

FGAI4H-N-055-A01

E-meeting, 15-17 February 2022

Source:	WG-CO	
Title:	Att.1 - Scoping of the current state of digital tools in Africa	
Purpose:	Discussion	
Contact:	Tafadzwa Matika University of Oxford	E-mail: tafadzwa.matika@ndm.ox.ac.uk
Contact:	MaryJane Ijeoma Nweje University of Oxford	E-mail: maryjane.nweje@ndm.ox.ac.uk
Abstract:	This PPT contains a presentation from the "Catalysing Digital and AI Innovations for Health: Sharing Experiences from Africa and Asia" series.	



The State of Digital Tools in Africa

ITU/WHO Presentation
17th February 2022
9am GMT

Dr MaryJane Ijeoma Nweje
Tafadzwa Matika

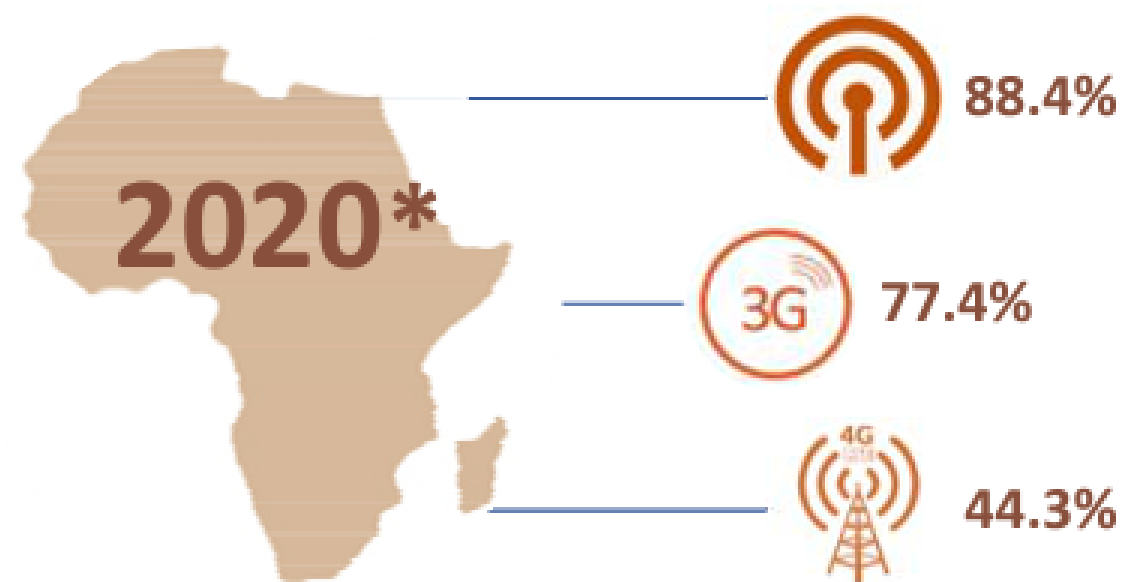


Outline

- **Background**
- **Overview of Digital Tools**
 - Health, Education, Payments & Finance, Agriculture
- **Discussion**
- **Conclusion**

