DIGITAL TRANSFORMATION STRATEGY IN ACTION: DEVELOPING A ROADMAP TOWARDS THE FOURTH INDUSTRIAL REVOLUTION IN AFRICA

Report on the Side Event "Making the Fourth Industrial Revolution work for Africa"

AIW AFRICA INDUSTRIALISATION WEEK

UNIDO | UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

United Nations Economic Commission for Africa

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AIW
AFRICA
INDUSTRIALISATION
WEEK

ACKNOWLEDGEMENTS

DISCLAIMER

SUSTAINABLE DEVELOPMENT AT THE HEART OF AFRICA'S DIGITAL TRANSFORMATION

5G CONNECTIVITY

ARTIFICIAL INTELLIGENCE

ADDITIVE MANUFACTURING

THE FOURTH INDUSTRIAL REVOLUTION

Recent years have seen a growing convergence between the manufacturing and digital sectors, heralding a major shift in industrial production on a global basis, led by advanced digital production technologies.

INDUSTRIAL INTERNET OF THINGS

ADVANCED ROBOTICS

BIG DATA

These avant-garde technologies boast considerably more powerful data processing abilities than ever before, and with it, hold significant potential to increase efficiency and value added in industrial sectors, safeguard the environment and to contribute to human wellbeing.

In terms of the 2030 Agenda for Sustainable Development, advanced innovations present us with considerably enlarged scope for progress in Africa.

MAKING THE FOURTH INDUSTRIAL REVOLUTION COUNT FOR SUSTAINABLE DEVELOPMENT IN AFRICA

Digital platforms, mobile technologies and blockchain technologies can be a drive to market revolution in Africa, enabling sustainable consumption and production patterns *(SDG 12)*

Promoting energy efficiency and enabling a circular economy approach to advance sustainable industrial development *(SDG13)*

Improving productivity of small-scale food producers through precision farming led by drones and big data *(SDG 2)*

Enhancing gender equality and empowerment of women and girls through involvement in digital capacity building activities and STEM operations *(SDG 5)*

Optimizing public transport systems and building safe, resilient and sustainable communities using big data and AI *(SDG 11)*

Boosting innovation, productivity and competitiveness among micro-, small- and medium-sized enterprises (MSMEs) through the adoption of IIoT and other digital technologies *(SDG 9)*

Creating inclusive, sustainable, and productive employment and decent work for all and particularly for the youth, through the digital transformation of industry *(SDG 8)*

Promoting small-scale IoT-powered water treatment with remote monitoring for rural communities in Africa where access to clean water is not guaranteed *(SDG 6)*

CYBERSECURITY

INDUSTRIAL INTERNET OF THINGS

ROBOTICS

SMART SENSORS

CLOUD COMPUTING

MOBILE TECHNOLOGIES

BLOCKCHAIN

BIG DATA

DRONES

ARTIFICIAL INTELLIGENCE

ADDITIVE MANUFACTURING

INDUSTRY

WELLBEING

AGRICULTURE

ENERGY

REGIONAL INTEGRATION

SUSTAINABLE DEVELOPMENT GOALS

Governments

National & Regional Institutions

Innovation Ecosystem

Investors

MSMEs

Startups

Academia

Women & Youth

Rural Population

However, there are also some **potential downsides** to this transformation which must be addressed.

The digital divide between High Income and Developing Countries may well widen rather than close without robust digital policies and international cooperation mechanisms. The **UNIDO Industrial Development Report 2020**, which examined the implications of the Fourth Industrial Revolution for all countries, found a deeply lopsided digital manufacturing environment.

10
Economies (mostly located in the Global North) account for over **90%** of global patents and **70%** of exports associated with advanced digital production technologies.

88
Economies (including those in most African countries) currently have **little or no involvement** in advanced innovation, be it as consumers or producers.
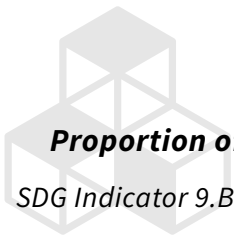
Proportion of total manufacturing value added from medium and high-tech industry (MHT)

SDG Indicator 9.B.1: Higher values indicate a country's industry sector is focused on high-tech manufacturing.
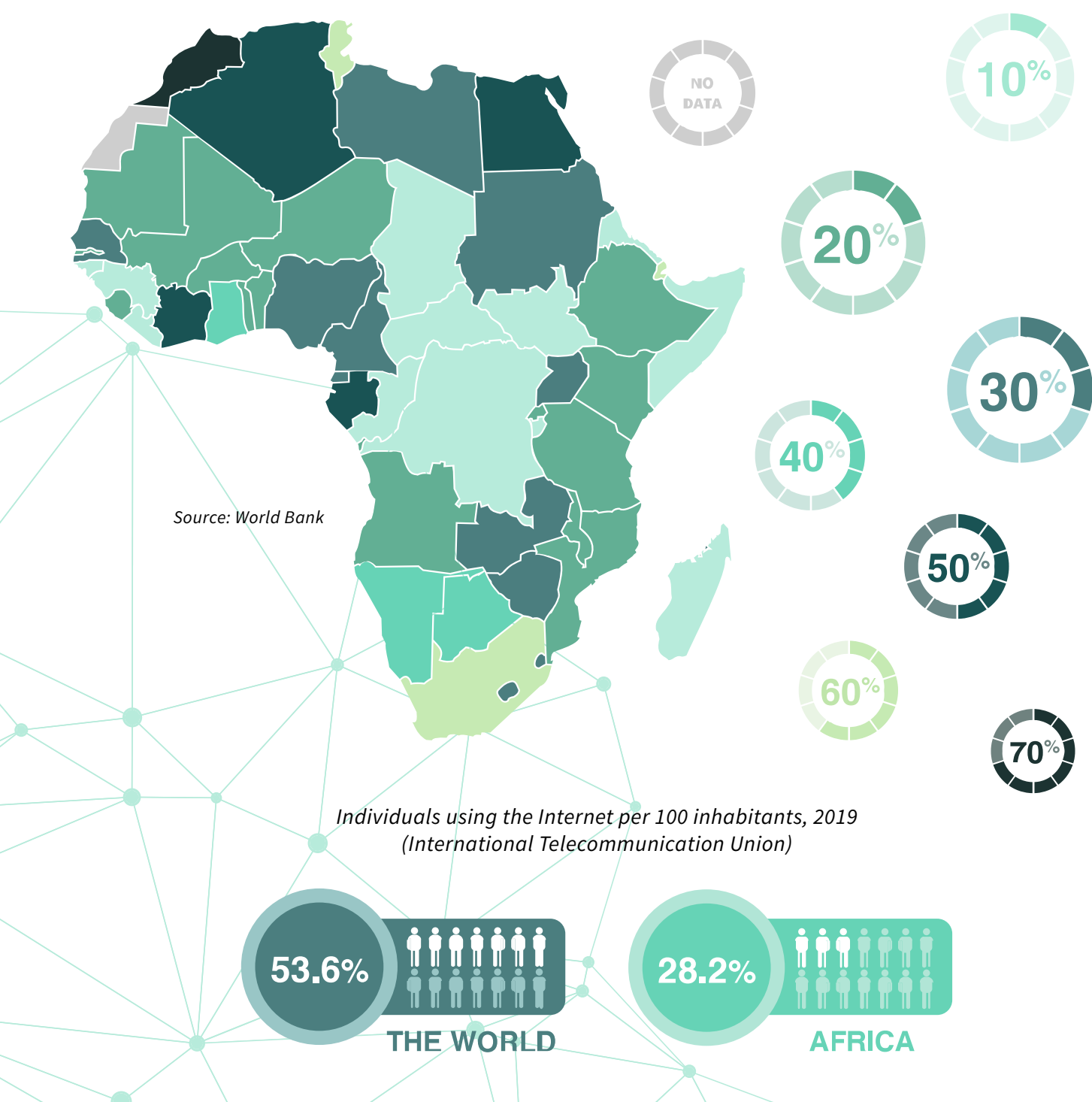

