DIGITAL TRADE IN AFRICA

Implications for Inclusion and Human Rights

United Nations
Economic Commission for Africa

African Trade Policy Centre

FRIEDRICH EBERT STIFTUNG

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Executive summary and policy recommendations

Background

In July 2017, the African Trade Policy Centre of the United Nations Economic Commission for Africa (ECA), the Office of the United Nations High Commissioner for Human Rights (OHCHR) and the Friedrich-Ebert-Stiftung Geneva Office launched a joint report entitled *The Continental Free Trade Area in Africa: A Human Rights Perspective*. The publication contained a critical assessment of the human rights dimensions of what is to be the biggest trade agreement in terms of the number of participating countries since the establishment of the World Trade Organization.

Since that date, significant headway has been made towards establishing the African Continental Free Trade Area. The landmark Agreement Establishing the African Continental Free Trade Area, covering trade in goods and services, was signed in Kigali on 21 March 2018 by representatives of 44 Governments. As of 8 May 2019, an additional eight Member States had signed the Agreement, and the 22 ratifications required for the Agreement to enter into force had been received.

The Agreement includes a built-in agenda for a second phase of negotiations on competition policy, intellectual property rights and investment. However, if the African Continental Free Trade Area is to fulfil its potential in transforming African economies, it must also include a clear digital strategy. This has led to discussions on whether e-commerce should be included in the second phase of negotiations. At the same time, although the digital economy and the dynamism generated by digital trade solutions create significant opportunities, they also present challenges that will need to be addressed in a way that is inclusive, transparent and consistent with people-centred governance and the attainment of human rights.

It is against this background that ECA, OHCHR and the Friedrich-Ebert-Stiftung agreed to collaborate on assessing the inclusion and human rights implications of digital trade in the context of trade policy in Africa, which is underpinned by the African Continental Free Trade Area. The present publication is a result of that collaboration.

A conference on the theme "Digital trade in Africa: implications for inclusion and human rights" was organized by ECA, OHCHR and the Friedrich-Ebert-Stiftung in Addis Ababa from 31 May to 1 June 2018. To build upon the success of the conference, the three organizations agreed to prepare a joint publication on the main issues raised during the various sessions, and presenters were invited to contribute "think pieces" to the publication. In October 2018, an authors' workshop was organized to review the early drafts of those think pieces. The contribution by Omobola Johnson was produced on the basis of her 2019 Adebayo Adedeji lecture at the ECA Conference of Finance and Economy Ministers that was held in Marrakech, Morocco, from 20 to 26 March 2019.

The present publication is timely. In February 2019, the African Union Commission, ECA and other stakeholders were mandated to prepare a digital transformation strategy for the continent, to include effective means of securing a digital identity for all Africans. That initiative is complemented by the Digital Trade and Digital Economy Strategy that is being prepared by the Department of Trade and Industry of the African Union Commission. The recommendations on the strategies are to be submitted in early 2020. It is hoped that insights from the various contributions to this publication will help to shape the ongoing discussions on those recommendations.

Applying a human rights lens

Digital trade offers an innovative tool for industrial leapfrogging and income convergence, and human rights can provide firm ground for consistent and principled action. Finding the right balance between innovation and regulation is key in the area of technology, specifically with regard to digital trade. A human rights lens can assist in identifying those stakeholders whose inclusion and participation is vital in order to harness the full benefits of digital trade. In addition, a human rights approach is crucial to assessing broader issues of connectivity across the continent, access to and use of technology platforms, tools and services, privacy and data protection and the impact of digital trade on the realization of a range of human rights, including:

(a) The right to equality and non-discrimination: this includes barriers and offline discrimination as well as discrimination in relation to participation in the digital space. Real-life barriers include poverty, lack of economic access and state failures in the protection of rights, in particular women's rights.

(b) Privacy and access to information: this also links to violence and other security risks, which are often used as pretexts for surveillance and restricting access. Legal protection is also often lacking.

(c) Freedom of speech and expression, assembly and association: this includes the creation, expansion or updating of governance to ensure the use of and access to necessary means of communication.

(d) The right to work, adequate standard of living and other labour rights: there is a lack of equality of opportunity in digital trade, and discrimination exists in terms of the right to work and access to skills, credit and finance. Digitalization can also heighten precarious

working conditions, with insecure wages, more casual or freelance work and unstable contracts.

(e) The right to education: digital technologies can enhance the right to education, but women and girls are underrepresented among digital technology users, thereby furthering an already marked gender divide in Africa. Harnessing technologies is key to ensuring that violence and inequalities are not aggravated; digital education and literacy are needed to create an equal society.