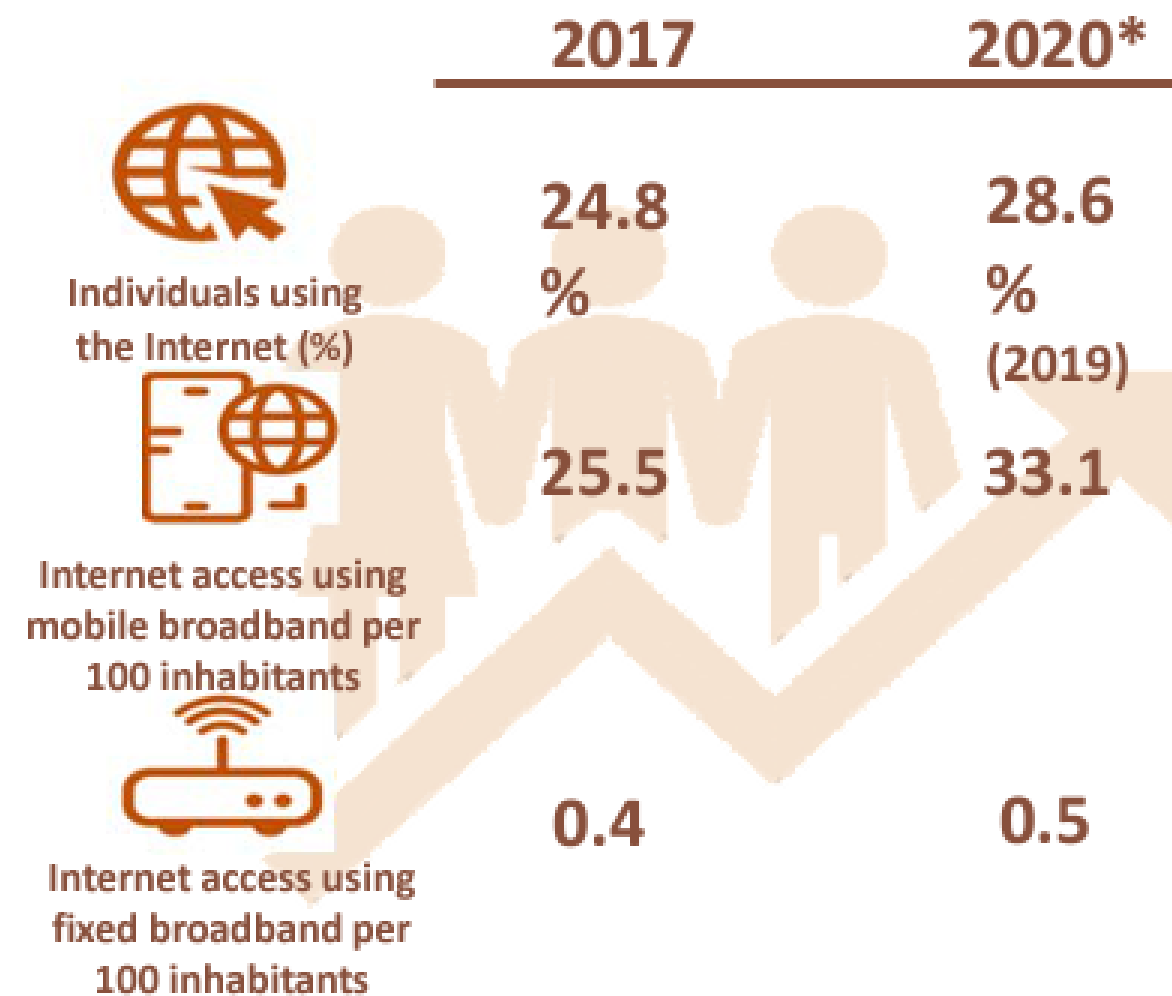
Key ICT Indicators for Africa

Mobile network coverage

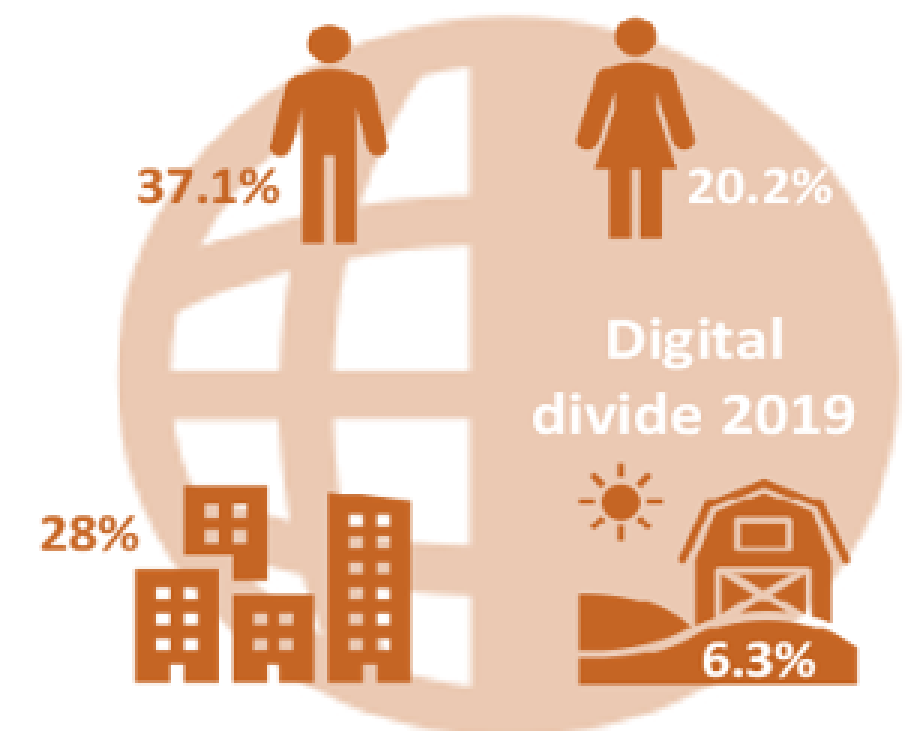


*Estimate

Internet access and use



Digital divide



Digital Tools Context

Where are we today?

- Digital tools are proliferating on the continent supported by key enabling factors
- Venture Capital is transforming the landscape of digital tools in Africa
- There is significant heterogeneity in the development and adoption of digital tools across African countries