Source: UN Statistics Division

NO DATA

10%

20%

30%

40%
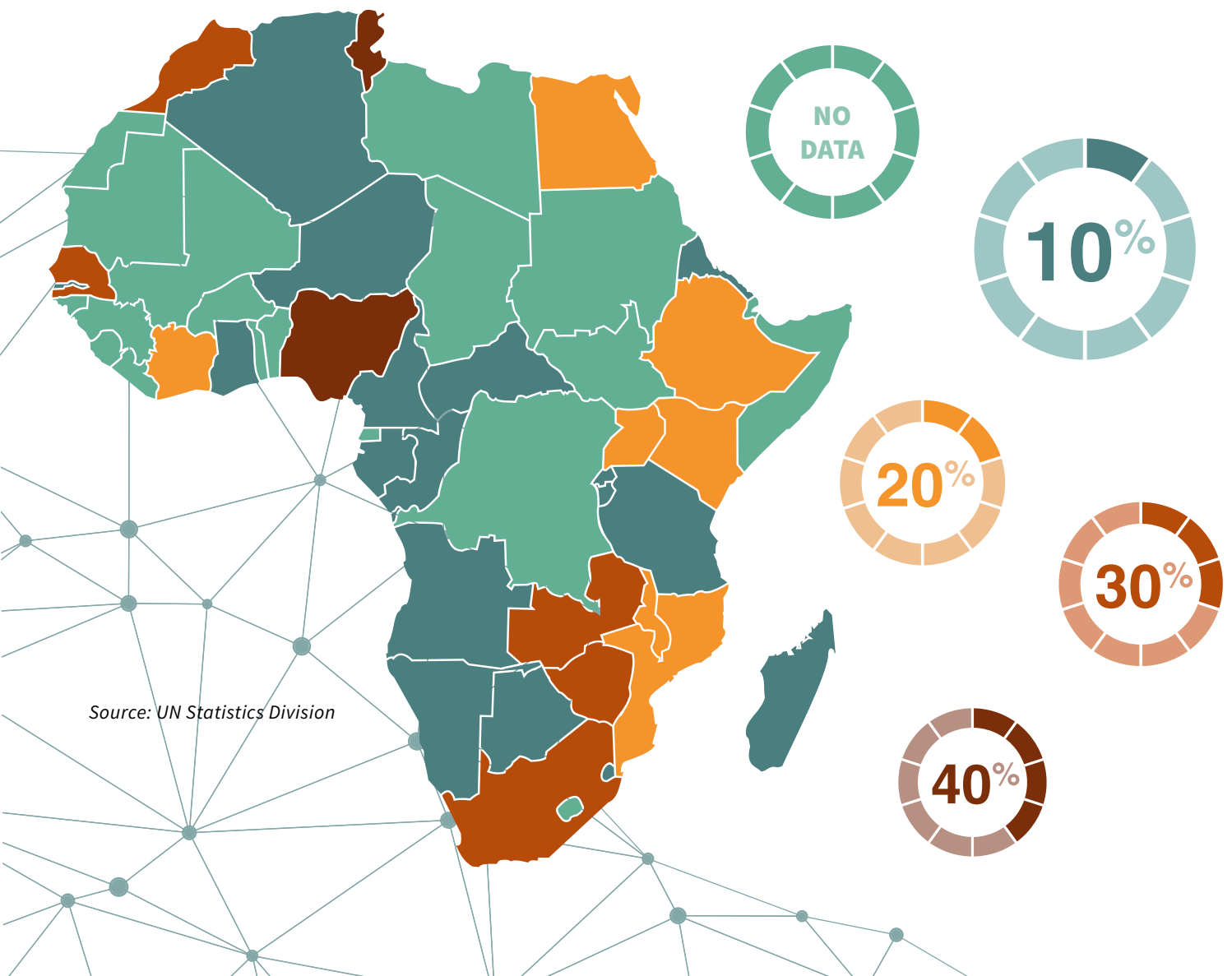
Moreover, there are considerable barriers to developing countries resolving to "leapfrog" into the ranks of these digital frontrunners, most notably in terms of:

- Basic **capabilities and digital skills** for absorption of advanced technologies; 70 per cent of firms in developing countries are still using analog technologies, according to the UNIDO IDR 2020.

- Insufficient **digital infrastructure**; Examining Internet usage on an individual basis, Africa has just 28.2 people per 100 inhabitants, compared with 82.5 in Europe, according to the **ITU**.

Share of the population using the Internet, 2019

Source: World Bank

Individuals using the Internet per 100 inhabitants, 2019
(International Telecommunication Union)

NO DATA

10%

20%

30%

40%

50%

60%

70%

**53.6%** THE WORLD

28.2% AFRICA

- Heterogeneous progress and **regional integrations and coordination issues**, resulting in internal "technology islands" within African countries.

- **Access and affordability** issues. Africans also continue to face the highest Internet use costs in the world, with the average across the African continent is 7.12 per cent of the average monthly income per gigabyte, and in some cases costing more than a fifth of the average earning, according to the **2019 Affordability Report**.

- Diversion of **investment** to address the crisis created by the COVID-19 pandemic, jeopardizing the capacity of many African countries to keep pace with digital transformation. Sub-Saharan Africa exhibits the lowest capacity of all regions to enable working from home during the Covid-19 pandemic, according to the **International Monetary Fund**.

