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# Digital Access and Economic Transformation in Africa

*Juliet Nanfuka*[1]

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## Abstract

*This document provides an overview of the current digital access landscape in Africa. It considers the intersections between digital access, rights, economy and transformation, using evidence from a series of country case studies which illustrate the various themes, and depict the dynamics faced by different countries when it comes to the digital landscape.*

[1] Juliet Nanfuka works on digital rights research and communications at the Collaboration on International ICT Policy in East and Southern Africa (CIPESA)

# Contents

# 1. Introduction

This document provides an overview of the current digital access landscape in Africa. It considers the intersections between digital access, rights, economy and transformation, using evidence from a series of country case studies which illustrate the various themes, and depict the dynamics faced by different countries when it comes to the digital landscape.

To understand the state of digital access in Africa, one has to delve into the key interests driving investment in this sector. The World Summit on the Information Society (WSIS) in 2003 was one of the early global platforms where internet access and its potential were discussed. The WSIS sought to inform and address the issues raised by information and communication technologies (ICTs). It followed a structured and inclusive approach at national, regional and international levels and engaged a multiplicity of different actors, including governments, private sector, technologists, academia and civil society.

By 2015, the crosscutting contribution of ICT to the Sustainable Development Goals (SDGs) and poverty eradication had been recognised by the UN, and it noted that "access to information and communications technologies has also become a development indicator and aspiration in and of itself" (SDG, 2016). This statement further supported the 2011 stance of the United Nations which noted that disconnecting people from the internet is a human rights violation and against international law (Kravets, 2011). In 2016, the UN General Assembly declared internet access a human right through a non-binding Resolution, meaning that states would not face penalties for failing to provide access. The Resolution instead focused on stopping governments from "taking away" access (Barry, 2020).

Various strategies have consequently emerged to align state ICT policy strategies, global best practice, and the SDGs. Among these is the recently adopted African Union (AU) strategy on Digital Transformation which aims to erase the digital divide and narrow the gender digital divide (African Union, 2020).

Across the world, technology is quickening the pace of social, political, and economic development. Increased access to broadband is fuelling this change which is accompanied by ever-quicker shifts in how technology is being used by the broad spectrum of digital citizens. However, these shifts also impact those who are not yet online in ways which are yet to be fully understood.

The global South is undergoing rapid social and economic change as a result of the confluence of mobile and Internet technologies. There is mounting evidence that broadband directly contributes to job creation and stimulates economic growth. Further, it is confirmed that an increase of 10 per cent in mobile broadband penetration in Africa would yield an increase in 2.5 per cent in GDP per capita, and a 10 per cent drop in mobile broadband prices would boost adoption of mobile broadband technology by more than 3 per cent (ITU, 2019).

Although significant progress has been made since the "digital divide" first became apparent, the problem of digital access and use remains big, complex and multidimensional. However, many countries on the African continent still suffer from a mix of progressive and regressive policies, over-regulation, mixed implementation of frameworks, poor political will, and in some instances,

continued instability. All of these factors impede the realisation of potential gains from increased digitisation, in addition to increased access to information and freedom of expression.

At the November 2021 Africa ICT Ministers' Forum, it was stressed that media freedom and access to information are important pillars for sustainable development, and are fundamental to attainment of international human rights, as per the United Nations Declaration on Human Rights (UNESCO, 2021).

It is hoped that more decisive digital transformation approaches and practices will help bridge the digital divide and also address some of the gaps affecting digitalisation on the continent. In recent years, various tools and initiatives have been introduced at global, regional and state levels to advance this ambition, ranging from frameworks guiding increased internet access to the curation of data privacy and open data standards.

## 2. Current State of Digital Access in Africa

This section gives a brief overview of the policy landscape which is informing the current state of access and use on the continent.

### i. Policy and Regulatory Environment

In recent years the tech policy landscape has grown to interact more directly at various levels, regionally and nationally. Underscoring many policy initiatives is the need for increased adoption of and reliance on digital technologies, as well as the deliberate harmonisation of digital processes across actors and sectors.

The 2030 Agenda for Sustainable Development, adopted at the UN Summit in September 2015, gave rise to the Sustainable Development Goals (SDGs). Among the SDGs is goal 5b to "enhance the use of enabling technologies, in particular ICT, to promote women's empowerment" and goal 9 to "build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation."