Total funding raised by start-ups in 2021

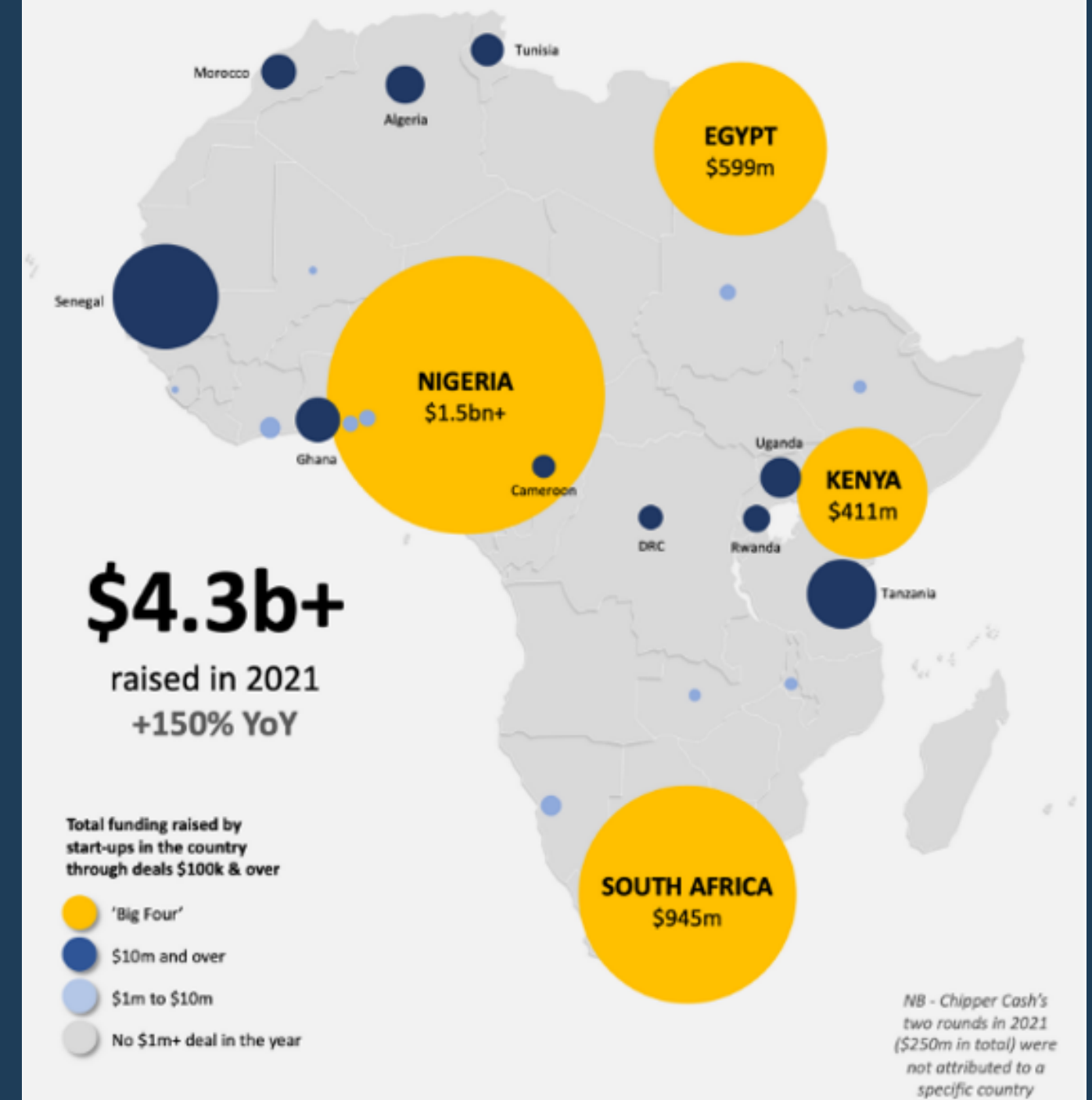


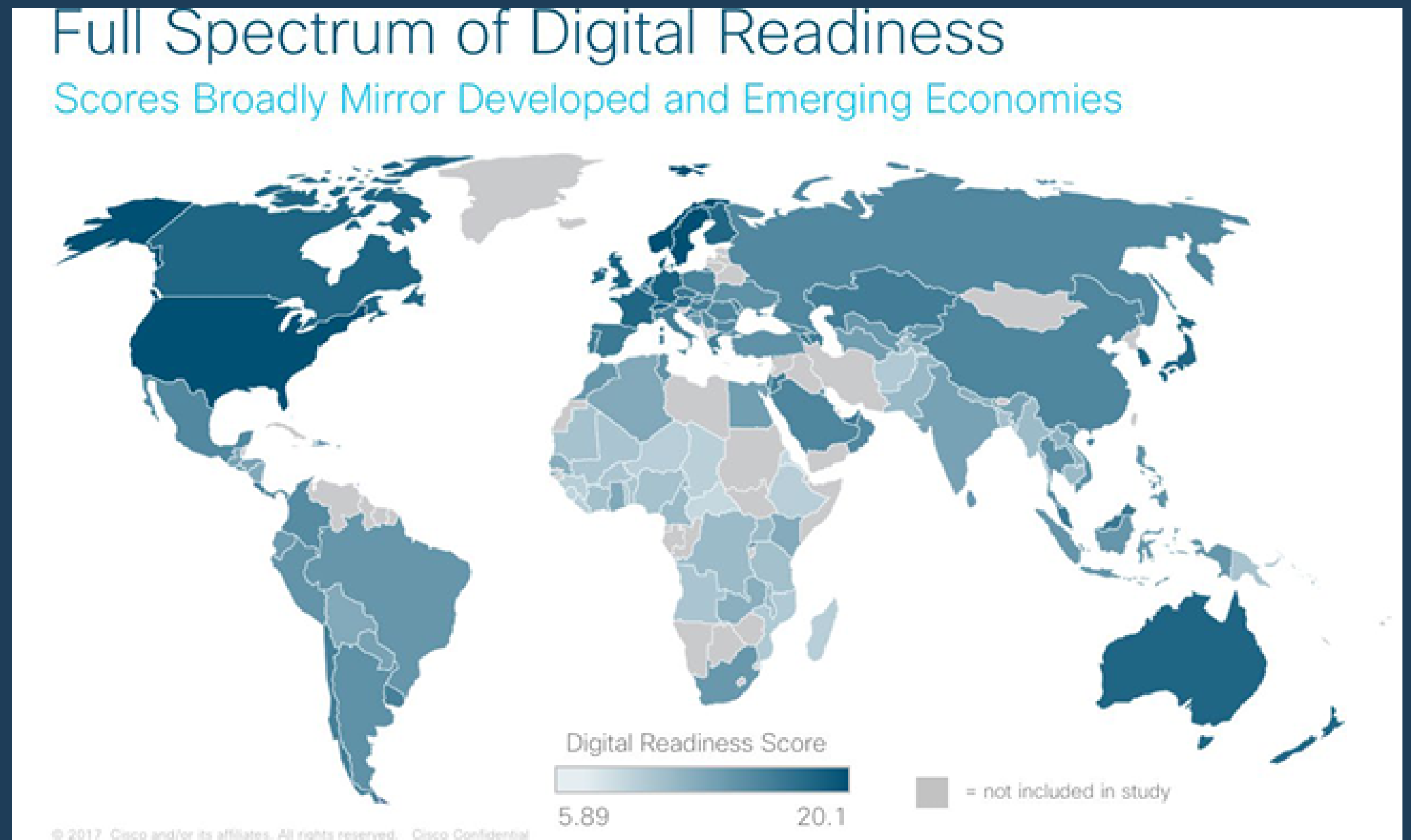
Image Source :Max Cuvelier.

Available from <https://thebigdeal.substack.com/>

Digital Readiness of African Countries

- There is significant heterogeneity in digital readiness by country
- Many countries are still starting their digital readiness journeys

Images extracted from Yoo, de Wysocki and Cumberland, 2018. Available at [Country-Digital-Readiness-White-Paper-US \(cisco.com\)](https://www.cisco.com/c/en/us/solutions/collateral/white-papers/pdf/C97877.pdf)



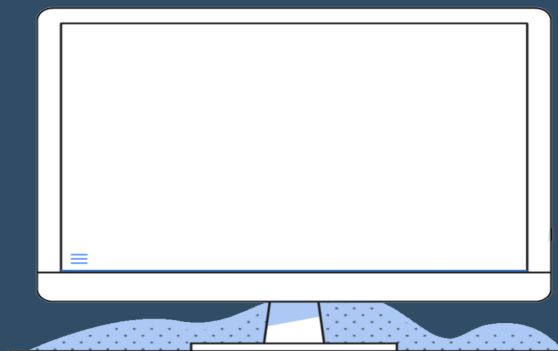
Thematic Areas of Major Digital Tools in Africa