The Ability to Switch to Telework to continue Business during the Pandemic varied by Regions (International Monetary Fund)
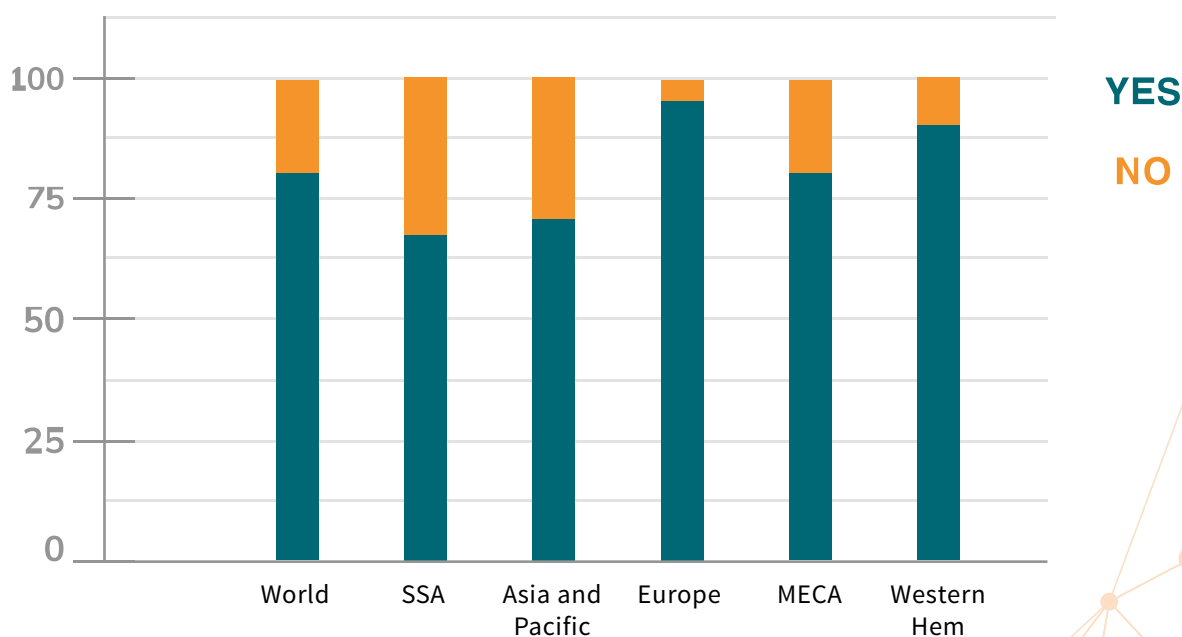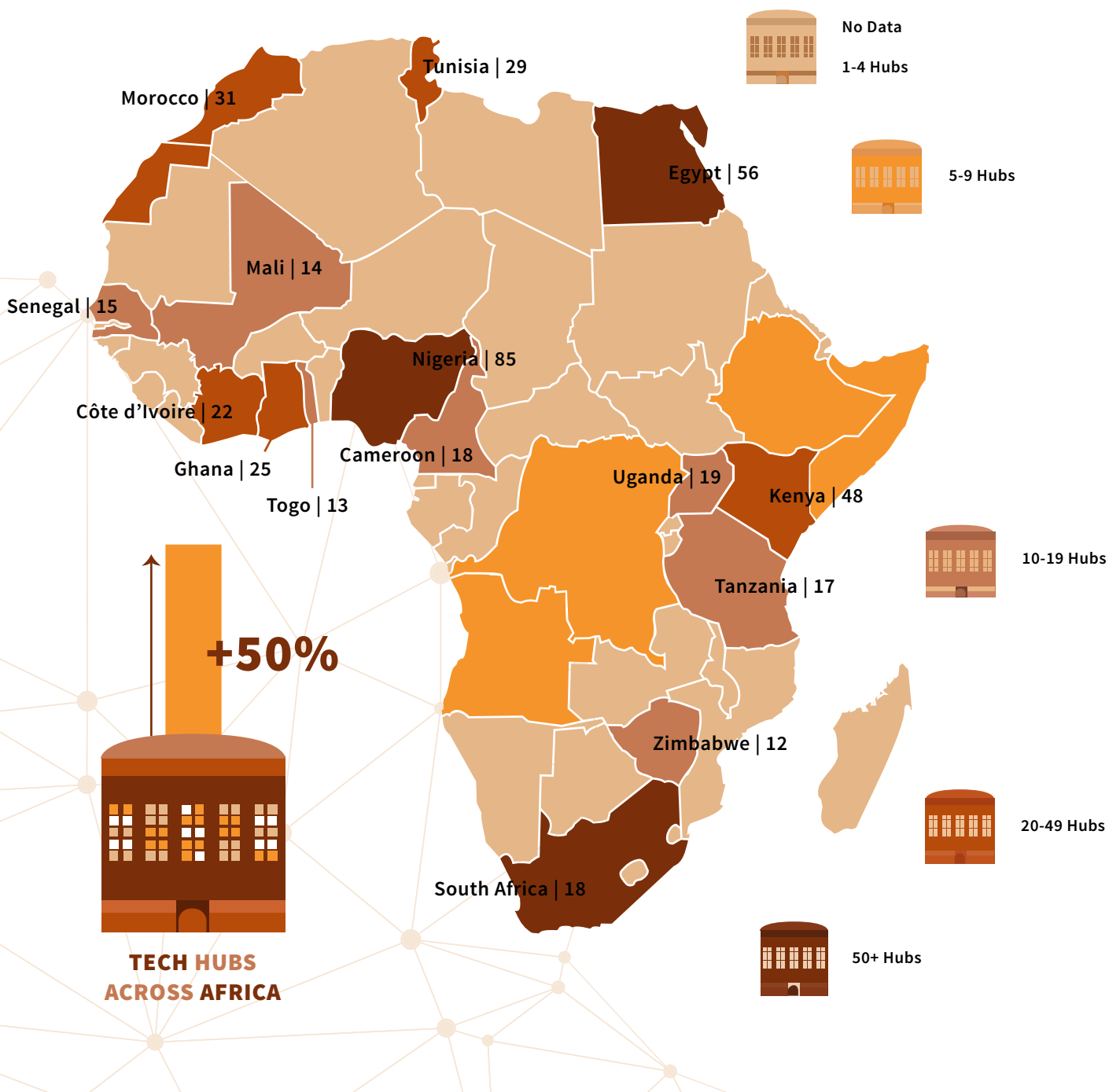

Digital transformation can be a driving force for innovative, gender-responsive, inclusive, and sustainable growth. Innovations and digitalization are stimulating job creation and contributing to addressing poverty, reducing inequality, facilitating the delivery of goods and services, and contributing to sustainable development and the achievement of many of the key transformational outcomes of **Agenda 2063**.

The Fourth Industrial Revolution (4IR) has the potential to transform Africa's economy, increase its productivity and enhance its global and regional trade, particularly in the context of the **African Continental Free Trade Agreement** (AfCFTA), which entered into force in May 2019. Some of the continent's greatest **strengths and opportunities** include the following:

- By 2030, Africa will be home to more than a quarter of the world's population under 25.
- Africa will be a major consumption market over the next three decades.
- Many African countries have already developed policy initiatives which are either exploring the feasibility or preparing the ground for the adoption of 4IR technologies.
- Onboarding the 200 million currently without internet access could result in significant gains in GDP, economic productivity and gender equality.
- The continent's emerging digital ecosystem can act as a multiplier of growth.