Meanwhile, in 2018, the Broadband Commission for Sustainable Development launched a new framework of targets aimed at "Connecting the Other Half" of the world's population, including through expansion of broadband infrastructure, and Internet access and use by populations around the world. The Commission has set seven ambitious targets for 2025 including on policy, affordability, gender, connectivity, digital skills, digital financial services and connecting Micro-, Small- and Medium-sized Enterprises (MSMEs) (Broadband Commission, 2019).

At an African regional level, in 2020, in a bid to spur innovation, inclusive and sustainable growth, the African Union endorsed the Digital Transformation Strategy (DTS) for Africa 2020-2030. This includes the aim of contributing to the realisation of the AU's Agenda 2063 and the Sustainable Development Goals. The DTS builds on existing initiatives and frameworks, such as the Policy and Regulatory Initiative for Digital Africa (PRIDA), the Programme for Infrastructure Development in Africa (PIDA), the African Continental Free Trade Area (AfCFTA), the African Union Financial Institutions (AUFIs), the Single African Air Transport Market (SAATM); and the Free Movement of

Persons (FMP). Together, these initiatives help support the development of a Digital Single Market (DSM) for Africa, as part of the integration priorities of the African Union (UNCTAD, Submission from African Union, 2021).

However, current legislation across numerous African countries does not provide adequate measures to realise many of these initiatives. Data protection, mass surveillance concerns, and limited oversight mechanisms still plague many of the existing laws which are largely written to benefit the state, at the expense of citizens and business.

Increased digitalisation in Africa needs to ensure cyber security and data privacy as primary components of an increasingly digitised world. In 2014, the African Union Commission introduced the Convention on Cybersecurity and Personal Data Protection – also known as the Malabo Convention. However, to date, only ten Member States out of the required 15 have ratified the Convention, leaving many outstanding concerns on the realisation of a harmonised policy regime, especially in the light of initiatives like the AfCFTA and PRIDA.

Globally, the importance of data protection has been recognised, as a pillar of the future digital landscape, including in Africa. Several regional bodies have invested effort to ensure that data protection and privacy are prioritised by Member States. Despite these efforts, specific legislation geared at the collection, control and processing of individuals' data remain lacking.

- The AU adopted the Convention on Cybersecurity and Personal Data Protection in 2014.
- In 2010, the Southern African Development Community (SADC) developed a model law on data protection which it adopted in 2013.
- In 2010, the Economic Community of West African States (ECOWAS) adopted the Supplementary Act on Personal Data Protection.
- In 2008, the East African Community, developed a Framework for Cyberlaws.

In the last two decades, several African countries have made substantive changes to their national ICT regulations, strategies and planning. However, as technologies evolve rapidly, many of these instruments become out-of-date, resulting in increased need for strategic and technical support (Nyakanini, Sayinzoga, & Gates, 2020).

Over the years, regulation has grown to accommodate the diverse facets of technology use and access, with laws on telecommunications, access to information, freedom of expression, infrastructure, and security framing these laws. More recently, laws and regulation has had to address financial technology, social media and digital content, artificial intelligence, data privacy, biometric data, digital currencies and digital taxation.

While many of the regulations introduced over the years demonstrate a balancing act between progressive and regressive forces, their tendency is shaped by the democratic credentials of the country. The more authoritarian a state is, the more likely it is to have regressive tech-related laws –despite relatively low internet penetration.

These often include laws which enable unwarranted mass surveillance, taking advantage of gaps in data privacy, and granting states and individuals undue authority with no oversight mechanisms. Countries such as Egypt, Uganda, Tanzania and Zambia have initiated laws and regulations which treat individuals as though they were companies or media houses, at the cost of freedom of expression and access to information.

For those countries with progressive laws, aimed at addressing areas such as access and infrastructure, data protection and privacy, as well as digital inclusion, these efforts are often marred by a lack of guiding regulations or poor political will to correctly enforce them.

Meanwhile, the 2018 introduction of the EU Data Protection Regulation (GDPR) came into effect and created some waves in Africa; however a number of issues remain unresolved for African states, including such as how EU subjects deal with other jurisdictions and state sovereignty (CIPESA, 2018).

