

Harnessing Digital Technology for Africa's Economic Recovery and Transformation

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CHANGE

“The tech revolution affects every aspect of our lives. Leaders that master it will chart the future.”

Rt. Hon. Tony Blair

Former Prime Minister of Great Britain and Northern Ireland and Executive Chairman of the Tony Blair Institute for Global Change

Summary



Context

- While policymakers in Africa generally recognise digital technology's role in the continent's economic recovery and transformation, the extent of its potential is not fully captured and internalised.
- Africa's digital divide remains large, and many households and economic sectors are not yet meeting their potential.
- Yet the Covid-19 pandemic has showcased how the adoption and implementation of digital technology across sectors can play a key role in Africa's health and economic response in a crisis.



Key Findings

- Africa's digital story is linked with and dependent on the growth and development of its mobile ecosystem.
- Most Africans access the internet through mobile phones and 3G and 4G coverage, and adoption of smartphones has increased significantly in recent years. Last year the mobile economy accounted for more than 9% of Africa's GDP.
- With more than 100 new internet users per second, digitalisation in Africa is experiencing a period of unparalleled growth and since the onset of Covid-19 57% of organisations across sectors have increasingly adopted digital technology to thrive, recover and grow. As these trends accelerate due to Covid-19, it has the potential to contribute more than \$1 trillion cumulatively towards Africa's GDP (i.e. approx. 40% of current GDP) over the next six years.
- The main contribution of digital technology is so far concentrated in six sectors: finance, health, education, retail, agriculture and government. Digital transformation of these sectors can potentially create several economic and social efficiencies for millions in Africa by increasing financial inclusion, access to quality education and health services, market linkages and SME growth, better farmer incomes and food and nutrition security, and effectiveness and reach of government services. Other key sectors that are also essential for African economic recovery and transformation, such as manufacturing, transport and tourism, are currently seeing slower adoption of digitalisation.



Recommendations

- The UN estimates that it will require \$109 billion to achieve universal internet coverage in Africa by 2030.
- To further unlock digital technology's full potential for Africa's recovery and development, governments and the private sector need to work together – and also across borders – to integrate the latest globally available data platforms, networks and tech solutions into efforts to develop key sectors like agriculture, manufacturing, education, transport, finance and public services, while addressing gaps in energy and internet infrastructure, in the affordability of devices and internet, and in digital skills. These are key for foundation goals like universal internet access and digital ID.
- Leaders could mainstream prioritised efforts to address technology constraints into their top economic transformation agenda – be it economic diversification, agro-led industrialisation or other – and ensure a competitive and transparent environment to expand coverage, access, affordability and usage among people, businesses and government offices.

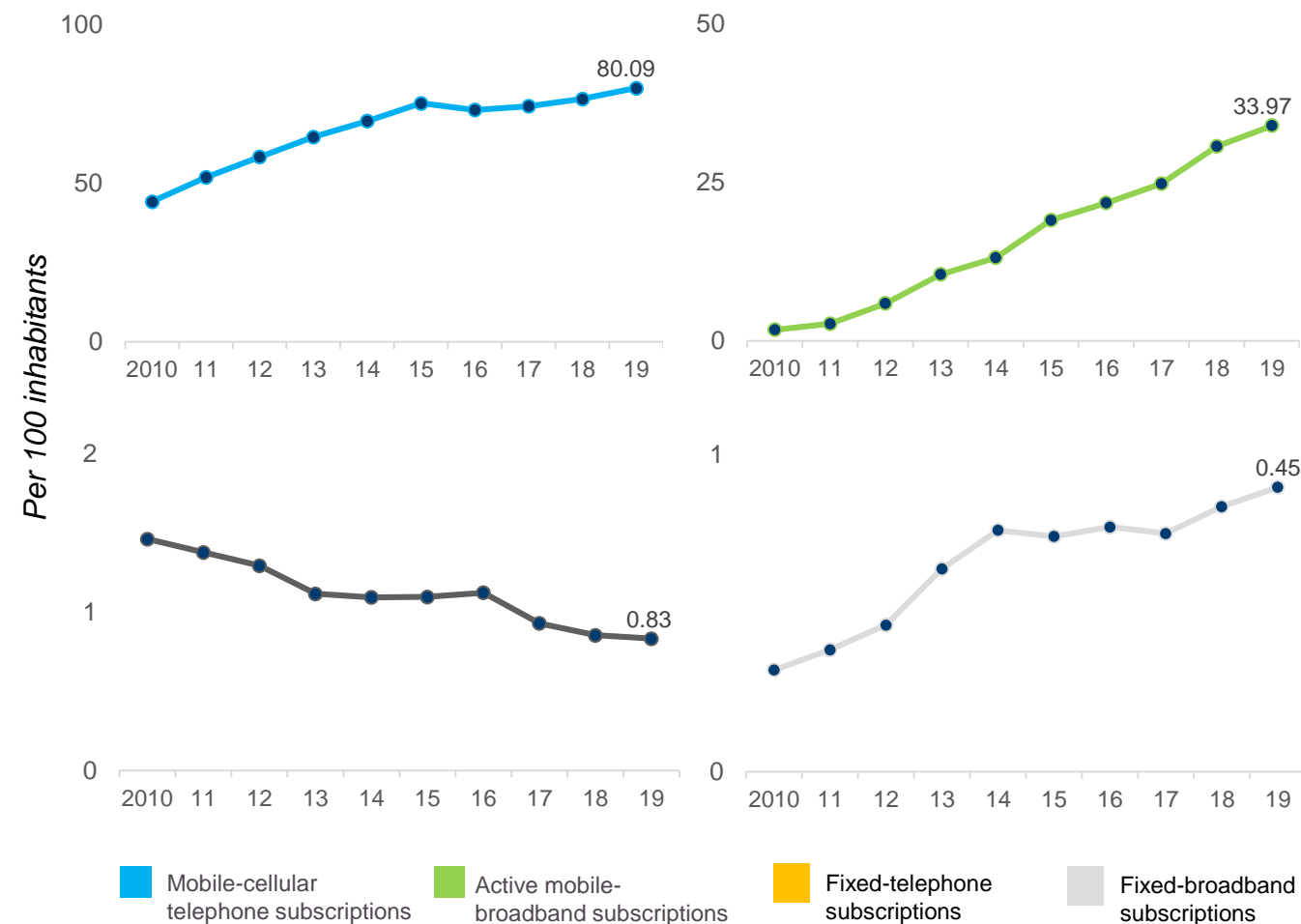
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Africa's Digital Story

The evolution of Africa's digital technology is intrinsically tied to the growth and development of its mobile ecosystem