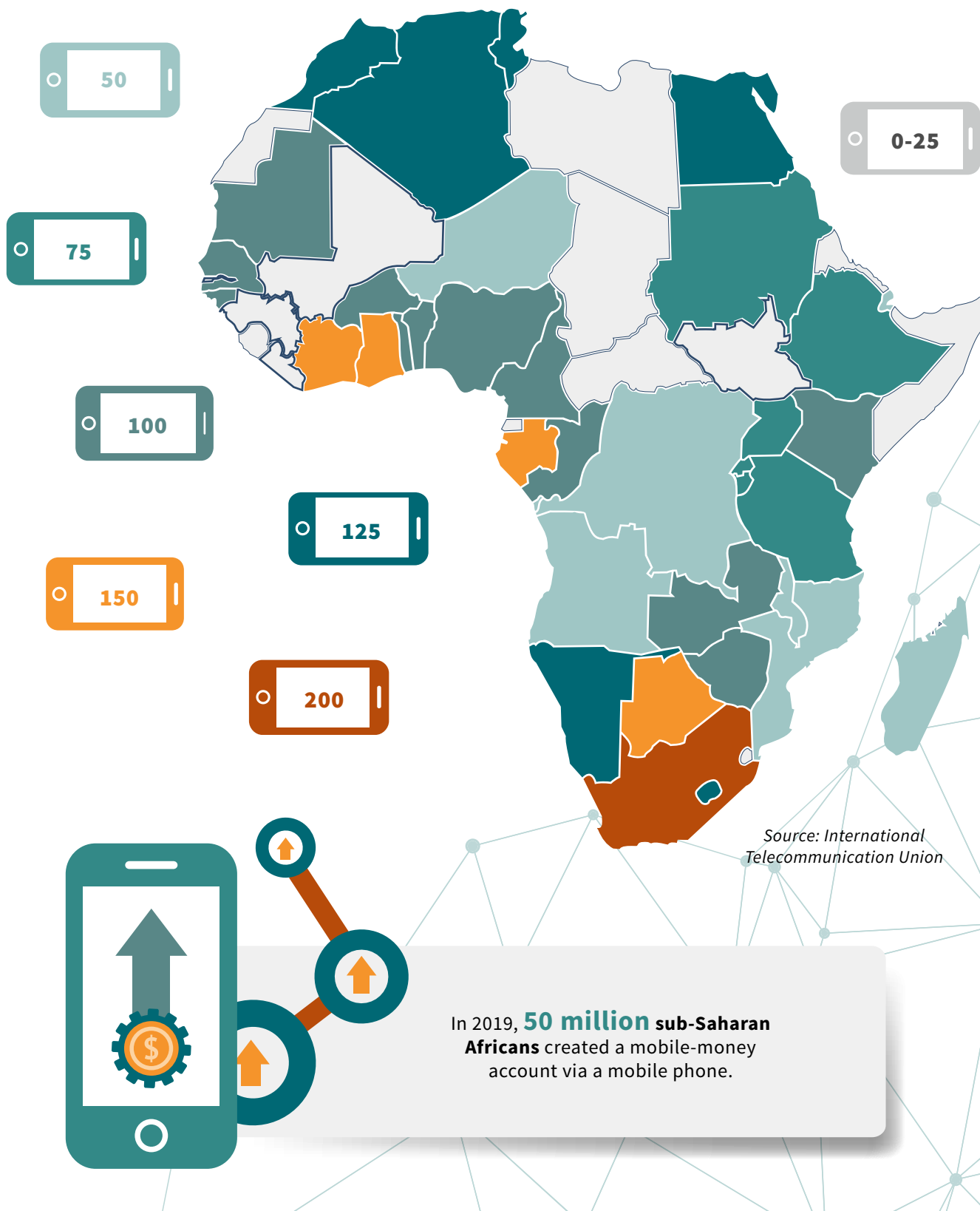### Ecosystem Accelerators in Africa - Tech Hubs Landscape 2019

Startup and innovation culture is deepening on the continent.

No Data
1-4 Hubs
5-9 Hubs
10-19 Hubs
20-49 Hubs
50+ Hubs

Tunisia | 29
Morocco | 31
Egypt | 56
Mali | 14
Senegal | 15
Nigeria | 85
Côte d'Ivoire | 22
Ghana | 25
Cameroon | 18
Togo | 13
Uganda | 19
Kenya | 48
Tanzania | 17
Zimbabwe | 12
South Africa | 18

+50%

TECH HUBS ACROSS AFRICA

- The continent is increasingly mobile phone-enabled and sustainability of growth of Internet.
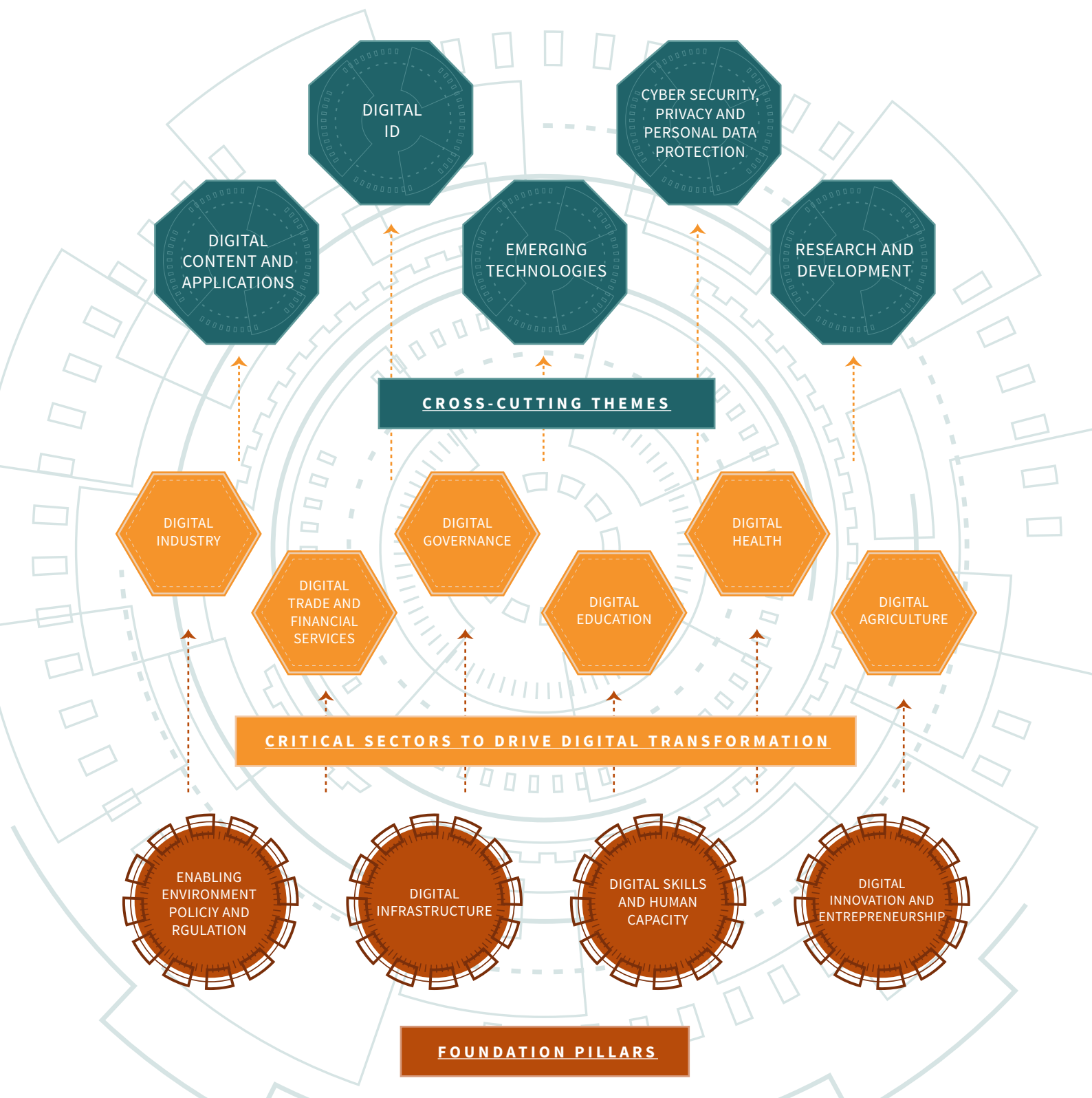
Mobile Cellular Subscriptions

*Mobile phone subscriptions, measured as the number per 100 people.
SDG Indicator 9.C.1: proportion of population covered by a mobile network.*

50

0-25

75

100

125

150

200

Source: International Telecommunication Union

In 2019, **50 million** **sub-Saharan Africans** created a mobile-money account via a mobile phone.