### ii. Access Overview

As of March 2019, Africa had an internet penetration rate of 39.3%, amounting to 527 million users. As of December 2019, at least 213 million of these users were Facebook subscribers, reflecting the heavy reliance on this platform as a gateway to the wider internet. According to the GSMA, there are now more than 3.8 billion mobile internet subscribers globally, representing 49% of the world's population. However, Sub-Saharan Africa (SSA) accounted for almost half of the global population **not** covered by a mobile broadband network, since at the end of 2019, mobile internet adoption only stood at 26 percent (GSMA, 2020).

There are strong indications that SSA is on a positive growth trajectory, which will see an additional 167 million mobile subscribers by 2025, taking the total subscriber base to just over 600 million, representing around half the population. Nigeria and Ethiopia are expected to record the fastest growth rates over this period, at 9 percent and 11 percent respectively (GSMA, 2019). However, it is yet to be seen whether state actions, such as the persistent block on Twitter in Nigeria, and repeated disruptions to digital communications during the ongoing conflict in Ethiopia, will have a significant impact on this rate of growth.

The global population is expected to hit 10 billion by 2055, with approximately 95% of this growth taking place in low and middle-income countries. Sub-Saharan Africa is expected to account for 57% of this growth (equivalent to an additional 1.4 billion people). The United Nations projects that Africa's population will double by 2050 (UN, 2019) and, with 60% of Africa's population under the age of 25, the region will rank as the world's youngest continent. This population of young adults will be 'digital natives', likely to significantly shape and influence tech usage patterns of the future.

Digital ambitions in Africa continue to be hampered by the region's persistent challenges such as:

- Poor digital infrastructure, especially outside urban areas
- High costs of connecting to internet grids/infrastructure
- Erratic power supplies and, in many cases, the absence of electricity
- Low ICT skills and
- The gender digital divide.

Less than half of the population has access to electricity (World Bank, 2021), a key requirement for the realisation of the region's digital transformation. Meanwhile, the gender digital divide has barely changed since 2011 as globally, men are 52 percent more likely than 21 percent of women (A4AI, 2021) to have access to the internet. This gender inequality is just as present in economic opportunity and access to education, and is even further pronounced along rural-urban lines.

> The cost associated with exclusion along gender lines in low and lower-middle income countries has been estimated at US$1 trillion in GDP over the last decade.

To achieve a more inclusive digital society and associated transformation, governments need to initiate holistic mechanisms to address the various gaps, ranging from affordability to last-mile connectivity. The Alliance for Affordable Internet notes the need for comprehensive broadband strategies that include infrastructure investment, transparent policy targets, and programmes to deliver digital skills and literacy training, promote women's and girls' rights, and address safety and privacy concerns (A4AI, 2021).

### iii. Shaping Digital Economy through Digital Inclusion

The internet and its related tools have long been identified for their potential to drive economic growth and development in Africa. The ITU argues that expanding mobile broadband penetration by 10 percent in Africa would yield an increase of 2.5 percent in GDP per capita (Katz & Callorda,

2019). It is also estimated that by 2025, the internet economy is likely to contribute US$180 billion to Africa's economy and up to US$712 billion by 2050 (Gajria & Ayeni, 2020). However, only 10 out 45 African countries are currently able to offer "affordable" internet connectivity, according to the definition of "affordability" established by the A4AI, which defines this as 1GB of mobile prepaid data costing 2% or less of the average monthly income (Alliance for Affordable Internet, 2019). The high cost of access thus remains a critical hindrance to the realisation of potential internet growth and associated benefits for the economy.

Greater penetration of mobile and internet access is still held back by political instability, which has direct impacts on economic growth and on foreign direct investment (FDI) – both of which are fundamental in driving digital access and infrastructure development. Political stability is often considered as a pre-condition for FDI, since stability determines both security and the profitability of investment projects.

The more stable a country, the less risk it represents, and consequently the greater its ability to attract FDI. It must be noted that FDI flows to Sub-Saharan Africa decreased by 10% in 2019 to $32 billion after experiencing a significant increase in 2018 (UNCTAD, 2020), and investment flows were set to drop 25% to 40% in 2020, due to the influence of the COVID pandemic.