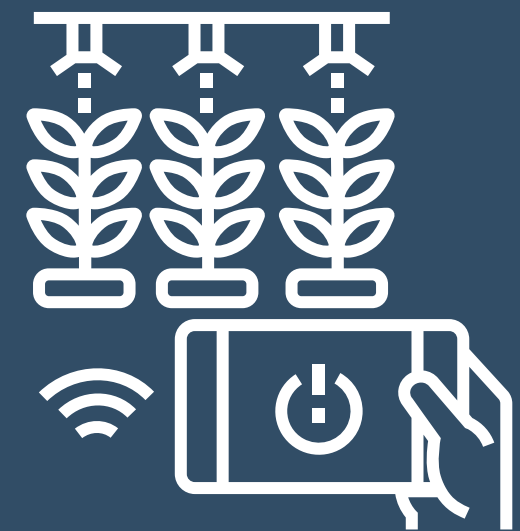
DIGITAL
HEALTH



DIGITAL
PAYMENTS



EDUCATION



AGRICULTURE

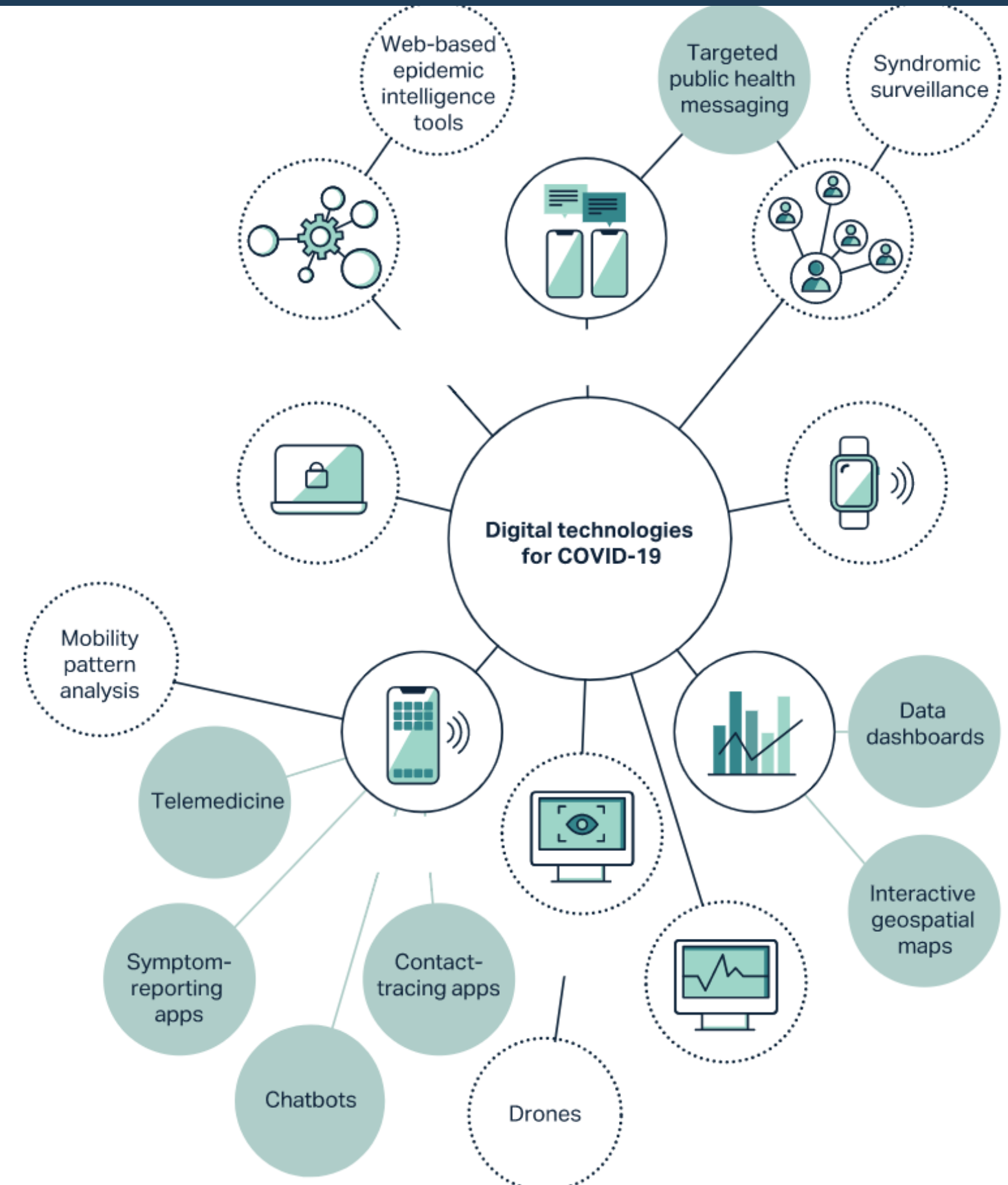


DIGITAL HEALTH

Digital Health in Africa

Outpatient care, disease surveillance and prevention and health promotion.

