen; • Location: Be based in Dakar, Thiès, Ziguinchor, Kaolack or Saint-Louis;
Global objective	<ul style="list-style-type: none"> • Improve technical skills related to market access • Improve behavioural skills in leadership, public speaking, emotional intelligence

	<ul style="list-style-type: none"> • Be coached by professionals to maximise your ability to win contracts • Meet potential clients and increase your visibility with decision makers • Find business partners and new business opportunities
Characteristics of the method of apprenticeship	<p>A three-month training that include:</p> <ul style="list-style-type: none"> • Collective training sessions based on specific technical skills (financial education, financing mechanism, negotiation technique, etc...) • Individual coaching sessions • Mentoring sessions with seasoned professionals • Networking events aimed at connecting you with potential customers and partners • Privileged access to support services for the Senegalese ecosystem
Results	NR

Recommendations of partners to create synergies with

Structures that promote women's agency through digital entrepreneurship exist and could potentially create synergies with the DES Academy. For instance, **Rlabswomen**, based in South Africa, aims at unleashing the unrealized greatness in women so that they can fearlessly dominate the technological, entrepreneurial and artistic domains. It offers entrepreneurial, technological and artistic opportunities through training and empowerment programs and offerings. Rlabswomen proposes a Virtual Incubation Program (VIP) designed for women by women. It covers seven different modules through one-on-one coaching. The purpose is to guide women entrepreneurs through different areas of their businesses and encourage them to talk through what they would like to accomplish. They also organise awards every year where they celebrate women-led organisations in the RLabs ecosystem that have done outstanding work while dominating their respective domains (e.g., Civil society organisations, entrepreneurship, technology...).

In Ghana, the **Developers in Vogue Community** offers fellowships, Bootcamp for women residing in Ghana to gain knowledge and skills to be top-notch tech innovators. and programs around data science and software development. Striving for sisterhood, they organise the Diva Festival that celebrates African women in innovation, technology and entrepreneurship. This festival is the occasion to meet tech influencers, network, attend various masterclasses and workshops, gain more insights about the tech ecosystem and be exposed to job opportunities.

In France, **SIMPLON** offers a free of charge programme called “Hackeuses - Culture et techniques du numérique”. The aim of this training course is to increase women's access to digital training and jobs. The curriculum offers a framework for exchange and learning, which combines introduction to tech culture, discovery of digital jobs and acquisition of the basics of code. (See Appendices)

On a bigger scale, **eTrade for Women** combines the transformative power of women's entrepreneurship with the positive impact of digital technologies. The initiative supports

women digital entrepreneurs from developing countries to help them thrive as business leaders, and emerge as an influential voice in the public policy debate. They offer masterclasses that are events to equip women entrepreneurs with the right skills to navigate in a fast-changing digital landscape. They have also developed a community that gathers women digital entrepreneurs from across the globe to share experiences and gain visibility. Community members expand their connections, acquire new skills and foster solutions to overcome common challenges that can have an impact on their ecosystem. Lastly, eTradeforWomen facilitates inclusive policy dialogues among women digital entrepreneurs, policymakers and other key stakeholders, at the local, regional and global levels, to foster more gender-responsive and enabling policy and regulatory environments.

The **Mitreeki Partnership** was launched as part of the SheTrades Rwanda in March 2017 to build a platform for African women to share ideas, knowledge, experience and best practice with Indian and international experts. The initiative is facilitated and sustained through an online community of practice, training workshops and networking opportunities. Mitreeki is a platform where African and Indian women come together to share business ideas, knowledge, experience and best practice, facilitated and sustained through communities of practice, training and networking. Working with local women's associations, ITC has already brought together more than 200 entrepreneurs to participate in the three facets of Mitreeki: communities of practice, networking and training. Mitreeki provides women with wrap-around support and context-specific classes, trainings, mentoring and coaching to talented entrepreneurs, on: production, pricing, brand identity, producing a cohesive collection, marketing, media, distribution models, financial management, business administration and sustainability.⁸⁷

She Leads Africa is a platform that gives women the community, information and inspiration through online resources, events, or book club. Through its program **Motherland Mogul Insider**, She Leads Africa offers a private, digital community for young African female professionals and entrepreneurs who are looking to unlock their

⁸⁷ Mitreeki. "About us".

potential and accomplish their goals. Women have access to premium learning videos, articles, podcasts, worksheets, and events led by industry experts.⁸⁸

Focusing on marginalised populations, **l'Atelier des génies** offers programmes specifically designed for women seeking retraining or integration into society, such as women who dropped out of school too early or refugee women. They also have programmes for women who are already in economic activities. They train them to digital tools and technical skills in the areas they need to grow their business. Their goal is to have more girls who will pursue a career in STEM and to have more women who will integrate digital tools into their work.

Women in Tech is a global initiative that aims at closing the gender gap and to help women embrace technology. Their main actions revolve around mentoring programmes, advocacy and support. Their programme “**Mentor in Tech**” was developed to support english-speaking women in the STEM industry at all levels. Beneficiaries have the opportunity to have 1-1 individual sessions with experienced mentors, personal guidance and support. The targets of this program are women building their career in this field and seeking mentorship in 7 areas (i.e., career & leadership, technology, startups, digital marketing, project & product management, business analytics, UX/UI Design). The program includes three individual sessions during three months, three workshops on soft skills and access to a closed networking community. The program is free of charge except if the participants want to have a certificate it will cost 20 euros.

SheTrades, already mentioned in the first section of this white paper, also offers a network and a blog where once someone is registered, an algorithm suggests relevant contact, offers and opportunities. This global SheTrades community allows partners, supporters and investors to exchange and interact together. Entrepreneurs are also able to showcase their products and services and connect to buyers around the world. This community, which gathers more than 40,000 businesses, is able to interact through events, activities, groups and hubs.

⁸⁸ **She Leads Africa**. “Motherland Mogul Insider”.



Lastly, **Womenpreneur** initiative is a Brussels based organisation focusing on Belgium and the MENA region. It has reached and supported more than 15,000 women since 2016. The organisation's aim is to advance women's place in the entrepreneurial scene, technology, innovation & society. It offers entrepreneurial activities, mentorship sessions, leadership programs, technology education, networking events and opportunities. Through their Digital Hub, Womenpreneur offers a space to share knowledge and resources while providing free access to entrepreneurship skills, financial education, tech literacy, series of events, networking and skills development opportunities. Courses available tackle financial literacy and entrepreneurship and are proposed to further digital skills in social media, management, artificial intelligence, coding for beginners etc...

Joining forces with **Sanad Entrepreneurship Academy**, Womenpreneur Tour was created to map and visit female talent in technology, innovation and entrepreneurship to assess the current state of the entrepreneurial ecosystem in the MENA region in order to facilitate investment in women and girls, in form of capital, resources, mentorship and advocacy. Regarding Sanad Entrepreneurship Academy, the latter operates also in the MENA region. Primarily a fund for MSMEs, Sanad also offers webinar series and programs to support business owners throughout their target region and an entrepreneurship bootcamp.



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