Mobile vs. fixed subscriptions in Africa, 2010-2019

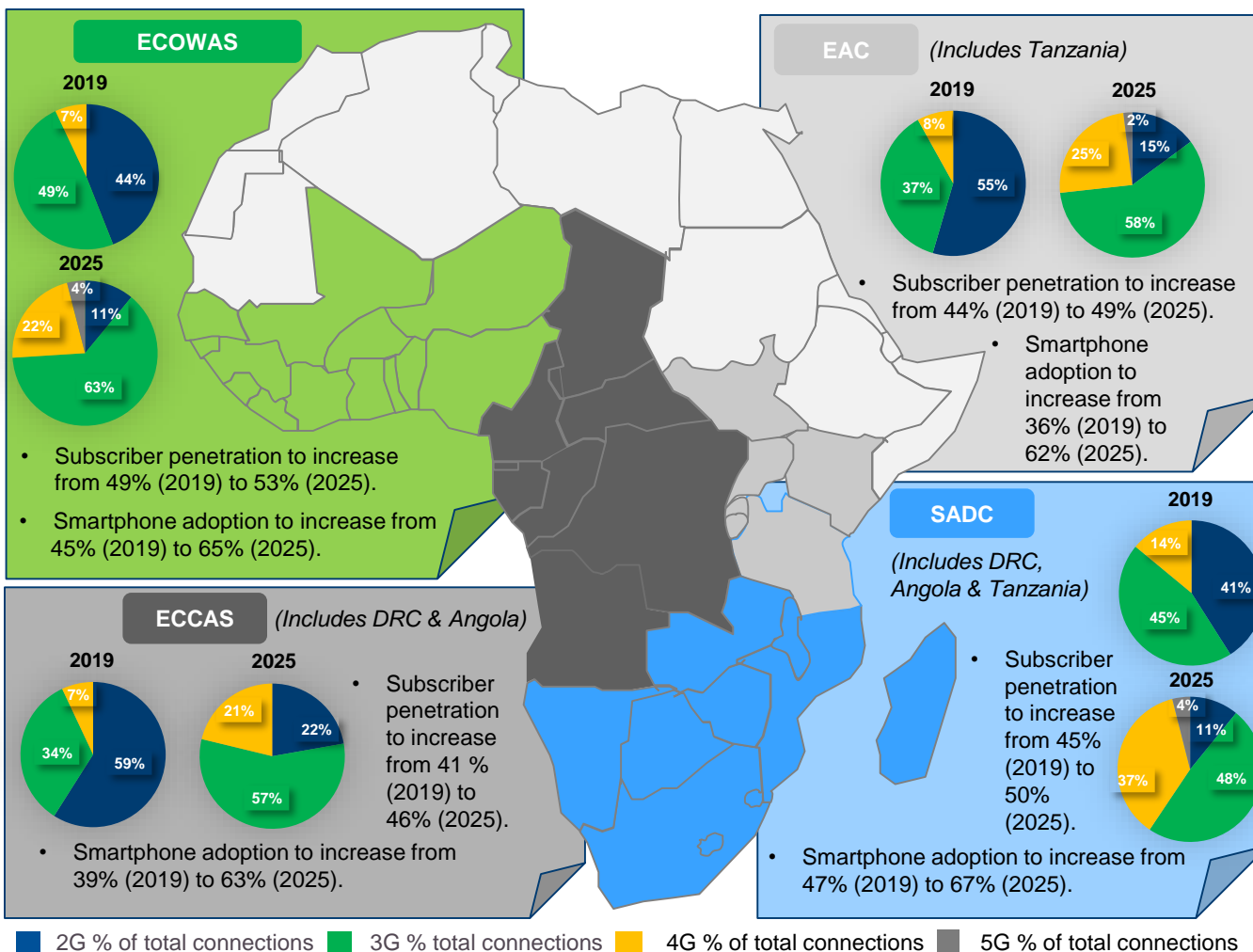


- Over the last ten years, the number of active mobile-broadband subscriptions per 100 inhabitants in Africa showed strong growth, increasing at a 35% compound annual growth rate (CAGR) between 2010 and 2019. Fixed-broadband subscriptions continued to grow as well, although at a more modest 11% CAGR.
- Fixed-telephone subscriptions experienced a continued -5% CAGR decline, whereas mobile-cellular subscriptions continued to grow at a 6% CAGR.
- In 2019, approximately 1.26 billion people were covered by a mobile cellular network signal and 1.18 billion were covered by at least a 3G mobile network or long-term evolution (LTE)/WiMax signal.
- Even though households with a computer and internet access at home increased by 6% and 13% CAGR respectively, a large number of households in Africa do not have access to a computer or internet at home.
- Africans largely depend on their mobile phones to get online. However, in 2019, Africa had the lowest bandwidth per internet user (31 kb/s) and most expensive mobile broadband bundles in the world (53 PPP\$).

Over the next five years, much of Africa's mobile ecosystem will go through a transformative change



Outlook on mobile economy across regional economic communities, 2019-2025

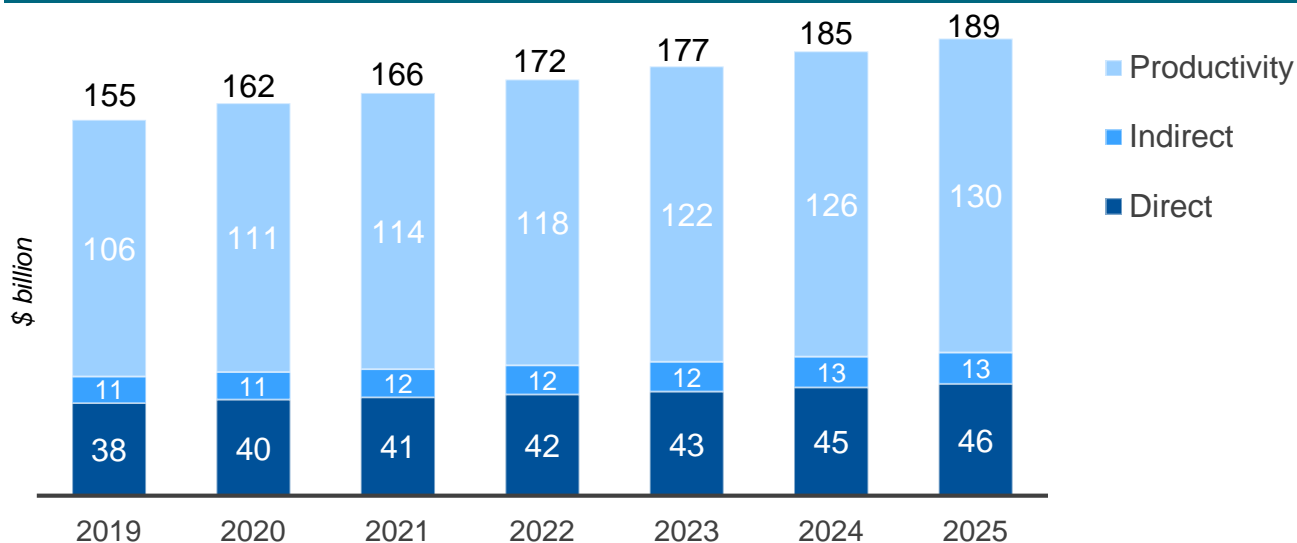


- Africa is gaining more than 100 new internet users per second.
- In 2019, sub-Saharan Africa (SSA) had 477 million unique mobile subscribers and 272 million mobile internet users. These figures are projected to increase to 614 million (50% penetration rate) and 475 million (39% penetration rate) respectively by 2025. Most of this growth will be driven by Nigeria, Ethiopia, the DRC, South Africa, and Kenya.
- Adoption of smartphones is forecast to grow from 44% in 2019 to 65% of total connections in 2025 due to the increasing number of low-cost devices and financing schemes.
- In 2025, the percentage of 2G connections is predicted to fall to just 12%, with 3G poised to have the largest share of total connections (58%) followed by 4G (27%).
- 5G services have launched in South Africa and trials are being done in Nigeria, Kenya, Uganda and Gabon. It is expected there will be 30 million 5G connections by 2025.
- The pandemic will impact the growth in mobile-service operators' earnings in 2020 (dropping by 0.8%) and beyond. However, operators plan to continue investing in mobile broadband infrastructure, to a tune of \$52 billion in total capex (\$15 billion on 5G capex), between 2019 and 2025.

The mobile ecosystem accounts for 9% of Africa's GDP* and is key for harnessing the benefits of the internet and digitalisation

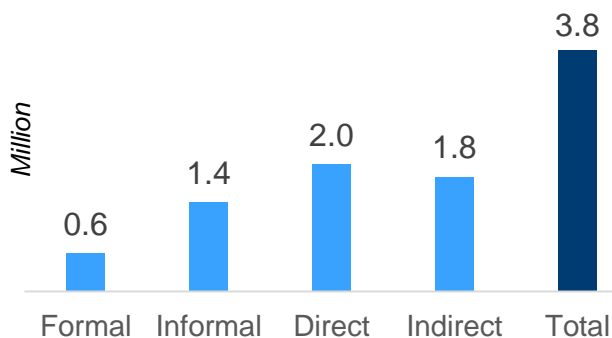


Mobile ecosystem's contribution to GDP, 2019-2025*

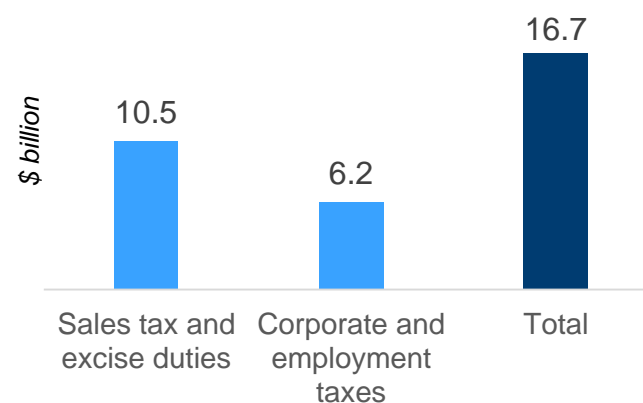


- In the International Telecommunication Union's recent global study, it estimated that a 10% increase in mobile broadband penetration in Africa would increase GDP by 2.5%, while fixed broadband yielded a marginal 0.3% increase in GDP. This is because for most individuals and businesses, mobile broadband is the only way to access the internet.
- Last year mobile technologies and services contributed towards 9% of SSA's GDP, produced 3.8 million jobs (37% of which were informal economy jobs), and generated \$16.7 billion in fiscal revenues for public spending.
- Contribution to GDP is forecast to steadily increase over the next five years to \$189 billion, with SSA countries increasingly benefiting from the productivity gains generated by individuals and businesses adopting mobile technologies and services. And since the beginning of Covid-19, 57% of organisations across Africa have accelerated its adoption.
- With the continued growth and development of the mobile ecosystem, public and private sector organisations across Africa will have increased access to the internet allowing them to rapidly digitalise their operations and activities, in turn enhancing their productivity and growth and accelerating Africa's digital transformation.

Contribution to jobs, 2019



Contribution to fiscal revenues, 2019



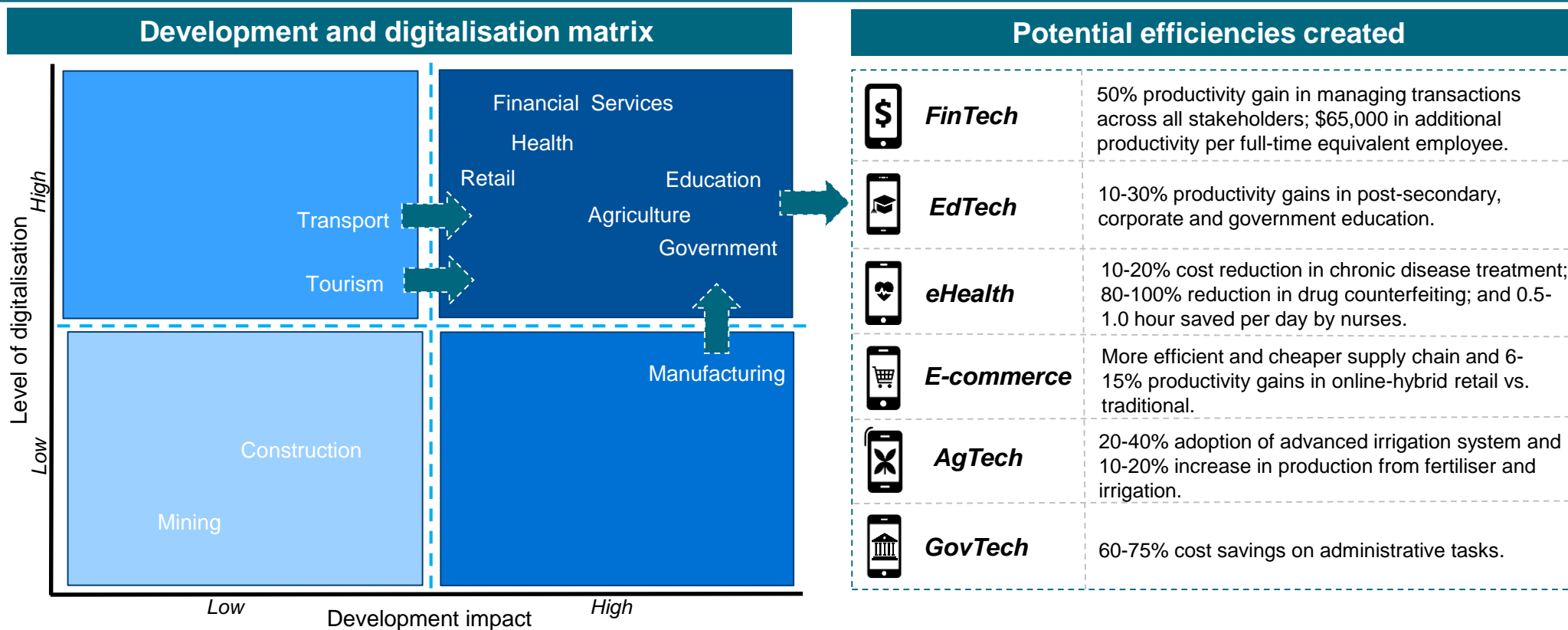
Sources: ITU, GSMA, Oracle, TBI analysis