The African Union has been developing its policy research frameworks at the regional level, most notably its **"Digital Transformation Strategy for Africa (2020-2030)"** which aims to "harness digital technologies and innovation to transform African societies and economies to promote Africa's integration, generate inclusive economic growth, stimulate job creation, break the digital divide, and eradicate poverty for the continent's socio-economic development and ensure Africa's ownership of modern tools of digital management."
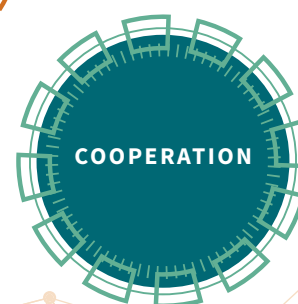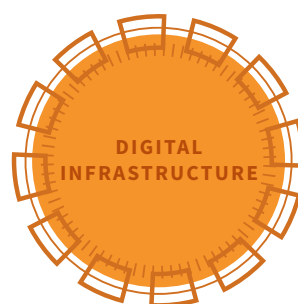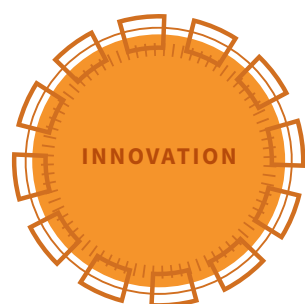
African Union

A DIGITALLY TRANSFORMED CONTINENT FOR PROSPERITY AND INCLUSIVITY

DIGITAL ID

CYBER SECURITY, PRIVACY AND PERSONAL DATA PROTECTION

DIGITAL CONTENT AND APPLICATIONS

EMERGING TECHNOLOGIES

RESEARCH AND DEVELOPMENT

CROSS-CUTTING THEMES

DIGITAL INDUSTRY

DIGITAL GOVERNANCE

DIGITAL HEALTH

DIGITAL TRADE AND FINANCIAL SERVICES

DIGITAL EDUCATION

DIGITAL AGRICULTURE

CRITICAL SECTORS TO DRIVE DIGITAL TRANSFORMATION

ENABLING ENVIRONMENT POLICIY AND RGULATION

DIGITAL INFRASTRUCTURE

DIGITAL SKILLS AND HUMAN CAPACITY

DIGITAL INNOVATION AND ENTREPRENEURSHIP

FOUNDATION PILLARS

UNIDO is the United Nations specialized agency with a mandate to promote inclusive and sustainable industrial development worldwide. Given the unprecedented pace of the Fourth Industrial Revolution and its associated challenges for developing countries in particular, the Organization has been strategically deploying its policy expertise, technical cooperation and programmatic resources, convening networks and partnerships to assist its Member States in their transitions to the future of manufacturing, most notably through the establishment of the Directorate of Digitalization, Technology and Agri-Business and its strategic framework **"Making the Fourth Industrial Revolution Work for All"**.

The strategic approach "Making the Fourth Industrial Revolution Work for All" focuses on innovation, digital skills, digital infrastructure and cooperation as the key elements to enable all to reap the opportunities and address the challenges of the Fourth Industrial Revolution. The strategic document centers upon three key outcomes: harnessing the 4IR for economic development; improving livelihoods through the application of new technologies; and advancing bio-based industries to ensure sustainability. It is through these levers that UNIDO can support the African continent to achieve an inclusive and sustainable digital future.

INNOVATION

DIGITAL INFRASTRUCTURE

DIGITAL SKILLS

COOPERATION

In view of the unique potential gains and challenges of digitalization in Africa, UNIDO, the United Nations Economic Commission for Africa (UNECA) and the African Union convened a virtual panel discussion entitled "Making the Fourth Industrial Revolution Work for Africa" in the context of **Africa Industrialisation Week 2020**. The panel featured a variety of stakeholders from African governments, African private sector representatives and academics, and it succeeded in formulating several concrete recommendations, which can be taken forward to inform the African Union Summit on Industrialization and Economic Diversification 2021.

PLENARY SESSION

The participants of the discussion panel "Making the Fourth Industrial Revolution Work for Africa" highlighted several barriers to harnessing digital industry on the African continent and also several concrete recommendations for stimulating a breakthrough for the Fourth Industrial Revolution regionally. These outputs correspond to four areas- innovation, digital infrastructure, digital skills and cooperation- and include inter alia:

"Regionally, we must act to ensure that Africa is not left behind. Leading African digital innovations and companies show that the continent has talented digital entrepreneurs, but we must put in place the enabling environment for them to succeed on a wider scale. Central to these efforts are the creation of digital policy frameworks, regional cooperation and multi-stakeholder partnerships, dedicated funding streams and the enhancement of digital infrastructure."

DR. BERNARDO CALZADILLA SARMIENTO
*Managing Director of Digitalization,
Technology and Agribusiness, UNIDO.*

Innovation
- Digitalization has immense potential for helping us to achieve the 2030 Agenda for Sustainable Development, with artificial intelligence alone capable of addressing 134 out of 169 associated targets.
- African governments need to invest in their own digital entrepreneurs and Small and Medium Enterprises, taking calculated risks on its own economic base rather than foreign multinationals.
- Intelligent vehicles carry enormous potential for enhancing mobility in Africa, thus opening up unforeseen economic opportunities.

Digital Infrastructure
- A "democratization of innovation" should be promoted to regions outside of centralized tech hubs.
- Digital technologies such as blockchain can increase the efficiency and transparency of government services, leading to impressive gains. For instance, Rwanda increased its annual revenue by 6 per cent through digitalization, while South Africa reduced tax collection costs by 22 per cent.
- African governments should strive towards a Single Digital Market, thus encouraging investment and upscaling of digital capacities.
- Industrialization is key to Africa's development; the continent cannot develop if it does not add value to its raw materials.

Digital Skills
- Africa has several assets in launching its transition to the Fourth Industrial Revolution, most notably its young population relative to other regions; its flexibility and resilience; and its capacity for finding creative solutions to problems.
- With respect to readiness for the Fourth Industrial Revolution, Africa needs to train and upskill its young people, especially with regard to STEM and "soft skills", such as critical thinking, collaboration, creative thinking, adaptation skills.