Poorly thought-out policy interventions in multiple sectors play a significant role in the FDI challenges experienced in some African countries. In the case of digital inclusion and economy, restrictive measures on internet access include taxation of social media, online content regulation, internet shutdowns, discriminatory use of laws affecting freedom of expression and access to information, unwarranted arrests and unclear commitment to internet governance best practices.

For example, during Uganda's January 2021 elections, a total internet shutdown was initiated by the state. According to fintech industry players, an estimated US$ 188 million (UGX 666 billion) was lost each day (All Africa, 2021) as banking and telecom sectors had their operations affected. Payment systems (eg ATMs, Real Time Gross Transfers and Electronic File Transfers), mobile money transactions, as well as services such as Git Hub, online content creators and app based services, were all affected by the nearly five day total shutdown which had been preceded by a social media block in the days leading up to the elections (Nanfuka, 2021).

## 3. The Scramble For Africa's Digital Landscape

Control over infrastructure can serve as a gateway to power with strong political and economic links. While much needed infrastructure was established in the early phase of internet access in Africa, more recent trends have taken a more sinister turn including on data protection.

### i. The Access Foundation: Undersea Cables

The scramble for a share in Africa's digital landscape has attracted foreign investments from multinational companies, such as South African based MTN, French owned Orange, European Vodacom, and Indian Bharti Airtel and loans from development agencies, such as the World Bank and European Union. Tech giants have expanded activities in Africa, including American owned

Facebook, and Google, and the Chinese owned Huawei and ZTE. Investments range from infrastructural construction, support and development, to provision of software services and maintenance.

Among the first key digital infrastructure investments made in Africa was a US $235 million project in 2010, jointly financed by 18 multinational telecommunication providers to establish the Eastern Africa Submarine Cable System (EASSY). This is a 10,000 km submarine fiber optic cable (Submarine Networks, 2021). A second major submarine cable, SEACOM, spans 17,000km and connects South Africa, Kenya, Tanzania, Mozambique, Djibouti, France and India. Differences between SEACOM and EASSY lie in their debt and financing structures ( IJGlobal, 2007)

The West Africa Cable System (WACS) stretches 14,530km and connects 15 countries. With an initial investment of US$ 650 million, the cable runs from South Africa and ends in London. Maintenance has been provided by the Chinese company Huawei Marine (Submarine Cable Networks, 2020).

Additionally, China has embarked on constructing a 12,000km submarine cable connecting Pakistan, East Africa, and Europe (known as PEACE) which extends from Pakistan to Djibouti, and down to South Africa (Qiu, 2020). The cable is run by Hengtong Group and constructed by Huawei Marine.

By 2018, nearly every African country was connected to the global internet highway by at least one of these submarine cables. As further submarine cables continue to be rolled out, a number of potential benefits include reduced costs, increased consumption, and growing demand for emerging technologies.