(f) The right to development: this is at the core of African human rights instruments (for example, the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa) and requires connectivity, access to technology and know-how to harness the benefits of digital development.

Human rights exist regardless of offline or online status. The human rights discourse is disruptive in that it challenges the unjust power dynamics pervasive in the realms of business, trade and development. Moving into the digital trade space offers human rights practitioners a new platform for applying past successes and innovating future safeguards. In addition, the emergence of new technology systems, platforms and ideas creates an opportunity for human rights to be a guiding framework for the development of digital technology in Africa. There is a need for an active and participatory debate on controls, limits, and creating coherence between different regulatory regimes.

In carving out the relationship between human rights and digital trade in Africa, it is important to recognize that African States are party to a wide range of human rights treaties, including the African Charter on Human and Peoples' Rights. Agenda 2063: The Africa We Want of the African Union also provides a legal basis for considering human rights in the digital economy agenda of Africa; it contains the aspiration of an Africa of good governance, human rights, justice and the rule of law.

Updating the policymaker's toolkit in the digital era

The digital economy can lower barriers to entry to and help connect micro-, small and medium-sized enterprises with global markets and value chains through providing the services necessary to facilitate their exports. Communication networks and e-commerce platforms are facilitating new opportunities for businesses and workers in developing countries. Professional service platforms, for instance, connect professionals in developing countries to freelance opportunities around the world. Digital applications are already being leveraged to promote innovation and entrepreneurship, including the empowerment of women as traders, and mobile and digital solutions are contributing to filling credit gaps. The digital economy also offers new possibilities for productive job creation for young people, who are typically quicker at adapting to new technologies and developing new digital solutions than those who have been in the workforce longer.

These gains are, however, not automatic, and the digital economy also presents immense challenges for the continent in the context of the digital divide. Owing to the concentration of

digital technologies in developed countries and the skills-biased nature of digitalization, the main beneficiaries of the digital economy are currently the most developed countries and a few countries in Asia. This risks reducing the ability for Africa to resolve its unemployment problem and take the traditional route to industrialization. In addition, inequalities in access to technology within countries are typically rooted in structural and historical discrimination, so groups that are already left behind, in terms of their access to education, food, energy, water, sanitation or decent jobs or in terms of their literacy levels and skills, stay behind. There are also concerns that digital trade embodies network effects that can lead to market concentration and anti-competition issues, and that it may facilitate the distortion by international companies of their taxable income through transfer pricing.

As argued in the article below entitled "Updating the policymaker's toolkit: a new digital trade and development landscape", the response must be an updating of policymakers' toolkits to face the new opportunities and challenges of digital trade and ensure inclusive outcomes that uphold human rights. It is crucial that African countries do not take a passive approach to digitalization but that they take an active, decisive and principled approach to closing the digital divide, which exists in terms of both access to and use of technologies.

Structure of the publication

The present publication contains four special commentaries, followed by two articles that provide contextual background and a series of innovative and forward-looking contributions (think pieces) from a range of academics, practitioners and researchers with expertise in the trade and investment landscape in Africa.

In the first background article, entitled "Updating the policymaker's toolkit: a new digital trade and development landscape", the linkages between digital trade and development are described, an update on Africa and the e-commerce agenda of the World Trade Organization is provided, and how the African Continental Free Trade Area could foster a continental approach towards the digital economy is considered. In the second background article, entitled "Human rights, connectivity and digital trade in Africa", the reasons behind exploring human rights in the context of digital trade and approaches to applying human rights to digital trade are tackled. Emphasis is placed on the issue of connectivity, a precondition for any discussion on digitalization, which affects a number of economic and social rights.

The nine think pieces offer unique perspectives on digital trade in Africa and its implications for human rights. The topics of the pieces differ widely and cover transfer of technology, the digital divide, work and skills, entrepreneurship, youth, gender, manufacturing, data governance and personal data protection.

Policy recommendations

The policy recommendations contained in the present publication point to what needs to be done in order to fulfil Governments' commitments to human rights, while at the same time developing national, regional and continental approaches and frameworks to support digital trade

in Africa. For practical purposes, the recommendations have been structured into five thematic categories: regulation and governance, digital infrastructure, social and personal security, education and skills, and trade and development cooperation.

Given that the aim of the present publication is to explore the issues, and not to cover them comprehensively, ECA, OHCHR and the Friedrich-Ebert-Stiftung hope that this publication will encourage other stakeholders to undertake further human rights analysis of digital trade in Africa and in other regions.