Cooperation
- The mainstreaming of digitalization can promote a change of mindset towards multistakeholder collaboration for digitalization.
- The international community should help to invest in digitalization regionally and explore innovative financing agreements; African governments cannot shoulder the burden of digital acceleration alone.
- Policymakers need to establish better consultative processes with digital entrepreneurs, as in many contexts, policies are being developed without the input of the digital sector. Young people need to be respected as business leaders and the drivers of the Fourth Industrial Revolution in Africa.

PLENARY SESSION HIGHLIGHTS

DIGITAL SKILLS

"The will of the youth to change how things are is going to be essential for the Fourth Industrial Revolution. It is important to think how to educate our young people, we need to close the educational gap, we need to bet more on STEM [...] and to prepare our young people to use innovation to build a better continent".

H.E. MR. PEDRO LOPES, CABO VERDE
*Secretary of State for Innovation and TVET,
Government of Cabo Verde*

LOCAL INNOVATION

"With the pandemic that we are currently going through, the one thing that has become clear is that local innovators can build incredible solutions for their economies, so all we are asking is that different governments begin to think about the money that they have to spend on technology, and basically give the hubs and innovators the opportunity to implement".

MS. NEKESA WERE
Director, Afrilabs

DIGITAL COOPERATION

"The Fourth Industrial Revolution should be able to determine who is supposed to be a part of it and come to the table. If we want Africa to change, we have to mainstream digitalization in all processes; there's no exception at all. The people at the forefront are the governments, but they cannot run the business on their own. They need the private sector, academia, fintech, they need everyone to be apart of it. It's not one person's business, it's the business of everyone everywhere".

MR. OLIVER CHINGANYA
Director, African Centre for Statistics

INVESTMENT IN DIGITAL INFRASTRUCTURE

"Since a lot of Lower Income Countries cannot share the burden of creating super-fast, reliable, affordable connectivity, especially for the bottom three billion who reside in Africa, African governments themselves cannot shoulder this responsibility, so the urgency of this investment cannot be stressed enough. Plus, the international community would have to help invest and explore innovative financing agreements with experimentation in emerging technologies".

MR. RAVI GUPTA
CEO, Tambourine Innovation Ventures

DIGITAL TRANSFORMATION

"We have a lot of strategies, policies. Let's make a concrete action plan on how to get there by involving experts who know exactly what digitalization means, not only ICTs but digitalization according with manufacturing technologies. Industry is key to developing our countries".

PROFESSOR MBANG SAMA
Head of Digitalization, Mercedes-Benz Operations(Daimler) and Founder, Digital Transformation Al-liance
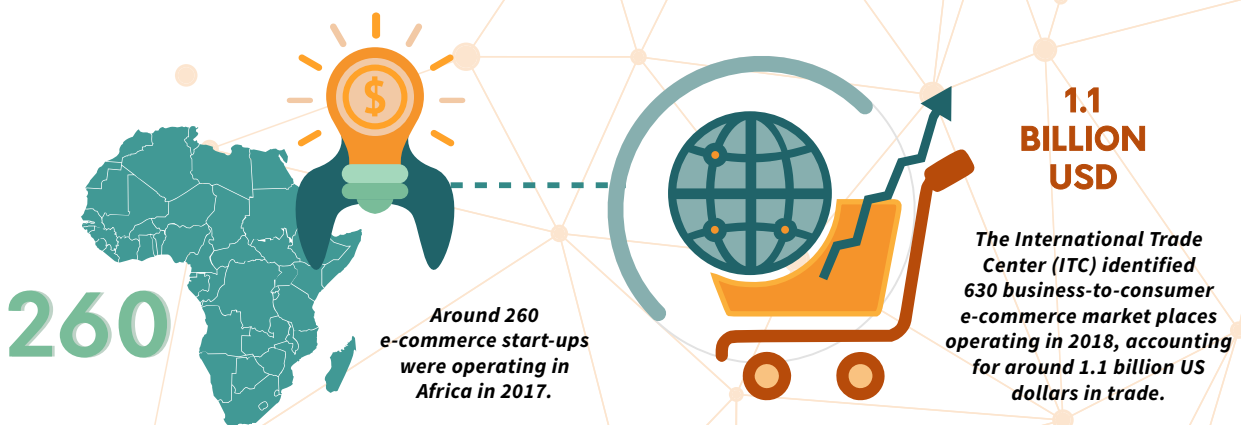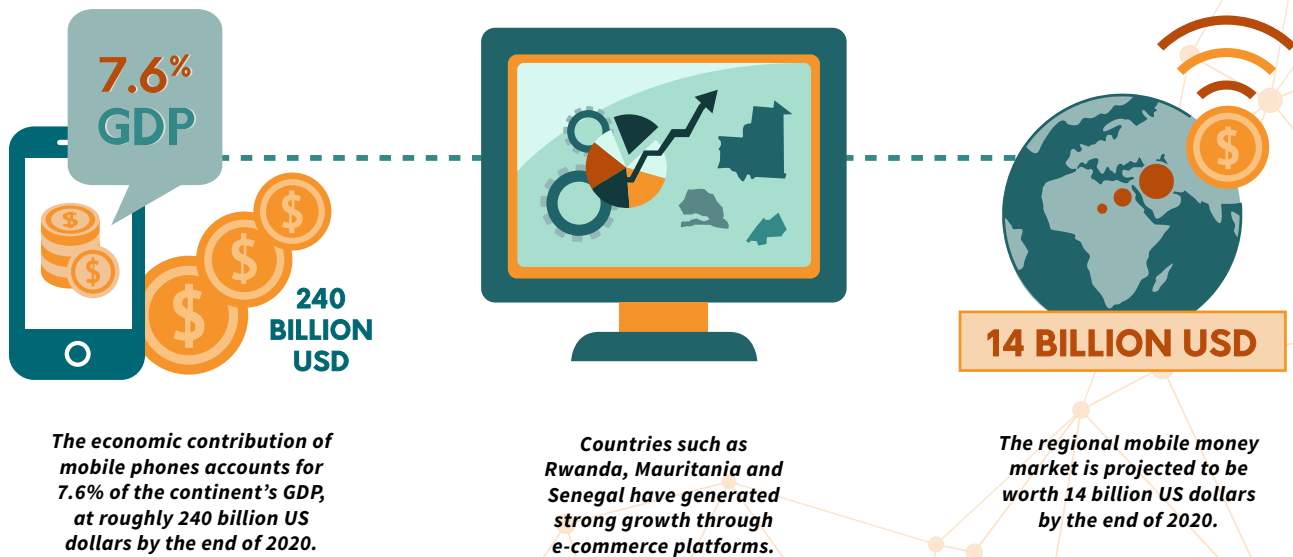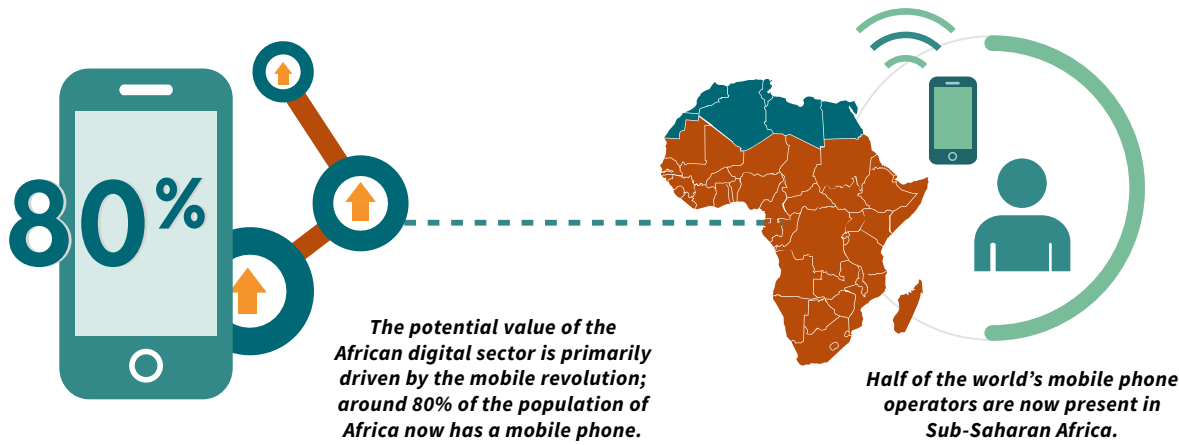
INCLUSIVITY