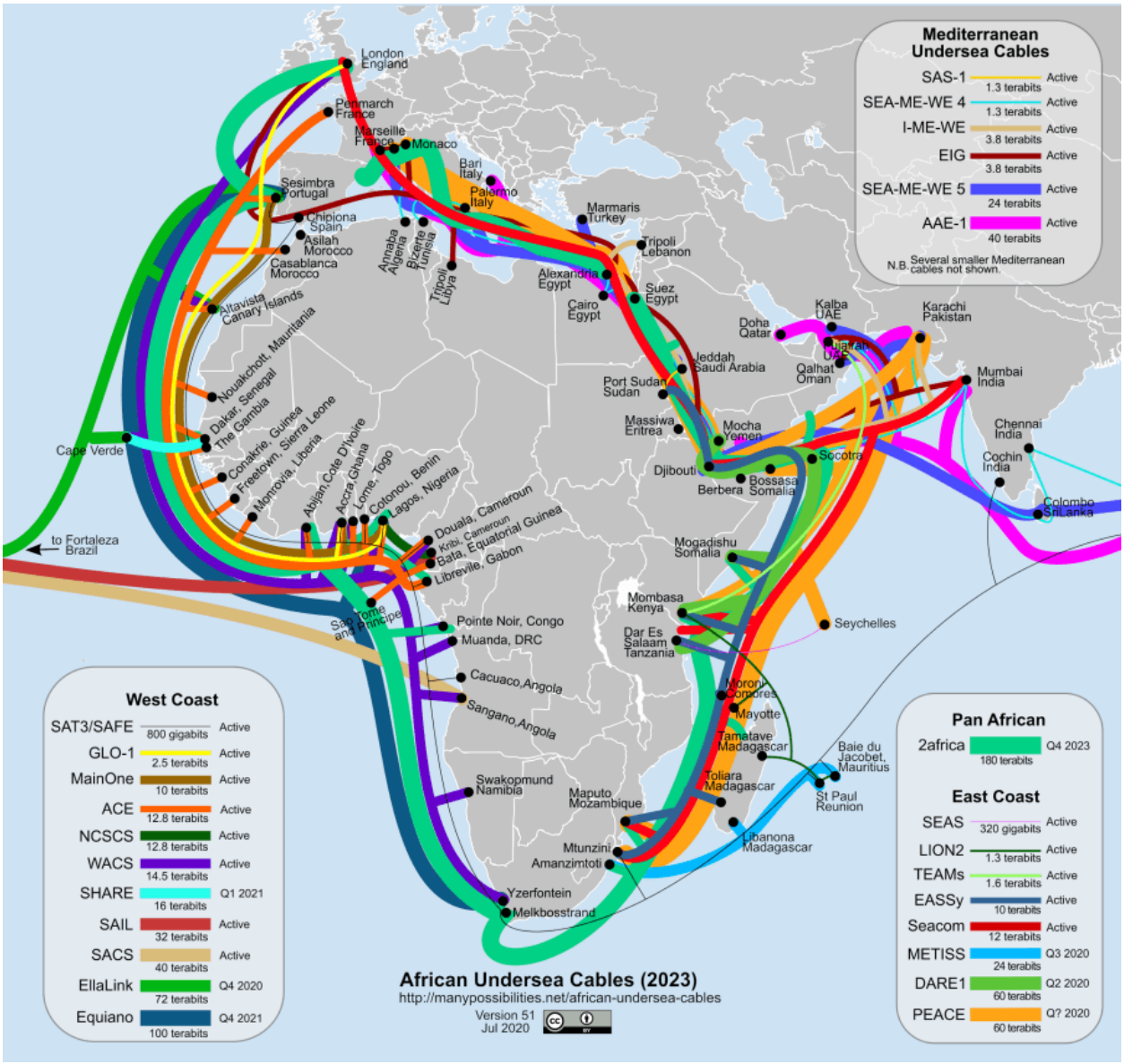


Image: African Undersea cables as of July 2020 | Source: [Manypossibilities.net](Manypossibilities.net)

### ii. Private Multinational Connectivity Efforts

In addition to government initiatives on last-mile connectivity, private actors have also ventured into this area. Google, through its holding company Alphabet, embarked on delivering connectivity in remote rural areas in Kenya and Mozambique through Project Loon (it entailed high-altitude balloons in the stratosphere which created an aerial wireless network). In Kenya, the project was a joint initiative with Telecom Kenya, while in Mozambique, partnership was sought with Vodacom. The project also received clearance from Uganda, through an airspace deal to fly the balloons in Kenya and partnership was attained with AT&T in the US. However, in January 2021, the initiative announced its termination due to its failure to meet long-term business goals (Westgarth, 2021). Earlier in 2019, Google introduced a project to install the subsea cable Equiano, which seeks to connect South Africa to Portugal with a staging post in Nigeria (Francois, George, & Stowell, 2019).

The tech giant Facebook entered the African connectivity race in 2013 with its Free Basics project, offering access to basic online services without data charges, and by the end of 2020 was live in 29 African countries (Nothias, 2020). In line with Facebook's mission "to give people the power to build community and bring the world closer together", they have mainly tailored their investments in Africa to address connectivity barriers by partnering with telecom operators and ISPs, to improve connectivity along the entire value chain (David Abecassis, 2020).

It is estimated that economic benefits to Africa from Facebook's connectivity initiatives may exceed USD$57 billion over the next five years (David Abecassis, 2020). The company has to-date supported infrastructure deployment in South Africa, Uganda, Nigeria and Kenya (Velluet, 2020). In Uganda, Facebook in 2017 partnered with Airtel Uganda and Bandwidth & Cloud Service (BCS) to build a 770-kilometer fiber network in the north-west of the country, as part of its Telecom Infra Project (Ba, 2017).