* Excluding GDP for North Africa

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Sectors Leading Digital Transformation

Six sectors are experiencing rapid digitalisation in Africa, which accelerated during the Covid-19 pandemic



- The impact of digital transformation on Africa is increasingly concentrated in six sectors: finance, education, health, retail, agriculture and government. Companies and organisations in these sectors are associated with high levels of digitalisation measured by greater penetration of smartphones, adoption rates of cloud computing and “internet of things” technologies, automation of knowledge of work, and internet bandwidth per user than other sectors. They have also attracted the highest amount of tech-related investments. In terms of development impact, they are some of the biggest contributors towards GDP as the goods and services these sectors produce are needed by a large proportion of the population and are considered priority areas for African governments, development partners, and impact investors.
- Many expect continued digitalisation in these sectors over the next few years could create several economic and social efficiencies for millions of people. This is enabling these sectors to not only thrive but also grow rapidly during the pandemic, which strongly indicates that digital transformation of these sectors will play a key role in leading Africa’s economic recovery and transformation.



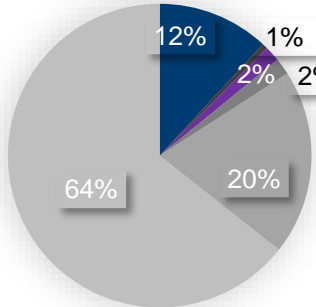
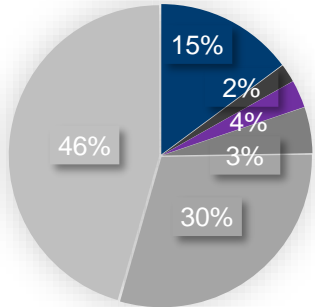
FinTech platforms and services are playing a crucial role in financial inclusion and economic recovery



Recent developments and trends

% of total registered mobile money accounts

% of total volume of mobile money transactions



■ East Asia & Pacific
 ■ South Asia
 ■ Middle East
 ■ Africa
■ Europe & Central Asia
 ■ Latin America & the Caribbean

- In 2019, Africa had the biggest share of the global mobile money market both in term of registered accounts (481 million), transaction volume (24 billion) and value (\$460 billion). East Africa is the largest market for mobile money but in recent years growth in registered accounts has been led by Central and West Africa. This has huge implications for increasing financial inclusion for Africa.
- Registered agents are the primary source for digitising cash (340), and have 26 and 58 times the reach of ATMs (13) and bank branches (6) per 100,000 adults respectively.
- Digital transactions (53%) are increasingly making up the majority of mobile-money flows versus cash-in/cash-out transactions (47%).
- Development of Africa's financial ecosystem is becoming more dependent on the expansion and growth of mobile money, with banking integration (connected to 10 banks on average) and account-to-account interoperability (peer-to-peer transfers grew by 25%) increasing, and traditional banking (flows to and from banks increased by 32%) expanding in recent years. Furthermore, international remittances of \$6.1 billion in value were enabled by mobile money.
- During Covid-19, mobile money has increasingly supported impactful services such as salary, bill, and business payments, enhanced the circulation of money within Africa rather than exiting, connected offline customers to online merchants, and helped SMEs and micro-businesses to become more sustainable and viable by increasing access to finance and markets.

Key players*

- Safaricom's M-Pesa is one of the largest mobile money apps in East Africa used by 200,000 firms to conduct operations digitally and to increase financial inclusion among civilians. In recent years, the app has also provided micro-insurance and credit products. With Covid-19 having a significant impact on SMEs, M-Pesa scrapped its fees for peer-to-peer (P2P) transactions below KSH 1,000 and increased transaction limits to KSH 150,000.
- MTN is another leading telecom firm providing services such as P2P, B2B and P2B payment platforms for millions of customers across Africa. Ghana's government used its platforms to pump stimulus to 100,000 SMEs and micro-businesses impacted by the pandemic.
- While interoperability between mobile money service providers and financial institutions has increased, a number of banks such as Co-operative, Equity Bank, and Kenya Commercial Bank are developing and using their own mobile money platforms to lend money to SMEs and micro-businesses.

Issues to consider

- To maximise the benefits of mobile money, i.e. increasing financial inclusion and supporting public and private sector to thrive, recover, and grow, service providers and governments could consider how to:
- ✓ Develop apps and platforms that work on any phone.
 - ✓ Scale payment platform interoperability and encourage innovation and scale, e.g. among P2P payments, micro-products, B2P and P2B payments.
 - ✓ Promote financial literacy, including around management of credit.
 - ✓ Engage regulatory bodies to build trust and develop a level playing field and incentives to scale adoption of mobile money services, apps and platforms within countries and across Africa.

Sources: GSMA, The Africa Report, International Finance, Investec, McKinsey & Company, Safaricom, MTN, TBI analysis

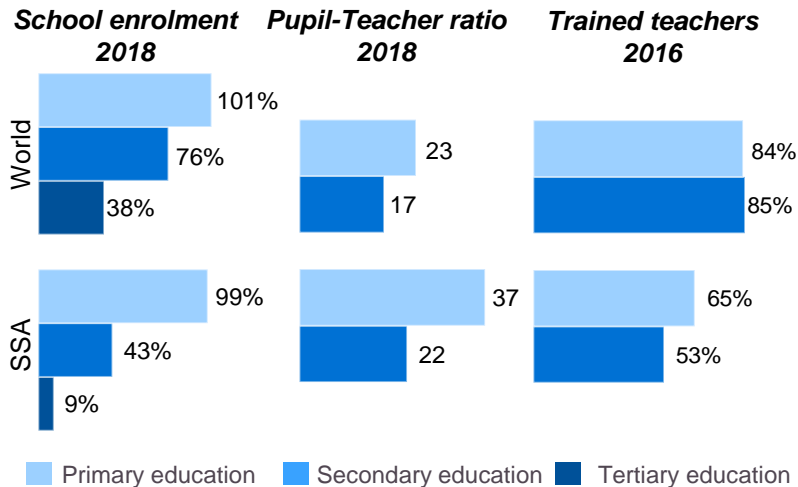
*See appendix for complete mapping in Africa



EdTech firms are increasing access to high quality education and preventing large dropout rates at schools during Covid-19



Recent developments and trends



- Africa has shown strong economic growth, but a lot needs to be accomplished to increase access to high-quality education for a growing population. School enrolment for primary education has largely caught up with the world but the completion rates remain fairly low (68.8% vs. an 89.2% global average). When it comes to enrolment in other tiers of education, as well as pupil-teacher ratio and the number of trained teachers, Africa still lags behind the world.
- Digital technology has the potential to address these issues and provide scalable solutions for student learning and teacher training, and improving learning outcomes through mobile phones, tablets, TV, radio and e-books.
- Tablets are becoming a cheaper option than textbooks for learning, mobile phones are providing students and teachers in remote areas and on the move easy access to education materials, and the internet is increasing access to international online learning tools from classrooms and homes.
- Increasing access to online tools for teacher training and assessments are raising the quality of classroom instructions and improving learning outcomes and performance in a transparent way.
- A recent EdTech Hub survey found 160 EdTech initiatives present in Africa (with more in East than West Africa). With pandemic-led school closures, the use of digital learning tools has doubled, however the total number of users still remains low owing to students and teachers lacking access to digital technology and conducive learning and teaching environment at home.

Key players*

- Ubongo is a social enterprise and EdTech firm based in Tanzania that produces a kid's TV show (the East African version of Sesame Street) broadcast in 14 African countries. Its learning products are used more widely by students than any other digital learning solutions and the company has also been able to depict the effectiveness of its products on learning outcomes and student performance through two independent trials in Tanzania and Rwanda and a large observational study conducted by University of Cambridge.
- Another large digital education provider is Eneza, an EdTech firm that provides learning material for primary and secondary school students on any device through an SMS-based interactive learning app. Its products have large number of users across Africa.
- Since the pandemic, both of these EdTech firms have seen a large growth in users. Ubongo's viewers grew from 13 million to 16.9 million and users of Eneza's products grew from 580,000 to 1.2 million per month.

Issues to consider

- To ensure Africa's youth have increased access to high-quality education and to prevent large number of students dropping out due to the pandemic, EdTech firms, development partners and governments could consider how to:
- ✓ Prioritise investments in infrastructure projects that can increase access to cheaper electricity and internet in remote areas.
 - ✓ Increase access to low-cost devices for learning and reduce or subsidise the cost of digital learning apps and solutions.
 - ✓ Develop effective and affordable digital teacher training solutions and qualifications.
 - ✓ Work in partnership with school providers to accelerate roll out of digital learning solutions.