COVID-19 and Digital Tools



Source: Exemplars in Global Health- Digital Health Tools



OVER

120

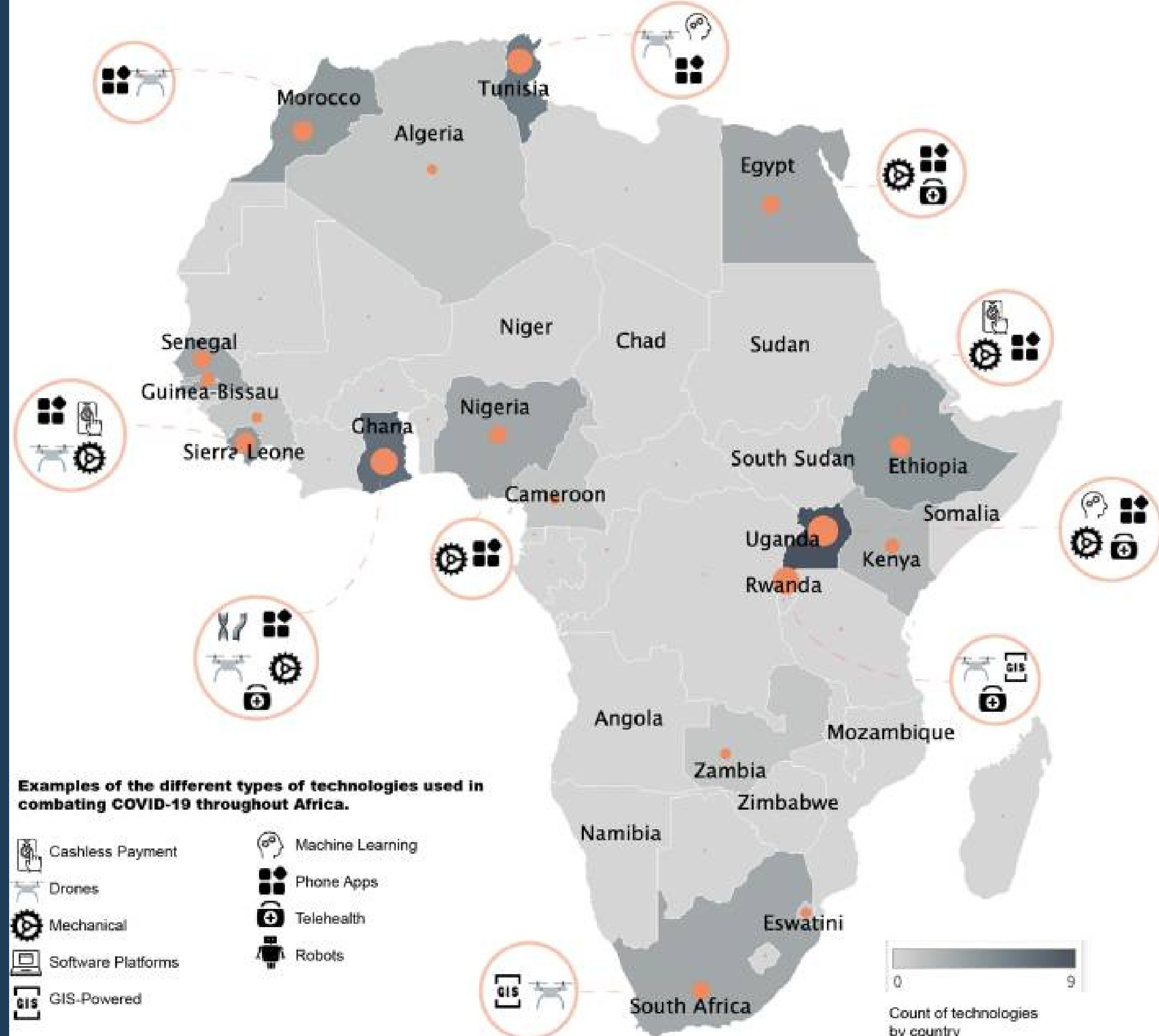


**DIGITAL HEALTH TOOLS TO TACKLE THE
COVID-19 PANDEMIC**

Source: WHO Africa-COVID-19 Spurs Health Innovation in Africa

COVID-19 and Digital Tools

- Most innovations - South Africa (13%), Kenya (10%), Nigeria (8%) and Rwanda (6%).
- Burkina Faso - Commcare
- Nigeria - Surveillance Outbreak Response Management and Analysis System (SORMAS)



The background is a dark blue, semi-transparent overlay on a photograph. The photograph shows a close-up of a computer keyboard with a pen resting on it. The keys are visible, and the pen is positioned diagonally across the frame. The text 'DIGITAL EDUCATION' is centered in the middle of the image in a bright blue, bold, sans-serif font.

DIGITAL EDUCATION



Education

Education in Africa

- **Increase in education enrolment and completion.**
- **Challenges: Inequalities, access to education, completion of education, quality of education, teacher training and remuneration - Learning Crisis**

COVID-19 and Education

- **Closure of schools around the world in 2020, over 1.5 billion children and young people out of school.**
- **Learning loses**
- **Impact on mental health and the economy**
- **Distance, digital, parental**



EdTech on the Continent

- **Akili and Me- Tanzania, Africa**

- **GIS - Tanzania**

What is working?

- **Educational messaging apps, SMS, social media, television and radio.**
- **Educational radio and television - are more advantageous as they are cost-effective bypassing the need for expensive devices and internet connectivity.**
- **Parental Engagement**

The background of the image is a dark blue, semi-transparent overlay on a photograph. The photograph shows a close-up of a computer keyboard with a pen resting on it. The keys are visible, and the pen is positioned diagonally across the lower right portion of the frame. The overall aesthetic is professional and tech-oriented.

DIGITAL PAYMENTS & FINANCE

Only 5% of
\$2.1 TN



IN PAYMENTS ARE CURRENTLY DIGITIZED
IN AFRICA

Source: Akpata, O., 2022. Who Will Capture The Merchant Payment Opportunity In Africa?

OBSERVATIONS IN DIGITAL PAYMENTS

Flutterwave, Opay,
Interswitch

PAYMENT INFRASTRUCTURE

Payment gateways are facilitating more transactions across the continent

Mastercard, Visa
direct, SWIFT gpi

SECURE PAYMENTS

Payment processors are making it easier and faster to engage in secure global transactions

M-PESA, Ecocash,
Orange Money

MOBILE MONEY

Mobile money continues to dominate digital transactions. In 2020, Africans exchanged \$490 billion using mobile money providers alone

The rest of Fintech, like digital payments, is booming too

Image source: Shah, R., 2022. The ultimate guide to Africa fintech | Tellimer.

Country	Payments	Lending	Remittance	Investech	Insurtech	BlockChain/ CryptoCurrency	Specialised
Algeria	TPAY MOBILE		WorldRemit		DabaDoc	Binary.com	mubawab
Egypt	Fawry	capiter.	DAYRA	thndr	HOOD	yellow	MoneyFellow
Ethiopia	EP EthioPay	BelCash	paga	jamiipay	PULA	atala	YERAS GEBEYA
Ghana	MTN	carbon	Zeepay	invest mobile	WorldCover	BitPesa	agrocen
Kenya	M-PESA	kiva	SimbaPay	[ABACUS]	bismart	Bitsoko	FarmDri
Lesotho	Cassava	Smartel Money	Mukuru			SpectroCoin	
Mozambique	QUICK-E-PAY	GetBucks	Mukuru	Socremo	ASKARI	PAXFUL	ROBOBO
Nigeria	Interswitch	FairMoney	SureRemit	piggyvest	AutoGenius	kobocoin	farmcr
Rwanda	mobicash	airteligo	mergims	save.	RADIANT	coinbase	Qzuri
Senegal	Orange Money	matontine	Wafacash	matontine	PlaNet Finance	CoinAfrique	LEMONWA
South Africa	SnapScan	JUMO	hellopaisa	EasyEquities	LUMKANI	sunexchange	MORTGAGE MARKET
Tanzania	MaxMalipo	TALA	Sendwave	haloyako	Jamii	humaniq	-TRADER
Uganda	cellulant	NUMIDA	remit	ensibuuko	BIMA	BINANCE	awamo
Zambia	ZAZU	MFinance	SureRemit	KwikFjn	Hollard.	Bitcoin	VITALITE
Zimbabwe	EcoCash	GetBucks	Sasai	BAOBAB	Cassava	BITMARI	Hillsphere



AGRICULTURE

In Africa there are more than

400



DISRUPTIVE AGRICULTURE TOOLS IN USE

Source: CTA THE DIGITALISATION OF AFRICAN AGRICULTURE REPORT 2018–2019

Sampling of Ag-Tech in Africa shows that:

- Digital tools exist for a variety of use cases in Africa
- Despite the abundance of digital tools, only few are scalable.