Facebook has also announced plans to build a subsea internet cable network – 2Africa - in partnership with operators such as China Mobile International, MTN GlobalConnect, Orange, Saudi Telecom Company (STC), Telecom Egypt, Vodafone and West Indian Ocean Cable Company (WIOCC) (Ahmad & Salvadori, 2020). The project, which is expected to go live in 2023-24 will lay 37,000 km of fiber cable connecting 16 countries in Africa and the Middle East with high-speed internet connection.

A more recent entrant, Elon Musk and his Starlink project, has ambitions of global satellite coverage, particularly in areas that are not covered by fibre optics or 3G and 4G frequencies. While it may offer ways to overcome state shutdowns of the internet, the cost associated with acquiring a Starlink connection remain prohibitive, at US$ 499 for the equipment and a monthly subscription of US $99 (Velluet, 2021).

## 4. The Geo-Political Interests of Cyber-Security and Surveillance

As Africa steadily expands its technology infrastructure and digital skillsets, the need to boost its cybersecurity is evident, on a par with global trends. Many governments are adopting internet governance models used by world powers such as China, US and Russia. However, the autocratic Chinese model appears to be gaining ground in Africa as it comprises widespread, sophisticated automated surveillance, online content manipulation and removal, data collection, and repressive laws to censor online media. Digital activists have faced violence, arrest, technical attacks, the blocking of foreign social media, websites and messaging apps, and revocation of mobile and internet connectivity (CIPESA, 2019).

In 2019, China's Huawei company was identified as the leading supplier of artificial intelligence software to governments in over 16 countries in Africa. This has attracted criticism for fuelling surveillance on the continent, with their technology being sold to governments in Uganda, Algeria and Zambia, allegations Hauwei has denied (Parkinson, Bariyo, & Chin, 2019). There are also disclosures which implicate various members of the European Union (EU) in the provision of spyware and data (Privacy International, 2020).

Intelligence entities like Israel's NSO Group and Black Cube, the Italian Hacking Team, the Anglo-German Gamma Group, Germany's Trovicor, France's Amesys, and America's Blue Coat Systems have also found a ready market in Africa, since they provide the technical expertise which underpins electronic surveillance including capabilities such as backdoor access (The Guardian, 2015).

The use of propaganda services and exploitative data analytics were also highlighted in the Cambridge Analytica scandal which gave some insight into how foreign firms are exploiting the weak data protection regime on the continent. Their involvement in the 2017 Kenyan and 2015 Nigerian elections illustrate how content manipulation tactics were being used in African states just as in North America during election campaigns (Democracy in Africa, 2020).

**China:** There has been growing Chinese domination of investments in Africa's digital sphere (Arcesati, 2020) through its tech companies – Huawei, Zhongxing Telecom Ltd (ZTE) – both of which have links with the Chinese military and intelligence establishments. Other companies include China Telecom, the Hengtong Group, Alcatel Shanghai Bell (ASB) and Transsion holding Investments. All have interests in infrastructure deployment, developing and supplying affordable smart devices, and digital skills development. Total Chinese investments and contracts in sub-Saharan Africa between 2005-2020 are estimated at $303.24 billion, with the technology sector attracting $7.19 billion (The American Enterprise Institute, 2020). In 2015, China introduced the Digital Skill Road (DSR) initiative under its Belt and Road Initiative (BRI), and is currently active in six African countries (Angola, Ethiopia. Egypt, Nigeria, Zambia, Zimbabwe).

On mobile technology, Huawei is reported to have built close to 50 percent of all 3G systems and 70 percent of 4G networks used by African telecom companies, while ZTE has built close to 30 percent of 4G networks (Wright, 2020). In 2018 alone, Huawei generated $5.8 billion in revenue in Africa, 60% of which was through the sale of equipment and services, and 40% through its phone networks (Clémençot, 2019). Huawei has recently ventured into building 5G networks in Africa with tests run in South Africa, Kenya and Uganda.

Although China has been ranked by Freedom House as the worst abuser of digital rights, numerous countries are following in their footsteps such as Angola, Ethiopia, South Africa, Rwanda and Egypt which have imported technologies that can be used to filter and block malware in addition to filtering and censoring online content (House, 2018).