Sources: World Bank, EdTech Hub, Centre for Global Development, University of Oxford, McKinsey & Company Eneza, Ubongo, TBI analysis

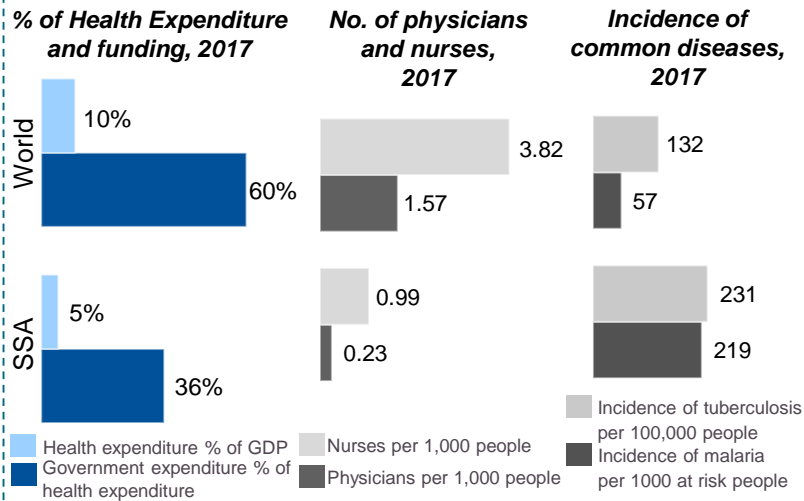
*See appendix for complete mapping in Africa



eHealth is reforming and strengthening Africa's health-care system by addressing the needs of millions of underserved Africans



Recent developments and trends



- Incidence of malaria and tuberculosis, two of the most deadliest diseases in Africa, have reduced over time, however the figures remain sharply higher than the world average. Furthermore, African government's health expenditure as a % of GDP and government funding to fight diseases lags behind other parts of the world and there are severe shortages of healthcare workers across Africa.
- Millions of Africans limited access to health due to costs and distance to the nearest health facility, but eHealth services, enabled by the internet and mobile phones, are scaling and increasing access to remote health diagnosis, treatment, and education to various socio-economic groups.
- Telemedicine services are providing health check ups, advice and care to patients in rural areas through SMS platforms and internet-based solutions. It is also promoting health education and providing tools help patients follow their treatment regimes.
- eHealth is helping both private- and public-health systems to improve efficiency and effectiveness by providing tools and databases that store and streamline patient records. It is also providing online platforms that support public-health officials in monitoring disease trends and getting critical information to health-care workers in remote areas about outbreaks and preventive efforts.
- Investment in eHealth companies grew from \$20 million in 2017-18 to \$189 million in 2019, and during the pandemic they have raised over \$97 million. This shows eHealth is addressing key market needs and playing a major role in reforming and strengthening Africa's health-care system.

Key players*

- Helium Health, a Nigerian digital health startup developing apps that digitise patient records, launched its online consultation platform earlier than planned due to the pandemic. The online consultations are at half the cost of an in-person examination. It has raised \$10 million from investors and already has a number of clinics and hospitals signed up as clients.
- Zipline, a California-based drone company with operations in Rwanda, raised \$120 million last year and recently expanded to Ghana where the government enlisted it to deliver Covid-19 test samples and PPE during the lockdown.
- eHealth Africa, a Nigerian health technology firm that has delivered more than 24 million doses of vaccinations in Nigeria through its Direct Delivery online system, recently rolled out a platform that alerts patients who have tested negative for Covid-19 via SMS.
- CureCompanion, a Texas-based telemedicine firm working with clinics across Africa, saw a 12-fold increase in its business in the continent.

Issues to consider

- To address the growing medical needs of millions of people across African nations during and following the pandemic, eHealth firms, governments, telecoms and investors could consider how to:
- ✓ Work together to address the complexities of the health-care ecosystem, particularly where there are multiple stakeholders with different vested interests. Telecoms, given their experience and size, could roll out eHealth solutions with governments.
 - ✓ Expand the pool of investors that not only include development finance institutions and impact investor but also commercial investors and frameworks for public-private partnerships.
 - ✓ Promote the development of software that is applicable to all devices and ensure protection of patient information.

Sources: World Bank, GSMA, Partech, Zipline, Reuters, Helium, eHealth Africa, CureCampanion, WEF, McKinsey & Company, TBI analysis

*See appendix for complete mapping in Africa



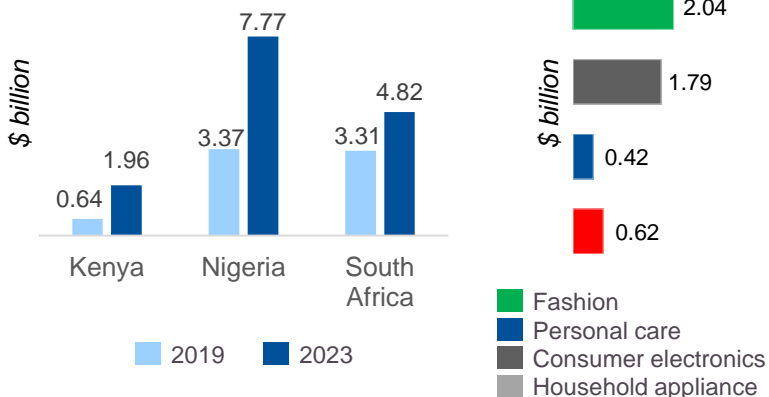
E-commerce is transforming Africa's retail landscape by addressing pent-up consumer demand and enabling SMEs to thrive and grow



Recent developments and trends

Total e-commerce revenue, 2019 and 2023

E-commerce revenue per popular sales category, 2019



- Apart from South Africa and Mauritius, the formal retail sector is largely underdeveloped across Africa. E-commerce is addressing that gap by providing the growing middle class and youth population with a wider range of quality products from domestic and international markets at lower prices and at greater convenience to customers regardless of their location.
- Nigeria, South Africa and Kenya have some of the largest e-commerce markets in Africa and generated a combined total of \$7.3 billion last year. By 2023, this figure is forecast to hit \$14.6 billion with Kenya (32.3% CAGR) and Nigeria (23.3% CAGR) driving growth. Fashion, personal care, consumer electronics and household appliances are the most purchased e-commerce goods.
- This growth is primarily being supported and induced by Africa's growing young population, higher internet and smartphone penetration, increasing investments in e-commerce platforms and marketplaces, and improved delivery and payment systems.
- In macroeconomic terms, e-commerce is incrementally increasing overall household consumption by catering to underserved needs and wants for retail goods in urban and rural areas.
- As a result of lockdowns and social distancing during Covid-19, e-commerce firms are seeing a surge in demand. Through their innovative platforms they continue to empower SMEs to scale their businesses and production lines and provide opportunities for local logistics firms and payment platforms to enhance their operations and strengthen their supply chains and distribution channels.

Key players*

- Jumia, a Berlin-based online marketplace, is one of the largest e-commerce firms in Africa with 110,000 sellers, 40 million listed products, and presence in 11 countries. Despite its heavy losses since its NYSE IPO, Jumia posted its highest earnings results during the pandemic. In Nigeria it has played an important role by bridging the supply gap with international retailers and waiving commissions on essential commodities for consumers. Through its contactless delivery and payment systems via JumiaPay, it has provided frontline health-care worker with necessary PPE for free or at low costs, and offered free advertising slots to government health officials for Covid-19 sensitisation campaigns.
- Konga.com, a Nigerian e-commerce firm known as 'Nigeria's largest online mall', offers a wide range of products from fashion to household appliances. During the pandemic it has been providing free nationwide delivery to all its customers and has developed a N 10 million fund to feed low-income families.

Issues to consider

- To unlock the full potential of e-commerce innovation during the pandemic and in Africa's economic recovery, firms, investors and government could consider how to:
- ✓ Facilitate investment in logistics and delivery infrastructure such as warehouses and online delivery and tracking systems that will better serve rural communities.
 - ✓ Facilitate efforts to reduce transaction costs, e.g. via cash on delivery, mobile money payments, and payment through agent or at a store.
 - ✓ Promote consumer awareness of and trust in online marketplaces and retailers by communicating and marketing the benefits at local stores and malls and developing software that ensures secure transactions and protection of consumer data.

Sources: GSMA, Government of Australia, McKinsey & Company, Jumia, DW, UNCTAD, CNN ITC, AllAfrica, TBI analysis

*See appendix for complete mapping in Africa



AgTech is revitalising agriculture value chains during the pandemic and reducing risks on smallholders' food and financial security

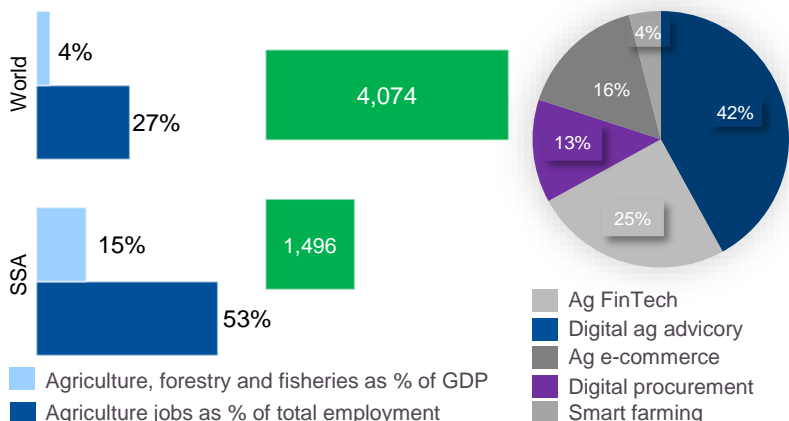


Recent developments and trends

GDP and jobs, 2018

Cereal yield (kg/hectare), 2017

Segmentation of AgTech services by usage, 2020



- Agriculture is the backbone for Africa's growth and development. It contributes 15% of GDP and generating more than half of total employment. Increasing productivity and growth in this sector is critical for reducing poverty in large agro-based economies like Nigeria and Ethiopia, where 72% and 67% of smallholder farmers respectively live below the poverty line (\$1.90/day).
- Digital technology is playing a major role in accelerating the growth of agriculture output, value and its socio-economic impact by providing a range of tools and services such as digital ag advisory, FinTech apps, procurement systems, and smart farming equipment that increases access to vital inputs, strategic information, and shared equipment that improves productivity and increases yields. Furthermore they are creating online marketplaces such as agri-e-commerce platforms that transform the way various value-chain stakeholders interact with smallholders by increasing their access to key markets and enabling them to sell their produce at fair prices.
- Farmers are predominantly using digital ag advisory and FinTech services which are being driven by increased adoption of mobile devices and the prevalence of mobile money. Smart farming equipment has also recently launched into the African markets.
- Agri-e-commerce and digital procurement are the fastest growing AgTech sub-sectors and are playing an increasingly vital role during the pandemic in helping smallholders access critical inputs and get their produce to markets and consumers across Africa.