TABLE ES.1 Agricultural challenges and relevant examples of DATs in Africa

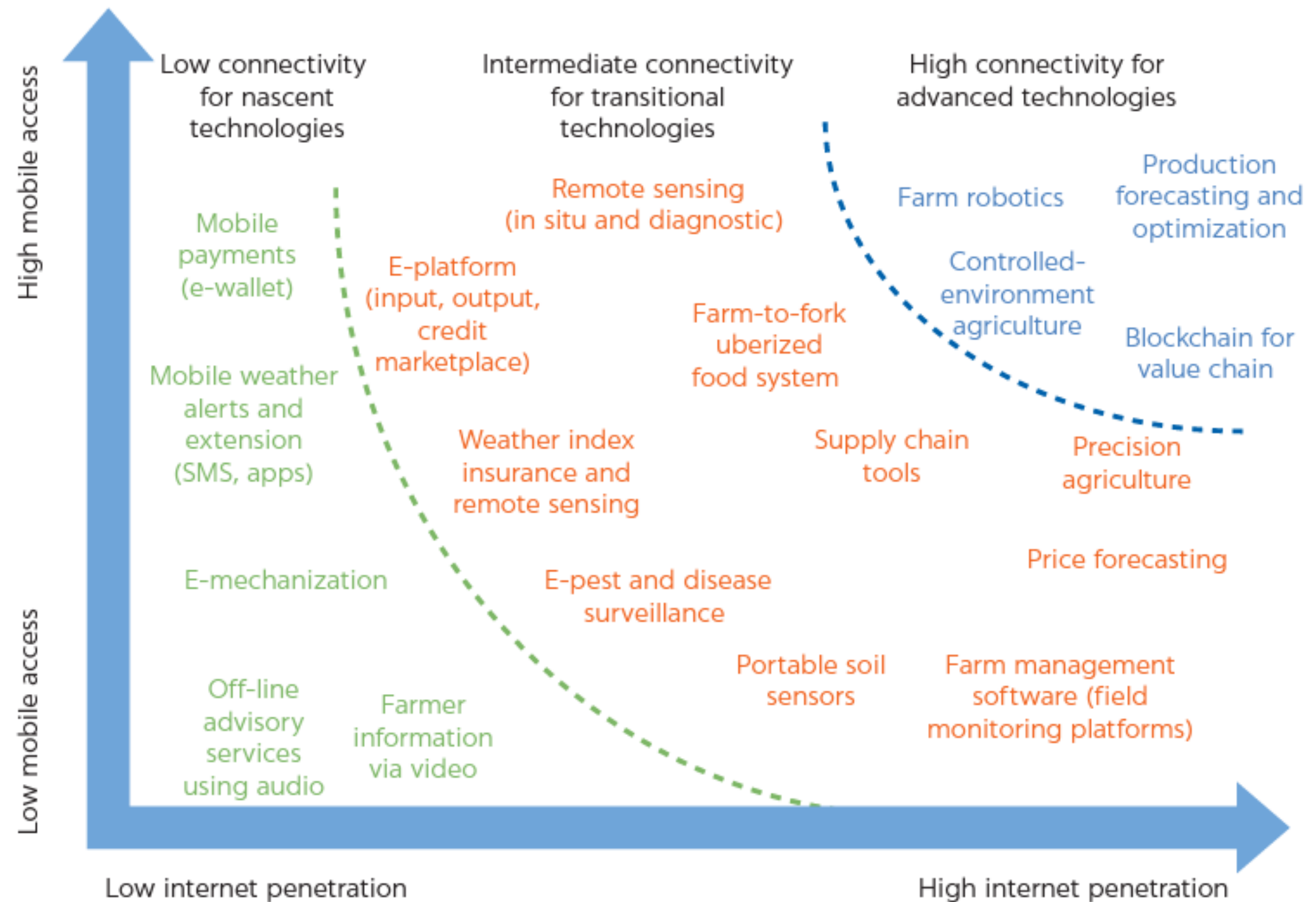
CHALLENGE FRAMEWORK	AGRICULTURAL CHALLENGES	STANDARD AGRICULTURAL SOLUTIONS	DAT SOLUTIONS	ILLUSTRATIVE DAT EXAMPLES
Agricultural productivity	Insufficient advisory and climate-smart services	Producer organizations, extension agents, radio, TV	Agricultural extension and advisory services delivered through videos and platforms linking experts	Digital Green in Ethiopia; Precision Agriculture for Development in Kenya
	Limited access to inputs (tractors) for land preparation	Manual, animal-aided, mechanized	Digitally enabled tractor-hiring services	Hello Tractor in Nigeria
	No systematic pest and disease management	Observe and respond	Real-time alert systems	Waterwatch Cooperative in Kenya
Market links	Poor market access	Farmer cooperatives, intermediaries	Digital platforms for finding buyers and linking buyers and sellers	Tulaa in Kenya; Maano in Zambia; Farmshine in Kenya; Zowasel in Nigeria
Farmer financial inclusion	Insufficient or unfair access to credit and financial products	Moneylenders, family and friends	Platforms for input credit, e-wallets, and insurance products	Agri-wallet in Kenya
Data analytics and agricultural intelligence	No or inadequate access to data for informed decision-making	Intuition based on observation, no solution	Portable soil testers, satellite images, remote sensing	Agrocares, based in the Netherlands and operating in Kenya; UjuziKilimo in Kenya
Energy for agriculture	Poor irrigation infrastructure	Rainfed, manual, gravity-aided	Solar-powered irrigation pumps	SunCulture in Kenya

Source: World Bank.
 Note: DATs = disruptive agricultural technologies.

Recent learnings suggest that for Ag-tools to really reach scale, they need to be customized and designed to fit the environment.