Regulation and governance

- Efforts must be made to preserve space within domestic policy for evolving data-governance frameworks for the digital economy, for the regulation of digital transnational corporations and emerging e-commerce marketplaces and for digital industry protection measures, which are still in their infancy.

- Regulatory or other intrusions into the right to privacy of individuals must be limited and justifiable in terms of African-driven human rights standards.

- Operational licences should only be issued to those platforms that respect regulatory frameworks.

- To ensure convergence, an African regional framework should be developed to regulate more efficient technology giants. The African Continental Free Trade Area offers a platform for establishing a digital single market, akin to the European Union, which could incorporate a continental regulatory framework with equal standards for all platforms, regardless of their size.

- All member countries of the African Union must take stock of their specific geo-economic advantages and disadvantages in order to determine their national digital and data strategies.

- Multi-stakeholder engagement should be central to attempts to create a regulatory environment that respects human rights and supports digital trade. Existing relevant multi-stakeholder forums should be leveraged as part of that engagement.

- Governments need to support the building of local capabilities to design and invent homegrown additive technologies, drawing on locally sourced materials. Efforts should be made across the board to satisfy a range of industrial and consumer needs at highly customized levels.

- The effects of e-commerce on domestic resource mobilization in Africa need to be taken into account and an international governance framework should be put in place to facilitate the taxation of international e-commerce transactions in Africa.

- There is a need for mandatory language for technology transfer-related provisions under a global digital trade regime. The requirement to transfer technology should also apply to foreign companies when they access the lucrative African market. The requirement to disclose and facilitate transfer of and access to non-personal data, source code and algorithms could

also become a market access condition to the African Continental Free Trade Area market.

- Governments should prioritize the collection of qualitative and quantitative gender-disaggregated data on women's participation in the digital economy to inform meaningful dialogue and policymaking.

- The African development discourse should more effectively explore how digitalization can be used to raise agricultural production and productivity in Africa.

Digital infrastructure

- A two-pronged approach to digitalization is needed in Africa, namely: (a) investing in digitalization; and (b) building up local industrial capabilities.

- Financing to improve access to digital technologies and digital infrastructure should be given greater attention than has been the case so far.

- In relation to the digital divide, data costs must facilitate broad access to and use of digital technologies and digital infrastructure to encourage economic activity. Competition in infrastructure is a necessary step for fair pricing.

- A broad appreciation of the digital divide should also ensure that policy interventions consider all sociopolitical and economic aspects that may impede access to digital technologies, digital infrastructure and digital literacy.

- Efforts are needed to develop comprehensive and targeted science and technology innovation policies to ensure that African countries enhance their capacity not only to assess and absorb imported digital technologies, but also to produce the technologies needed to address their unique developmental challenges and to export to other regions of the world.

- Research on digital technology and its applications should be supported in African countries and could involve the establishment of regional and national digital research and learning centres.

- The establishment of digital entrepreneurial ecosystems, underpinned by national innovation systems that support the integration of digital technologies into enterprises, should be key elements of the digital entrepreneurship strategies of African countries. Forums on digital-based entrepreneurship could be set up in which public-private dialogue and collaboration, in addition to e-business networks and support groups, are fostered.

- Employment gains from the productivity effects of digital technologies should be maximized through the reinvestment of cost savings from productivity gains into new job-creating activities, building the absorptive capacity of the workforce and promoting better domestic linkages between firms and sectors.

- There is need to foster an environment for online payment solutions and create opportunities for women to learn how best to leverage their use of the Internet and mobile phones to access e-finance and other information and communications technology-enabled financial services.

- Efforts should be made to introduce special measures that respond to the specific challenges faced by women traders in the informal sector, particularly in terms of participating in new trade opportunities and developing microenterprises into more productive enterprises.

Social and personal security

- Workers will need to be protected against job polarization, increasing competition and pressure on wages and the rising precariousness of online work.

- All African countries must pay attention to how digital and data innovation opportunities can be leveraged for equitable value distribution in the economy. Policy and legal frameworks established on a foundation of rights are vital in this regard so that road maps to build future economies are well grounded in normative principles.

- Human rights provide both a normative and a constructive framework for incorporating policy concerns into economic policies relevant to the African Continental Free Trade Area as a necessary step towards implementing the Sustainable Development Goals.