Key players*

- Twiga Food, a Kenya-based B2B AgTech startup, is the largest agri-e-commerce platform in Africa. It recently partnered with Jumia to increase the access of their farmers to markets across Africa with the aim of helping them to thrive and grow during the pandemic.
- eMiska, a Zambian AgTech firm, is a leading digital procurement platform for wholesale and retail farming inputs such as agrochemicals, horticulture tools, seeds, machinery, and equipment. Since the onset of the pandemic it has been collaborating with the Zambian government to provide more digital support and advice to farmers to grow their yields.
- FarmCrowdy, a relatively new crowdfunding platforms for farmers in Nigeria, fast tracked its launch during the pandemic to enable 25,000 rural farmers to store and sell their produce in prime markets such as Lagos.
- Farmerline is a Ghanaian digital ag-advisory, procurement, and FinTech startup that provides essential information, inputs and credit services to smallholders. During the pandemic the firm has been raising awareness about risk of contagion through mobile voice messages.

Issues to consider

- To minimise the disruptions on food and input supply chains caused by the pandemic and in turn risking smallholders' financial and food security, AgTech firms, government, development partners and investors could consider how to:
- ✓ Facilitate investment in patient capital in agritech firms that are transforming priority value chains and improving agriculture yields.
 - ✓ Invest in digital data-management platforms for smallholder farmers.
 - ✓ Engage mobile network operators to increase access to digital financial services for smallholder farmers.
 - ✓ Encourage more digital agri-procurement platforms with larger and more established e-commerce platforms to increase smallholders' access to markets and consumers.

Sources: GSMA, World Bank, Agricultura eVita, Twiga, eMiska, FarmCrowdy, Farmerline, Disrupt Africa, TBI analysis

*See appendix for complete mapping in Africa

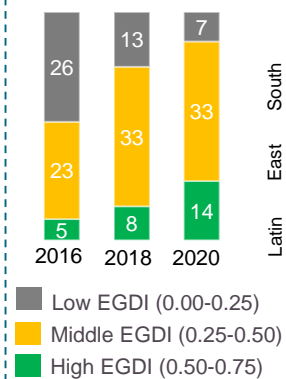


GovTech has the potential to revolutionise the delivery of essential public services by improving their effectiveness and reach

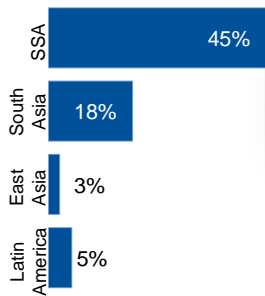


Recent developments and trends

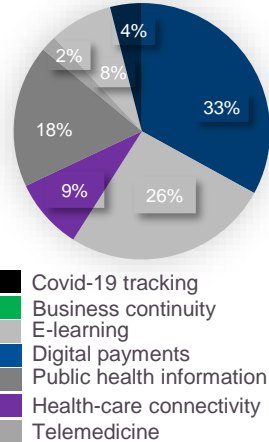
Regional distribution of African countries by EGD level, 2020



% of population without ID, 2018



Digital services response to Covid-19, 2020



- Adoption of digital technology by African governments is much lower compared to other sectors. As per the latest UN e-government development index (EGDI), which measures relative e-government performance of countries based on ICT infrastructure, human capital, and online content and services, none of the African countries are in the very high EGDI group (0.75-1.00), however in 2020, a considerable number moved to a higher group (15 countries, or 28%). The governments of Mauritius, the Seychelles and South Africa are the highest ranked in Africa, with Rwanda ranked as fourth highest among least-developed countries.
- Over the years, several African governments have moved key departments and services online such as online services for revenue administration and collections and web portals for passport and ID application and issuance. This has generated increased revenues while also streamlining and simplifying processes and procedures for citizens.
- Nevertheless, 45% of the population in Africa do not have a government issued ID. With the onset of Covid-19, governments are increasingly recognising the benefits of digital IDs as they help increase citizen's access to digital government services and products such as credit and insurance.
- Furthermore, during the pandemic, governments have partnered with the private sector to deliver crucial online services such as public health information, Covid-19 tracking, e-learning, business continuity assistance for SMEs, and simplified digital payments.

Key players

- The government of Rwanda, through its Vision 2050 strategy and the Smart Rwanda Master Plan, prioritises the use of digital technology in transforming the lives of its citizens. Despite limited resources, the government has made major progress in providing essential public services online through its award-winning 'Irembo' system. Furthermore, during the pandemic government institutions and public officials have extensively used digital technology and the internet to inform public on regular basis about the Covid-19 situation, the risks and support services. Rwanda is also a pilot country for Smart Africa Trust Alliance's digital ID scheme.
- The government of South Africa is one of the early adopters of digital technology in Africa. In 2003, the South Africa Revenue Service implemented an 'e-filing service' which created a simplified system to file tax returns and provide citizens with quick access to their history. This has significantly improved tax collection and has become the preferred mode for filling taxes for most citizens. Furthermore during the pandemic, the government of Western Cape launched an online platform to strengthen remote teaching and learning practices.

Issues to consider

- To reform and scale government delivery of essential public services during and following the pandemic governments could consider how to:
- ✓ Prioritise investment towards increasing access to electricity, internet and digital technology.
 - ✓ Develop a coherent and effective ICT and digital transformation strategies, masterplans and visions.
 - ✓ Facilitate a competitive and transparent market for private-sector investors and providers of telecom and internet devices.
 - ✓ Scale up efforts towards e-government platforms and services.
 - ✓ Partner with tech companies to scale the adoption and increase integration of digital IDs for citizens.

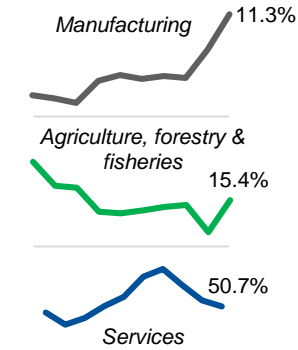


Three sectors where digitalisation is currently progressing more slowly

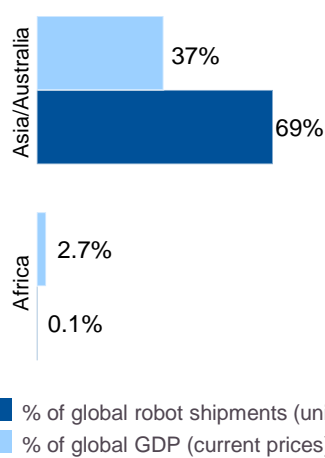


Manufacturing

Sectors, value added (% of GDP), 2010-19



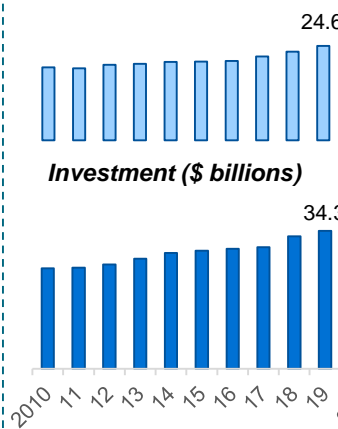
Regional share of robots vs GDP, 2017



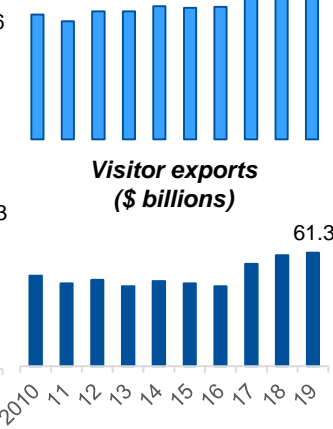
- Over the last ten years, manufacturing's share of GDP has grown steadily by 2% CAGR compared to agriculture, forestry and fisheries (-0.7%) and services (0.1%). Increased levels of digitalisation could have a major impact on Africa's manufacturing output and productivity.
- Adoption of smart machines, e.g. robots, in Africa has been much lower than Asia and Australia due to high capital costs and the average internet penetration rate is 10% lower than South Asia.
- Doubling the internet penetration rate in Africa could on average increase manufacturing labour productivity by 3.3%. This again is much lower compared to other developing regions (11.3%) owing to lack of digital skills in the workforce.