"The digital sector is an industry; it is a business… I think one really important thing is that these are respected as business leaders, and not as fun, young people doing fun stuff. They are the ones who are going to drive our economies forward, and we cannot do that if we don't respect them as full industry leaders".

MS. REBECCA ENONCHONG
CEO and Founder, AppsTech

Several statistics illustrating the growth of the digital sector and its social benefits were shared during the session:

80%

The potential value of the African digital sector is primarily driven by the mobile revolution; around 80% of the population of Africa now has a mobile phone.

Half of the world's mobile phone operators are now present in Sub-Saharan Africa.

7.6% GDP

240 BILLION USD

The economic contribution of mobile phones accounts for 7.6% of the continent's GDP, at roughly 240 billion US dollars by the end of 2020.

Countries such as Rwanda, Mauritania and Senegal have generated strong growth through e-commerce platforms.

14 BILLION USD

The regional mobile money market is projected to be worth 14 billion US dollars by the end of 2020.

260

Around 260 e-commerce start-ups were operating in Africa in 2017.

1.1 BILLION USD

The International Trade Center (ITC) identified 630 business-to-consumer e-commerce market places operating in 2018, accounting for around 1.1 billion US dollars in trade.

Mobile Economy in Sub-Saharan Africa

UNIQUE MOBILE SUBSCRIBERS

2019 - 2025
CAGR: **4.3%**

2019
$ **477m**

2025
$ **614m**

45% — PENETRATION RATE — **50%**
% OF POPULATION
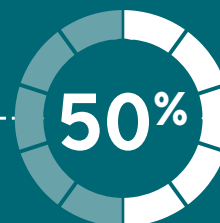
MOBILE INTERNET USERS

2019 - 2025
CAGR: **9.7%**
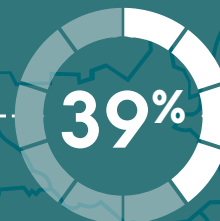
2019
$ **272m**

2025
$ **475m**

26% — PENETRATION RATE — **39%**
% OF POPULATION

SIM CONNECTIONS

Excluding Licensed Cellular IoT
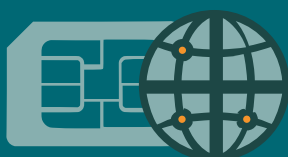
2019 - 2025
CAGR: **4.3%**

2019
$ **816m**
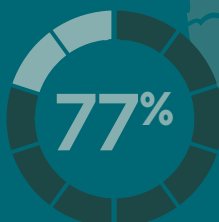
2025
$ **1.05bn**

77% — PENETRATION RATE — **86%**
% OF POPULATION
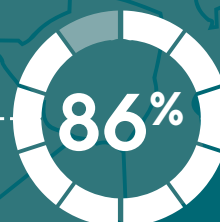
OPERATOR REVENUES AND INVESTMENT

2019

OPERATOR REVENUES

$ **44.3bn**

2025

OPERATOR REVENUES

$ **48.7bn**

OPERATOR CAPEX OF $52 BILLION FOR THE PERIOD 2019 - 2025

SMARTPHONES

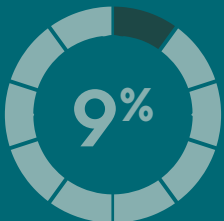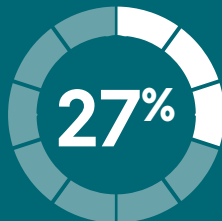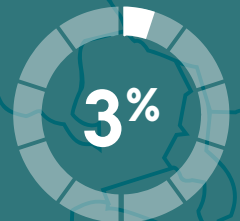**% OF TOTAL CONNECTIONS**
Excluding Licensed Cellular IoT

2019

44%

2025

65%

4G

2019

9%

2025

27%

% OF TOTAL CONNECTIONS
Excluding Licensed Cellular IoT

5G

5G

30m
CONNECTIONS

2025

3%

% OF TOTAL CONNECTIONS
Excluding Licensed Cellular IoT

MOBILE INDUSTRY CONTRIBUTION TO GDP

2019
$ **155bn**

2025
$ **184bn**

9%
OF GDP

PUBLIC FUNDING

2019

$ **17bn**

MOBILE ECOSYSTEM CONTRIBUTION TO PUBLIC FUNDING

(Before regulatory and spectrum fees)

EMPLOYMENT

2019

650,000

JOBS FORMALLY SUPPORTED BY THE MOBILE ECOSYSTEM

+ 1.4m informal jobs

The Way Forward

Coordination and cooperation among continental institutions and strong partnerships at regional and global levels are essential to pursuing the digitalization agenda of the continent. The side event titled "Digital Transformation Strategy in Action: Developing a Roadmap towards the Fourth Industrial Revolution in Africa" enabled the identification of synergies and opportunities for enhanced collaboration between the public and business sector and the innovation ecosystem stakeholders, to achieve an inclusive, gender-responsive, sustainable digital transformation in Africa in the AfCFTA context.

The event was a first step toward the development of a **continental mapping of innovation and digitalization** initiatives, policies, strategies and stakeholders, to improve coordination, identify potential synergies and support the scaling-up of pioneering initiatives. The consensus points from this side event will also be brought forward to inform the discussion on the implementation of the African Union Strategy for Digital Transformation (2020-2030), during the AU Assembly in February 2021, as well as the AU Summit on Industrialization and Economic Diversification 2021.

These will also feed into existing industrialization and digitalization endeavours on the UNIDO side, such as the **Third Industrial Development Decade for Africa [IDDA III]** (2016-2025) and the UNIDO Programme for Country Partnership [PCP] (several of which are being implemented in African countries).

There is scope to accelerate **digital cooperation and partnership** initiatives for digital manufacturing between global and regional actors inter alia UNIDO, UNECA and the African Union. Leveraging such partnerships could significantly multiply the effectiveness of our respective interventions for advancing the digital transformation of Africa and its inclusive and sustainable industrial development.