**Israel:** Surveillance equipment and software have also been purchased from various Israeli companies. For example, in the run up to the 2014 Botswana elections, the military intelligence unit is suspected to have purchased surveillance equipment from Israel with capability both to spy on the internet and telephone conversations and to jam radio and mobile signals. Israel has also intensified its collaboration with Tanzania on defense and security areas including through cyber security and military technology.

**South Korea**: In 2017, a Memorandum of Understanding (MoU) was signed between Tanzania and South Korea. The five-year agreement aims to enhance Tanzania's cyber capabilities thanks

to the expertise and infrastructure of the Korea Internet & Security Agency (KISA) (Daily News, 2017) .

**Germany:** Surveillance technologies (FinSpy Mobile and FinSpy PC), purchased by the government of Botswana from a German based company, were reportedly used to spy on opposition politicians, journalists and human rights lawyers, using malware, remote monitoring and data siphoning capabilities (Botswana Guardian, 2015).

Due to the absence of a robust data privacy regime at either a continental or national level, African countries offer an open door to the exploitation and misuse of personal data.

# 5. Drivers of Africa's Digital Inclusion and Transformation

## I. Investment

Investment into cyber security appears to have been a primary focus area, as discussed earlier. However, the investment landscape has been broadening, to fully embrace digital technology, and broadband internet. Alongside investment in hardware, greater attention is being paid to building internet user digital skills, support for content development, and establishing greater protection of data.

Connectivity without the requisite digital literacy skills will not lead to the realisation of Africa's digital transformation (Caballero & Bashir, 2020). Major global companies are cementing their dominance on the continent, by addressing these digital gaps. Google for instance has invested hugely in supporting digital skills and content creation in the region; and in 2016 the company launched the Sub Saharan YouTube awards to support video creators in Africa (Croak, 2017). Through its Digital Skills for Africa project, the company reports having trained two million Africans in 29 countries (ITU, 2018).

Another US company in the digital skills race is Microsoft, which offers support to digital literacy and innovation, with a focus on healthcare, education, agriculture, finance and government services (Microsoft, 2021) through its Microsoft4Afrika programme launched in 2013. In 2019, the company invested $100 million with the launch of the Africa Development Center (ADC) which aims at upskilling Africans in data science, Artificial Intelligence (AI), mixed reality, and application development (Microsoft, 2019).

China is also elevating its game, presenting stiff competition to US based platforms such as Uber, and AirBnb, among others (George, 2019). Borrowing from their national digital ecosystems, Chinese e-commerce platforms have made their way to Africa. WeChat Pay, Alipay and Union Pay are being adapted to African localities, supporting the rise of fintech and financial inclusion through partnerships with African banks, such as Ecobank and Equity Bank (Yu, 2021). Additionally, Alibaba through its Electronic World Trade Platform (eWTP) has established hubs in Rwanda and Ethiopia (Li, 2019), subsequently offering a unique model for Africa's digital

economy, as it involves the integration of e-commerce, digital payments, logistics management and digital entrepreneurship training (Yu, 2021).
An estimated $428 billion is needed to achieve universal access to broadband connectivity across the world, with $94 billion needed for Africa alone (ITU, 2020). Full utilisation of digital services such as mobile banking, e-health, e-government and e-education will require reliable network connectivity (Tuerk M. 2020). For Africa to benefit from the digital potential, it requires an improvement in infrastructure (Nyakanini, Sayinzoga, & Gates, 2020), digital skills and digital content development to accelerate progress towards achieving the SDGs (Boadband Commission, 2019).

In 2020, the United States announced plans to promote private investment in Africa, including through the new Prosper Africa initiative and the $60 billion International Development Finance Corporation. Through this programme, the United States aims to invest up to $5 billion in Ethiopia, in industries that are being opened for privatization, such as telecommunications, geothermal energy, logistics and sugar (UNCTAD, World Investment Report: Regional Trends, 2020).

The Africa Continental Free Trade Area (AfCTA) could support greater foreign direct investment in the long run, as it reshapes perceptions of doing business in Africa. According to UNCTAD, intracontinental investment could receive a positive stimulus, especially once the investment protocol is finalised (UNCTAD, World Investment Report: Regional Trends, 2020). It is hoped that AfCFTA can reduce barriers to entry through increased digitisation and better connections made between Micro-Small and Medium-sized Enterprises (MSMEs) and global value chains. (Africa, 2019).

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