Tourism

Total contribution to employment (million jobs), 2010-19



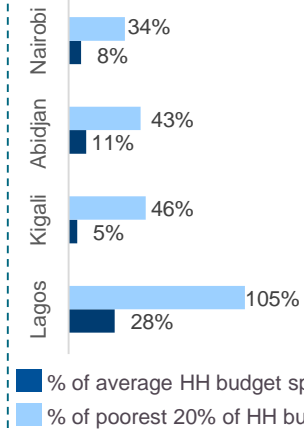
Total contribution to GDP (\$ billions), 2010-19



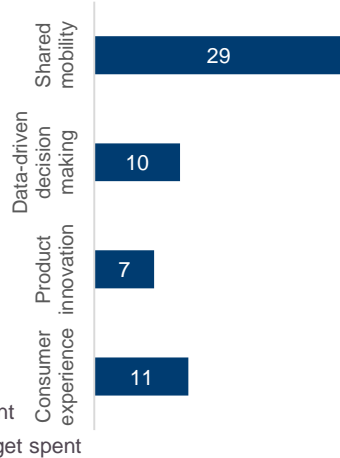
- Tourism and travel's contribution to Africa's economy has been growing consistently. Last year it accounted for 6.8% of total employment, 7.1% of GDP, 6.3% of investment, and 10.4% of exports.
- Increased adoption of digital marketing and e-commerce platforms has helped Africa's tourism sector to increase customers, reach new markets, build brand awareness, and facilitate payments. These platforms are also helping to accelerate inclusive tourism growth by providing business and growth opportunities to local SMEs and communities in the sector.
- However, uptake of productivity enhancing digital technologies for e.g. cloud computing and data analytics has been much slower.

Transport

Household (HH) budget spent on public transport, 2017



Number of e-mobility startups per category, 2020



- Public transport is mostly inaccessible for average households in major African cities due to fares being expensive relative to budgets. Even though informal minibuses are the predominantly means for low-cost transport, it is still largely unaffordable to the poorest 20% of households.
- E-mobility in recent years has been providing African passengers with a more cost effective, safe and flexible means of travel than fixed-route minibuses. As of 2020, there were 57 e-mobility startups in Africa and about 50% of them were in the share mobility space.
- Digital technology has the potential to transform transportation system in terms of efficiency and passenger experience, and affordability.

Sources: Overseas Development Institute, International Federation of Robotics, World Bank, World Travel & Tourism Council, OECD, AfDB, World Resources Institute, TBI analysis

3

Accelerating Economic Transformation Through Digital Technology

Digitalisation should be mainstreamed into Africa's economic transformation goals, summarised here via AFDB's Hi5s



Priority area	Goal and objectives for 2025	Supporting technologies with digital platforms
<p>Light and power up Africa</p>	<ul style="list-style-type: none"> Goal: Universal access to electricity Objectives: 162 gigawatts of electricity generated, 130 million on-grid connections, and 75 million off-grid connections. 	
<p>Feed Africa</p>	<ul style="list-style-type: none"> Goal: Agriculture transformation Objectives: 150 million people adequately fed, 100 million people lifted out of poverty, and 190 million hectares with restored productivity. 	
<p>Industrialise Africa</p>	<ul style="list-style-type: none"> Goal: Economic diversification Objectives: Industrial contribution to GDP increased by 130%, 35 special economic zones supported, and 30 PPPs developed and strengthened. 	
<p>Integrate Africa</p>	<ul style="list-style-type: none"> Goal: Regional market integration Objectives: Building regional infrastructure, boosting intra-African trade and investment, and facilitating movement of people across borders. 	
<p>Improve quality of life for Africans</p>	<ul style="list-style-type: none"> Goal: Access to social and economic opportunities Objectives: Creating 80 million jobs, building critical skills, improving access to water and sanitation, and strengthening health systems. 	

Sources: African Development Bank, TBI analysis

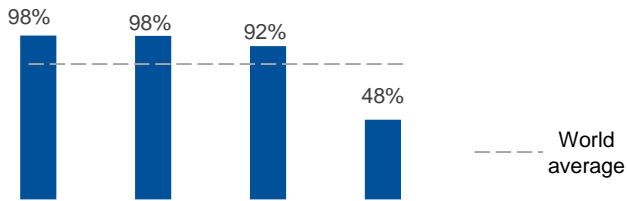


Three common cross-cutting challenges leaders should consider in achieving universal internet access and its benefits

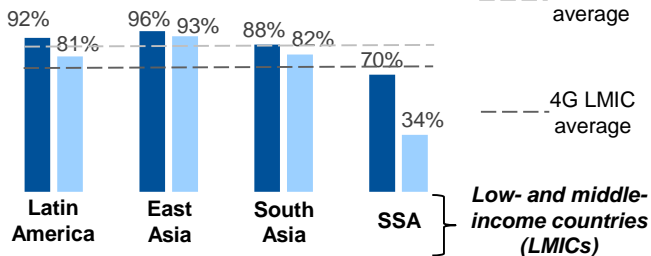


1. Internet and power infrastructure

Access to electricity (% of population), 2018



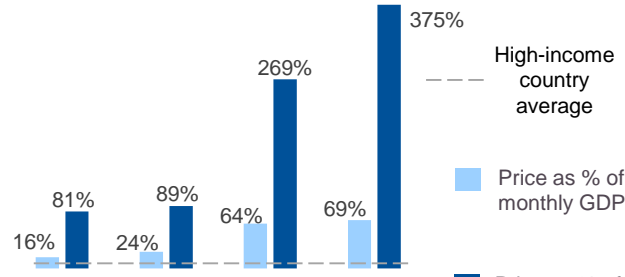
3G and 4G coverage (% of population), 2019



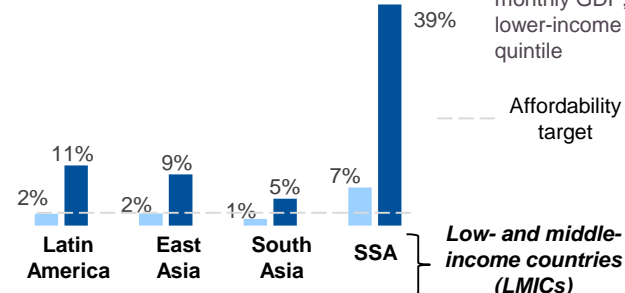
- Access to electricity is critical for the expansion and development of digital infrastructure as it is needed for recharging mobile devices and powering mobile base stations. SSA has the world's lowest household electrification rate with a massive gap between rural (23%) and urban (79%) access rates.
- Even though there has been considerable expansion in 3G coverage there are 150 million Africans with no access. Furthermore, the internet speed is far below the global threshold of 10Mbps making it difficult to fully realise the benefits of the internet.

2. Device and internet affordability

Affordability of entry-level devices, 2019



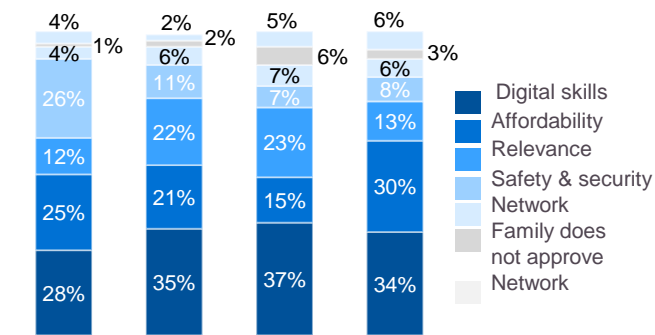
Affordability of 1 GB of data, 2019



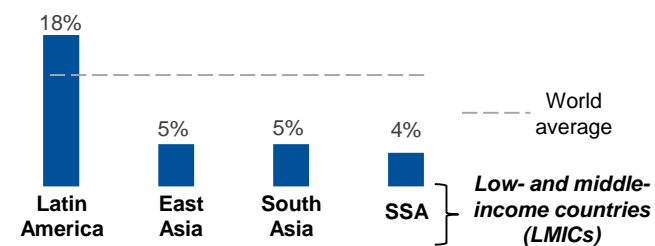
- Most Africans access the internet through entry-level devices, however their costs as a proportion of income are the highest in the world and device affordability for the poorest 20% represents 375% of their monthly incomes.
- Average affordability for 1 GB of data has reduced but it is much higher than the 2% affordability target.
- The gender gap in device ownership is 15% with 86 million women having no access to a device. The gender gap in mobile internet use is 23% with 200 million women remaining disconnected.

3. Digital education and awareness

Top barriers to mobile internet use, 2019



LinkedIn users as a % of working age population, 2019



- While affordability is impeding access, lack of digital skills and awareness is the key barrier in mobile internet adoption and usage. Furthermore women have lower awareness of the internet and its benefits than men (75% vs. 83%) and households in rural areas were less aware than those in urban settings (74% vs. 84%). Relevance of the internet and safety and security concerns also prevent people from using the internet.
- Even among educated Africans, the usage of digital platforms such as LinkedIn remains quite low.