We look forward to harnessing our shared expertise, resources, convening power and networks in pursuit of these shared goals.

ANNEX: PARTICIPATING ENTITIES

ENTITY	INITIATIVES

Government of Cabo Verde

As State Secretary for Innovation and TVET, Cabo Verde, Mr. Lopes oversees a wide range of investment, digitalization, training and upskilling initiatives.

[Cape Verde's Digital Strategy](#) (EDCV), seeks to advance "a connected Cape Verde, with itself and with the world, developed, inclusive, democratic, open to the world, modern, safe, where full employment and full freedom prevail ".

- **Cabo Verde Digital** is a government strategy to foster IT and technology solutions across all nine islands of the country, establishing the basis of a start-up ecosystem.

- The **Cabo Verde Digital Voucher** is a government initiative to support 100 young people and 50 startups with pocket money, mentorship and incubation services alongside universities and IT companies as a way to help young entrepreneurs set up new tech companies and startups in Cabo Verde.

- The **Code for All programme** is a free intensive training course in coding languages. It is set up for unemployed people with less than 35 years of age, fairly fluent in English, and besides the training, the program will also support the trainees with employment. Kode Verde is a partnership between Cabo Verde Digital and Academia de Código.

- The government is investing in technology parks which foster capacity building in digital qualified human capital through training and developing an education curriculum for the young people in the nation.

- The nation is training the unemployed into digital coders so that the use of 4IR technologies becomes the norm.

AfriLabs

AfriLabs is a network organization of 225 innovation centres across 47 African countries. It supports hubs to raise successful entrepreneurs that will create jobs and develop innovative solutions to African problems.

AfriLabs aims to encourage technology, innovation and entrepreneurship in all forms; promote the creation of African-made technology; and provide an environment characterized by open collaboration, technical innovation and support for the technological community at large.

- AfriLabs has established a capacity building program for digitalization called **Digital Africa Seed Fund** with the objective of strengthening African hubs through instituting an innovation ecosystem, while at the same time boosting investment in digital start-ups in the economy.

- The **Catalyst Program** is a cross-stakeholder initiative of AfriLabs in conjunction with **ABAN**, the largest network of Angel Investors in Africa, that aims to strengthen entrepreneurs and start-ups, hubs and angel investors, while delivering impact results to institutional funders.

- The **EdTech Hub** is a collaboration between the Overseas Development Institute, Faculty of Education at the University of Cambridge, Results for Development, Open Development and Education, Brink, Jigsaw Consult, BRAC, AfriLabs, and eLearning Africa.

- **Project Rollo** is a capacity building program dedicated to inspiring and supporting Small African enterprises in African countries facing challenges to survive after Covid-19 outbreak. It is composed of an intensive online bootcamp where business owners and their teams will be asked to develop and execute strategies in a competitive risk-free environment with different market outlooks.

Tambourine Innovation Ventures

Tambourine Innovation Ventures (TIV) is a technology and venture development firm dedicated to poverty alleviation and sustainable growth through innovation. The company's core focus is on bringing technological innovations to market, with an emphasis on the Base of the Pyramid.

They create, nurture and scale sustainable entrepreneurial ventures in emerging markets that have positive economic, environmental and social benefits.

- TIV has produced several knowledge products related to the Fourth Industrial Revolution and contributed to publications like the UNIDO document **Industry 4.0 Opportunities Behind the Challenge**.

- In partnership with the AfDB, TIV developed a **Study on Unlocking the Potential of the Fourth Industrial Revolution in Africa**, researching on the adoption of 4IR technologies in Africa at the same time bringing awareness of the emerging technologies on the continent.

- TIV utilized their technology commercialization and transfer expertise in a comprehensive road mapping and readiness as-sessment for digitalization in the sectors of greatest importance to the economy of Africa.

- Insights from their broad and deep reservoir of expertise helps strengthen the capacity of ventures and clients to address challenges raised by technological advances, environmental concerns, increasing pressure on resources, and globalization.

Digital Transformation Alliance

The Digital Transformation Alliance (DTA) is a global, non-profit organization of leaders, entrepreneurs, institutions, communities from global digital and technology-based business and economy, united by our vision of a vibrant inclusive and sustainable innovation economy that benefits everyone.

Its purpose is an inclusive, sustainable digital economy where everyone can access and master digital skills to create and shape one's own future and thus achieve one's own vision and a better quality of life.

- DTA connects, shares, disseminates, showcases, empowers, ena-bles and co-creates content, solutions, and new opportunities. They advance excellence in education, research and entrepreneurship to support the growth of high-impact industries, the creation of high wage jobs and inclusive economic prosperity.

- DTA is nurturing a strong multilateral ecosystem for a sustaina-ble digital and innovation economy through capacity building initiatives and the creation of **Digit-Tech Factory Lab**.

- **DITREX-Africa** is a multi-sectorial technological innovation and experience platform organized by DTA and aimed to harnessing sustainable and inclusive development in African countries.

- DTA also organizes **Connected Classrooms**, a smart framework for connected and interactive classrooms and universities to support an online learning market.

- DTA has programmes to support policymakers, write reports and trends, conduct research, elaborate and establish standards to facilitate the development and transformation towards digitally sound infrastructures and platforms.

AppsTech

AppsTech is a leading global provider of enterprise application solutions, offering a full spectrum of products and services to serve all enterprise software requirements, from architecting a solution, license sales, implementation, integration, training and application management services.

- AppsTech's integrated solutions, powered by Oracle, help clients to streamline their operations, gaining greater visibility into their supply chains, optimize their assets, and better manage their human resources.

- With offices on three continents, AppsTech has done work in over 25 countries and provided support to users in over 50 countries.

- Its founder, Ms. Rebecca Enonchong, has also co-founded and chaired the **Africa Technology Forum**, a Maryland-based nonprofit initiative to encourage and educate Africans, women in particular, on the use of technology.

- She also co-founded and chairs **ActivSpaces** (African Center for Technology Innovation and Ventures), Cameroon's Leading Tech Hub.

African Centre for Statistics

The African Centre for Statistics of UNECA aims to be the first port of call for African states seeking original data to inform policy decisions and to serve as a regional service centre for data on economic, social, demographic, and environmental conditions in African countries.

United Nations
Economic Commission
for Africa

- The Centre published several **articles** on Digitalization, the role of digitalization in the Decade of Action for Africa, Digital Africa and others articulating the need for Africa to harness digitalization, especially now with the Covid-19 pandemic hovering worldwide.

- The Centre has also released several publications on the role of open data such as the **Africa Data Revolution Report 2018** and on the **impact of Covid-19**.

- UNECA is hosting events which accelerate the awareness of industry 4.0 technologies to promote adaptation to and investment in emerging technologies, i.e. **The Nanotech Innovation and Investment Forum**, for a transformed and prosperous Africa, taking place in December 2020.

- UNECA also embarked on the digital initiative **DITE for Africa** to support African countries in fully harnessing the opportunities of digital identity (ID) to facilitate the provision of legal identity for all Africans and to leverage digital trade in the AfCFTA.