FIGURE ES.1

Digital agriculture continuum



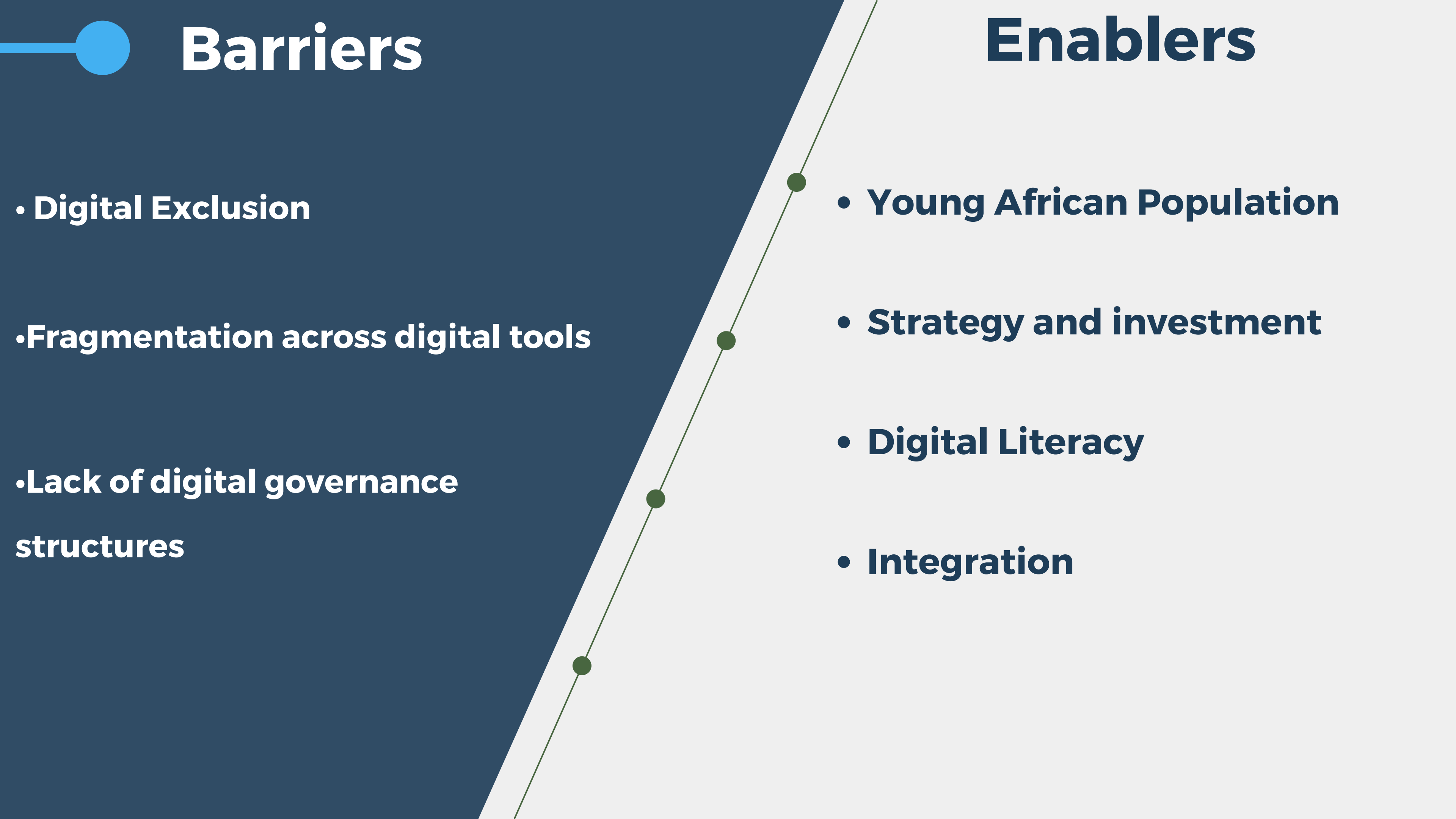
Source: DAT database.

Note: DATs operate across a range of connectivity scenarios. DATs = disruptive agricultural technologies; SMS = short message service.



Discussion

- 
- What are the existing cross-cutting barriers and enablers of the expansion of digital tools in Africa?
 - Where is the future of digital tools in Africa going?
 - What major gaps currently exist?



The Future of Digital Tools

- **Increase digital future-focused policies.**
- **Greater internet connection on the continent.**
- **Investment in more digital ecosystems.**
- **Dominance of venture capital for digital start-ups.**
- **More digital businesses.**

Major Existing Gaps

- **Digital inequities and social inequities**
- **Reflexive Innovation**
- **Digital governance and Data Protection**
- **Robust research for evidence-based decision making**

Conclusion

- **Digital tools hold the promise of progress across various sectors**
- **Africa is undergoing a digital revolution**
- **Digital tools will not solve Africa's challenges right away**
- **Nascent digital ecosystem**
- **Equity and robust protective legislation**