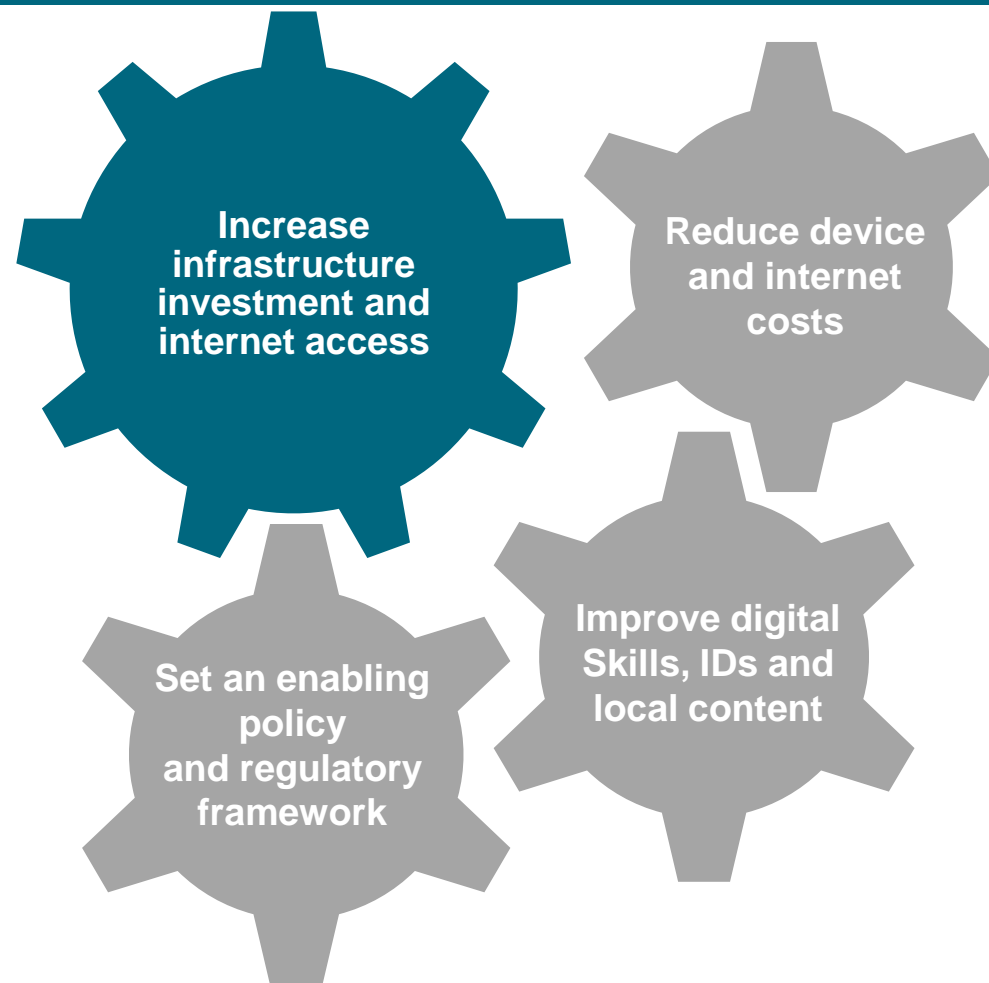
Four steps for Heads of State to “mainstream” digital technology into their vision for economic transformation and effective government



Delivery mechanism for Heads of State (HoS)

- 1 Prioritise:** HoS aspirations for digital transformation will set the agenda for the whole administration and country, so they must pick ones that are politically relevant, strengthen the economic transformation priorities of the HoS and are “citizen-centric” – and stick with them through to full implementation. By selecting a few specific priorities, leaders signal to the rest of government, investors and others what they care about most.
- 2 Get the personnel right:** Leaders need to create a dedicated delivery unit in the HoS’ office to execute their priorities for digital transformation. It starts with hiring and empowering a head for the delivery unit (HDU) who can bring organisational effectiveness; and capable, motivated team of people. The HDU helps to structure the office, selects and supervises staff, mediates access to the HoS, and manages information and action flows on the digital transformation agenda between the HoS, cabinet, other central government agencies – particularly those that are key for economic and social transformation – and the rest of the world.
- 3 Focus on delivery:** Achieving the digital transformation agenda will require a delivery function that designs, manages, and monitors those activities that generate successful outcomes. This delivery function needs to have the HoS’ political backing and time commitment, and it must be staffed with high-calibre individuals. It should apply simple performance management and monitoring approaches and institutionalise regular performance reviews with accountabilities for results that are clearly understood. An effective delivery function will also alert the HoS, and cabinet, if outcomes are not on track and suggest mitigating strategies.
- 4 Communicate a strong narrative, not just a set of technical announcements:** HoS need a strong, strategic communications function to deliver proactive communications that explain their vision and agenda for digital transformation to the public, creating feedback loops along the way and incentivising sustained delivery at pace across government. This is also key to increasing ***much-needed collaboration across countries***, e.g. on key issues like platform interoperability.

A delivery-focused “mainstreaming” can help:



4

Appendix: Mapping Africa's Digitalisation Landscape and Potential



Africa's FinTech landscape and potential



Funding raised
\$30+ million
(Q1 2020)



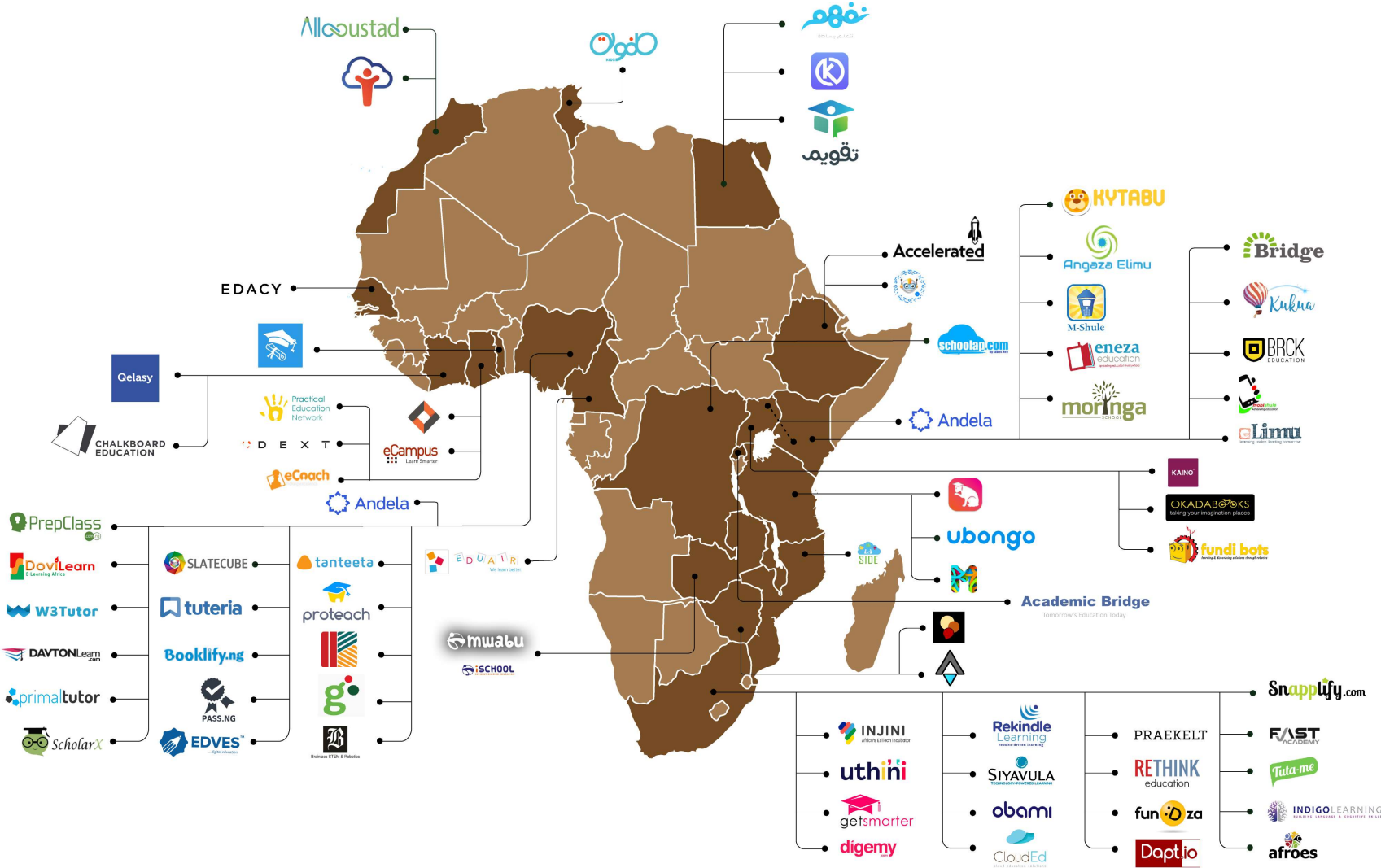
SDGs impacted



Sources: Briter Bridges, GSMA, UN, TBI analysis



Africa's EdTech landscape and potential



Funding raised
\$20+ million
(Q1 2020)