- The United Nations Guiding Principles on Business and Human Rights should be incorporated into and expanded upon by African Union mechanisms in order to impose reasonable obligations on those private actors that are central to facilitating or inhibiting digital trade.

- The use of biometric data for any identification and verification process should be on the basis of an objective appraisal of the necessity of such use, taking into account human rights considerations.

- Interference with privacy through the sharing of individuals' biometric data between States or third parties must comply with the human rights requirements of legality, legitimacy, necessity and proportionality.

- The implementation of any biometric system must be subject to monitoring by independent data-protection authorities or other competent bodies comprising experts on privacy and human rights.

- Effective remedies that afford redress to victims of violations of the right to privacy resulting from the unlawful processing of biometric data must be adopted.

- The rights of data subjects – the right to information about the data held and the right to access that information, object to its processing and have incorrect personal data updated or amended – must be respected.

- Effective security measures to prevent violations of the right to privacy through means such as encryption and anonymization must be adopted.

Education and skills

- Instead of focusing only on skills, attention should be given to lifelong education, learning and civic skills.
- Non-routine cognitive tasks in the digital economy will require job-specific digital skills (for example, computer programming) and job-neutral digital skills (for example, data analysis), as well as "soft skills" such as managerial, collaboration, communication and analytical skills. Formal education and national skill development and training strategies should reflect that.
- Business and entrepreneurial skills, including financial planning, marketing, strategic planning and website design skills, must complement opportunities for digital skills development.
- Targeted skill-development programmes should have the goal of increasing the ability of the workforce in African countries to acquire, utilize and implement new digital technologies.
- Governments must forge collaborative partnerships with a broad range of stakeholders, including the private sector, to ensure the longevity of e-commerce skill development initiatives.
- It will be important to define the digital skills and digital entrepreneurial skills and competencies that meet the needs of African women entrepreneurs and support their equal participation in e-commerce.
- Efforts are needed to actively engage in and ensure meaningful dialogue on the design of a gender-responsive digital skills and digital entrepreneurship strategy.

Trade and development cooperation

- Cooperation and development assistance arrangements between Africa and its development partners should integrate capacity-building assistance into the areas of digital technology, digital manufacturing and science, technology, engineering and mathematics.
- There is a need for a collaborative and consensus-based approach at the multilateral level to arrive at improved technology transfer-related provisions that cater for the unique situation of the least technologically advanced countries, which are latecomers to the use of digital technology.
- The least technologically advanced countries should be granted, under a global digital trade regime, the flexibilities and exemptions necessary to enable them to realize their right to development and achieve the Sustainable Development Goals.

- There is a need for a comprehensive aid-for-digital-technology programme to facilitate digital technology transfer and enhance the absorptive and adaptation capacities of the least technologically advanced countries.
- There is a need for positions on digital trade to evolve to enable African countries to make the most of the opportunities for industrial leapfrogging.
- Before signing any trade agreement, it is imperative to undertake a systematic audit of all its provisions (including those pertaining to digital trade policy) and their implications for human rights and development.
- Open access to government data should be encouraged and facilitated as a necessary component for a sound trade environment.
- As an active step towards combating online discrimination that could negatively impact the trade environment, transparency must be encouraged in policy – including at the level of algorithms.

Special commentaries

The right to an identity in the digital age

Vera Songwe

The fundamental right to an identity

The right to an identity underpins all human rights. The attainment of the right to education, the right to health, the right to employment and the right to an adequate standard of living is not possible without the attainment of the right to an identity. Identity unlocks services as diverse as land ownership, access to financial services, voting, business registration, social protection and transfer payments, school enrolment and medical treatment. Strong identity systems can also protect against human rights abuses such as human trafficking, corruption and child marriage.

However, roughly 1.1 billion people remain without an official identity, of whom 502 million of whom reside in Africa, where half of the population is not registered at birth.[1] These people are invisible, unaccounted for and left behind. The situation is particularly acute in poor and conflict-affected countries such as the Democratic Republic of the Congo, Liberia, Somalia and South Sudan, where there are no comprehensive population registries to verify citizens' identities.[2]

Over the previous decade, identity has emerged as an important policy priority in African countries. The subject of identity also has greater prominence in the Sustainable Development Goals than in the Millennium Development Goals. Target 16.9 of the Sustainable Development Goals is to provide legal identity for all, including birth registration, by 2030. Furthermore, legal identity is crucial to supporting the achievement of a range of other Sustainable Development Goals, such as social protection (target 1.3), access to economic resources (target 1.4), access to health services (target 3.8), the completion of education (target 4.1), equal rights of women to economic resources (target 5.a), the eradication of forced labour and human trafficking (target 8.7), and reduced corruption (target 16.5).