REFERENCES

- African Union-The Digital Transformation Strategy of Africa (2020-2030) <https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf> (Accessed 10th February 2022)
- Akili and Me <https://akiliandme.com/> (Accessed 10th February 2022)
- Akpata, O., 2022. Who Will Capture The Merchant Payment Opportunity In Africa?. Forbes. Available at: <https://www.forbes.com/sites/columbiabusinessschool/2021/06/04/who-will-capture-the-merchant-payment-opportunity-in-africa>. (Accessed 10 February 2022)
- Allen, N., 2022. The promises and perils of Africa's digital revolution. [online] Brookings. Available at: <https://www.brookings.edu/techstream/the-promises-and-perils-of-africas-digital-revolution>. (Accessed 10 February 2022)
- Archit Lohani, Embedding Technology in Education: The Potential of India's Solutions in East Africa ORF Occasional Paper No. 306, March 2021, Observer Research Foundation. https://www.orfonline.org/wp-content/uploads/2021/03/ORF_OccasionalPaper_306_EdTech.pdf(Accessed 10th February 2022)
- Centre for Strategic and International Development-Digital Africa: Leveling Up through Governance and Trade <https://www.csis.org/analysis/digital-africa-leveling-through-governance-and-trade>. (Accessed 10th February 2022)
- Cuvellier, M., 2022. Africa: The Big Deal. Available at: <https://thebigdeal.substack.com>. (Accessed 10 February 2022)
- Digitalisation and jobs in Africa under COVID-19 and beyond. https://www.oecd-ilibrary.org/development/africa-s-development-dynamics-2021_34fe3890-en. (Accessed 10th February 2022)
- Duffy, A., 2022. African Tech Ecosystems of the Future — the dawn of a new era. [online] Fdiintelligence.com. Available at: <https://www.fdiintelligence.com/article/79638>. (Accessed 10 February) 2022].
- EdTech Hub June 2020 Educational Television: A Rapid Evidence Review. <https://docs.edtechhub.org/lib/BVXSZ7G4>
- EdTech Hub June 2020- Radio: A Rapid Evidence Review <https://docs.edtechhub.org/lib/YMWE6FR6> (Accessed 10th February 2022)
- EdTech Hub September 2020-Messaging Apps, SMS, and Social Media: A Rapid Evidence Review <https://docs.edtechhub.org/lib/XHBPFYVC> (Accessed 10th February 2022)
- Exemplars in Global Health- Overview Digital Health Tools <https://www.exemplars.health/emerging-topics/epidemic-preparedness-and-response/digital-health-tools>. (Accessed 10th February 2022)
- GSMA, The Mobile Economy Report Sub-saharan Africa 2020. https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/09/GSMA_MobileEconomy2020_SSA_Eng.pdf (Accessed 10th February 2022)
- Holtz, L. and Golubski, C., 2021. Figures of the week: Venture capital trends in Africa. [online] Brookings Institute. Available at: <https://www.brookings.edu/blog/africa-in-focus/2021/04/21/figures-of-the-week-venture-capital-trends-in-africa>. (Accessed 10 February 2022).
- How COVID-19 has pushed companies over the technology tipping point—and transformed business forever. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever> (Accessed 10th February 2022)
- Hugo van Manen, Paul Verhagen Joris van Schie, Michel Rademaker 2021 Digital Education in Africa- Conditions and Opportunities for Support and Collaboration. <https://hcss.nl/report/digital-education-in-africa/> (Accessed 10th February 2022)
- ITU/WHO-Digital Technologies to Achieve the UN SDGs. <https://www.itu.int/en/mediacentre/backgrounders/Pages/icts-to-achieve-the-united-nations-sustainable-development-goals.aspx>. (Accessed 10th February 2022)
- Kene-Okafor, T., 2022. TechCrunch is part of the Yahoo family of brands. [online] Techcrunch.com. Available at <https://techcrunch.com/2022/02/08/reports-say-african-startups-raised-record-smashing-4-3b-to-5b-in-2021>. (Accessed 10th February 2022)
- Kim, J., Shah, P., Gaskell, J.C. and Prasann, A., 2020. Scaling up disruptive agricultural technologies in Africa. World Bank Publications. Available at <https://openknowledge.worldbank.org/handle/10986/33961>. (Accessed 10 February 2022)

REFERENCES

- Maharana, A., Amutorine, M., Sengeh, M.D. and Nsoesie, E.O., 2021. COVID-19 and beyond: Use of digital technology for pandemic response in Africa. Scientific African, 14, p.e01041. World Bank. <https://www.sciencedirect.com/science/article/pii/S2468227621003422>. (Accessed 10th February 2022)
- Manyika, J., Cabral, A., Moodley, L., Moraje, S., Yeboah-Amankwah, S., Chui, M. and Anthonyrajah, J., 2022. Lions go digital: The Internet's transformative potential in Africa. McKinsey Global Institute. Available at: <https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/lions-go-digital-the-internets-transformative-potential-in-africa>(Accessed 10th February 2022)
- Open Knowledge Foundation - Improving geolocation data for schools in Tanzania. <https://okfn.org/what-we-do/case-studies/improving-geolocation-data-schools-tanzania/> (Accessed 10th February 2022)
- Organisation for Economic Co-operation and Development. Africa's Development Dynamics report shows digitalisation of economic sectors will kick-start a new growth cycle after COVID-19. <https://www.oecd.org/dev/africa-development-dynamics-2021-launch.htm> (Accessed 10th February 2022)
- Oyedemi, T.D., 2012. Digital inequalities and implications for social inequalities: A study of Internet penetration amongst university students in South Africa. Telematics and Informatics, 29(3), pp.302-313.
- Prioritizing Learning During COVID-19: The Most Effective Ways to Keep Children Learning During and Post-Pandemic - Recommendations of the Global Education Evidence Advisory Panel 2022. <https://documents1.worldbank.org/curated/en/114361643124941686/pdf/Recommendations-of-the-Global-Education-Evidence-Advisory-Panel.pdf>(Accessed 10th February 2022)
- Shah, R., 2022. The ultimate guide to Africa fintech | Tellimer. [online] Tellimer. Available at: <https://tellimer.com/article/the-ultimate-guide-to-african-fintech>. (Accessed 10 February 2022)
- Tsan, M., Totapally, S., Hailu, M. and Addom, B.K., 2019. The digitalisation of African agriculture report 2018-2019. CTA. Available at: <https://www.cta.int/en/digitalisation-agriculture-africa>. (Accessed 10 February 2022)
- United Nations Conference on Trade and Development (UNCTAD) - The Role of Digitalization in the Decade of Action for Africa. <https://unctad.org/news/role-digitalization-decade-action-africa>. (Accessed 10th February 2022)
- United Nations Conference on Trade and Development. COVID-19 has changed online shopping forever, survey shows. <https://unctad.org/news/covid-19-has-changed-online-shopping-forever-survey-shows>. (Accessed 10th February 2022)
- World Bank-Digital Technologies in Education Accessed <https://www.worldbank.org/en/topic/edutech#1> (Accessed 10th February 2022)
- World Bank-LEARNING to Realize Education's Promise Accessed <https://www.worldbank.org/en/publication/wdr2018> (Accessed 10th February 2022)
- World Health Organization Regional Office for Africa. COVID-19 Spurs Health Innovation in Africa. <https://www.afro.who.int/news/covid-19-spurs-health-innovation-africa>. (Accessed 10th February 2022)
- Yoo, T., de Wysocki, M. and Cumberland, A., 2018. Country Digital Readiness: Research to Determine a Country's Digital Readiness and Key Interventions. Cisco Corporate Affairs. Available at: <https://www.cisco.com/c/dam/assets/csr/pdf/Country-Digital-Readiness-White-Paper-US.pdf>. (Accessed 10 February 2022)

**THANK
YOU**