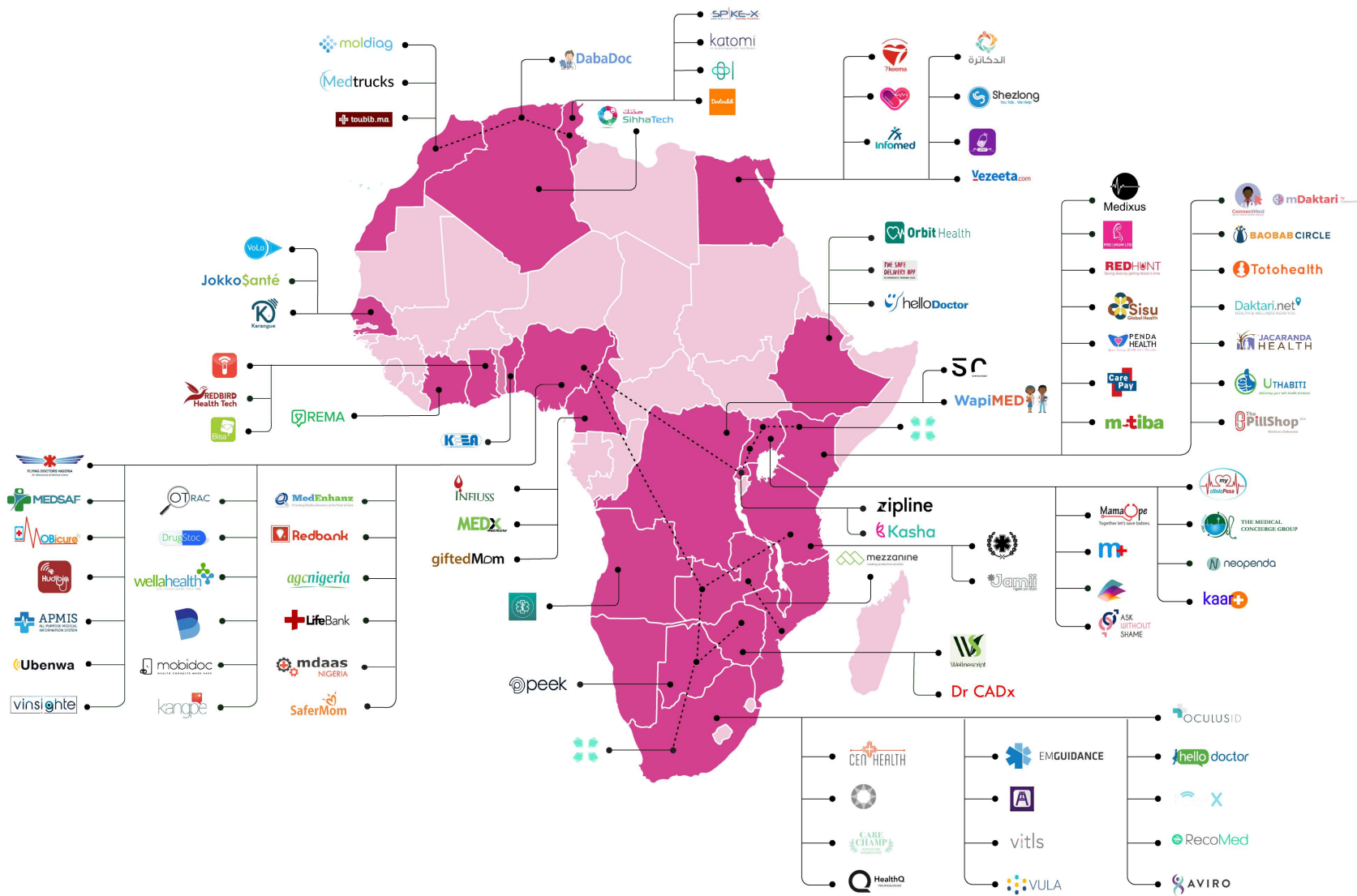


SDGs impacted





Africa's eHealth landscape and potential



Funding raised
\$20+ million
(Q1 2020)



SDGs impacted



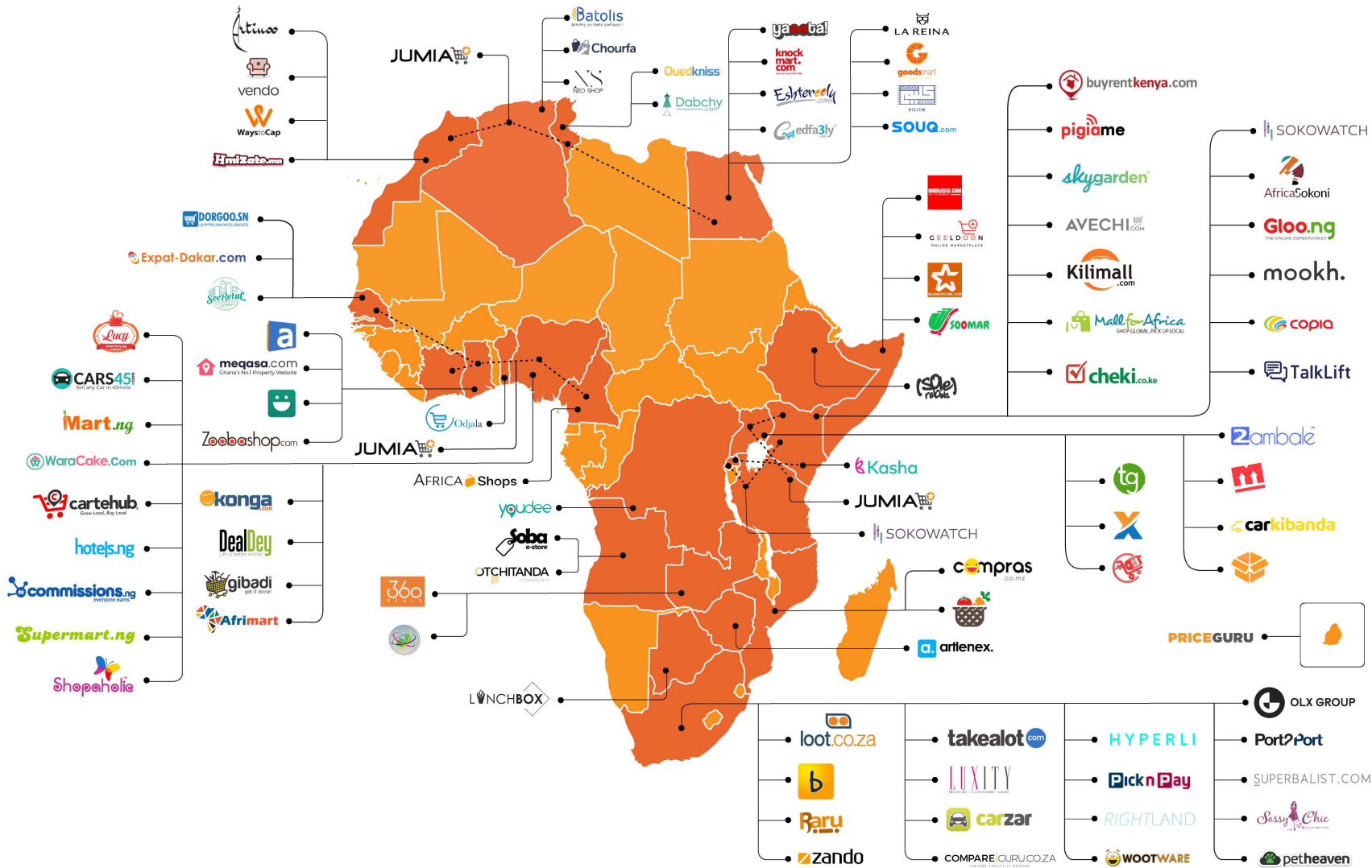
2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



Africa's E-commerce landscape and potential



Funding raised
\$15+ million
(Q1 2020)

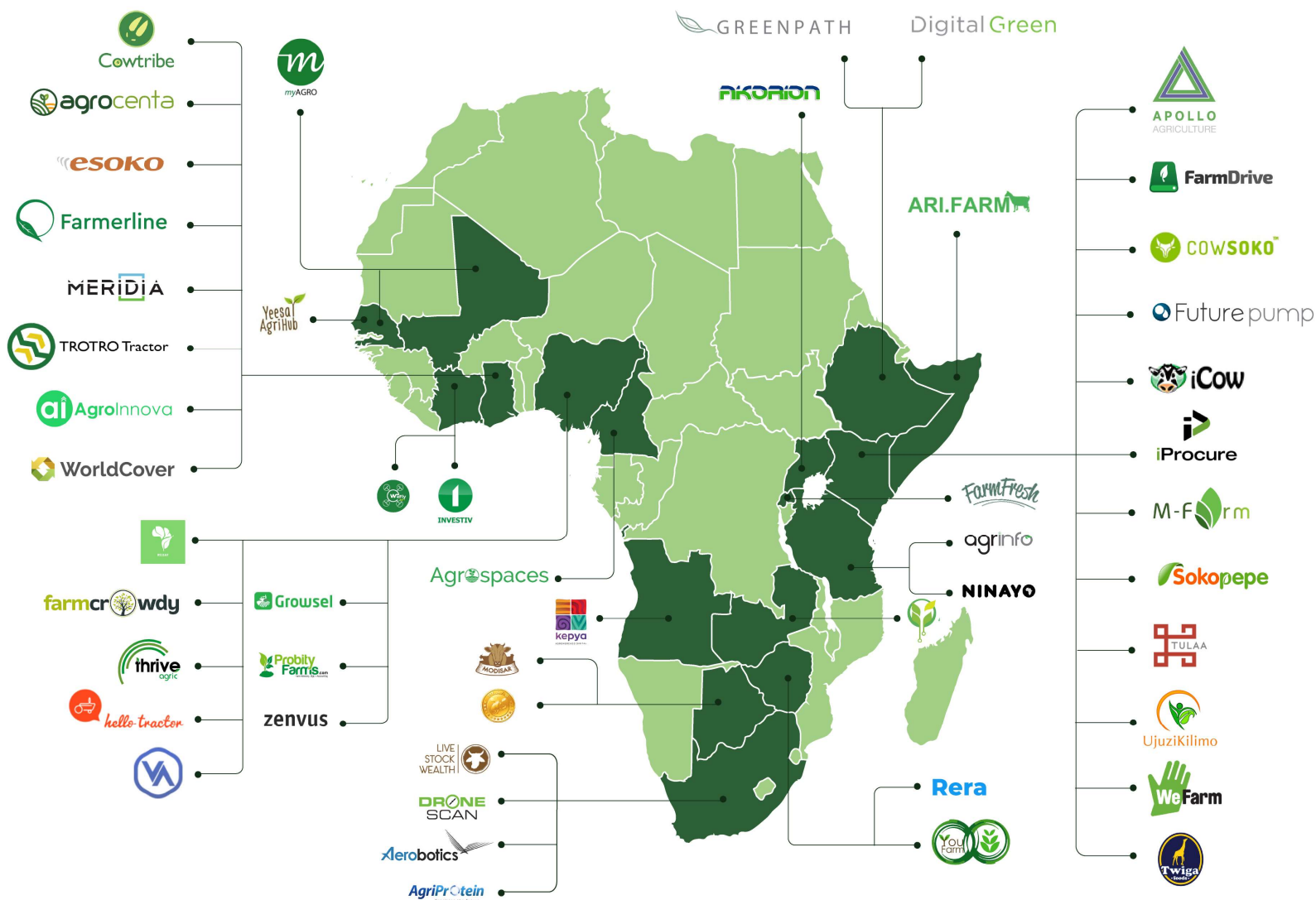


SDGs impacted





Africa's AgTech landscape and potential



**Funding raised
\$10+ million
(Q1 2020)**



SDGs impacted



Sources: Briter Bridges, GSMA, UN, TBI analysis