At the same time, it is well recognized that for identification systems to play a meaningful role in enabling individuals to participate fully in society and the economy, registration must be linked to tangible benefits such as financial inclusion and emergency relief.[3] The right to an identity is not an end in itself but a means to exercise other fundamental human rights, in particular for the poor and marginalized.

Digital identification: transforming the identity landscape

Advanced biometrics, mobile authentication, blockchain-backed identification systems and user-controlled identification are transforming the identity landscape. New forms of digital identification offer an innovative and revolutionary solution to include the excluded through bringing a form of identity to the

1 United States Agency for International Development (USAID), Center for Digital Development, *Identity in a Digital Age: Infrastructure for Inclusive Development* (2017), pp. 7–8.

2 Alan Gelb and Anna Diofasi Metz, "Identification revolution: can digital ID be harnessed for development?" CGD Brief (Washington, D.C., Centre for Global Development Brief, October 2017).

3 Ibid

unidentified world, a system of banking to the unbanked world and a channel for serving the unserved world. This is essential in many of the least developed countries, where civil registration has been neglected. In addition, while traditional identification systems typically rely on demographic data, digital identification systems go beyond this to provide a more detailed profile of individuals based on digital traces or footprints. This additional information can be used to further expand benefits and access to services for vulnerable groups. Technology-based inferences about an individual's trustworthiness can facilitate the access of otherwise unidentified people to credit, banking or employment, for example. Compared with paper-based systems, digital identification systems can also help to build trust in governance and reduce human rights abuses by the State.[4]

Some developing countries have already leapfrogged developed countries in the use of digital authentication. The Aadhaar programme in India is arguably the world's most comprehensive digital identification system. Indian residents can apply for an Aadhaar identification number by submitting their proof of identity and address and registering their biometric information. In its eight years of existence, close to 1.2 billion people have enrolled in the system and it has evolved into an open platform for digital payments, document management and other new services.[5] Aadhaar identification numbers can be used to access key services and programmes such as buying and selling property, setting up bank accounts, filing tax returns, receiving welfare payments, enrolling children in school and receiving marriage certificates.[6] The system has also supported financial inclusion; in mid-2014, the country's Prime Minister instructed banks to allow people to open bank accounts with their Aadhaar number. In 2015, the country's unbanked population was 233 million, about half of the 557 million recorded in 2011.[7] Indonesia, Pakistan, Peru and Thailand also have widely used, high-coverage digital identification systems.

Digital identification is gaining popularity in Africa, with several new initiatives being launched in countries including Algeria, Ghana, Liberia, Malawi, Nigeria, Rwanda and Senegal. The digital identification system of Rwanda is considered one of the most advanced on the continent. National identification cards containing biometric data are issued to all people aged 16 or above. The system has achieved over 95 per cent coverage and is now connected to a host of public and private institutions. The national identification card or number is also required to access most services, including health care, higher education, taxation, pensions, social assistance, financial services and SIM registration. While there is currently no biometric verification, service providers can access a secure online portal where they can verify identity and biographical data using a person's national identification number.[8] In 2017, Malawi succeeded in achieving universal identification coverage in 180 days from a starting point of zero per cent. This was the result of a mass registration exercise using customized biometric registration kits. The Government of Malawi is now aiming to link the digital registry to other systems, including commercial banks, the Malawi Revenue Authority and the ministries of education, agriculture, transport, health, and local government.[9]

4 USAID, *Identity in a Digital Age*, p. 3.

5 Gelb and Metz, "Identification revolution".

6 USAID, *Identity in a Digital Age*; and Upmanyu Trivedi, "World's largest digital ID plan gets top India court backing", *Bloomberg Politics*, 26 September 2018.

7 Tanaya Macheel, "Inside Aadhaar: India's massive digital identity program", *Tearsheet*, 22 August 2017.

8 "Digital identity and the African Continental Free Trade Area", issue paper discussed at the Specialized Technical Committee on Trade, Industry and Minerals of the African Union, Addis Ababa, October 2018.

9 United Nations, "Malawi's national ID project praised at Africa's largest forum on digital identity", press release of 27 April 2018.

Digital identification for unidentified displaced persons

Refugees, asylum seekers, stateless persons and internally displaced persons comprise a particularly marginalized group, for whom the right to an identity is indispensable. Africa hosts the largest number of displaced people worldwide. In 2017, about 24.2 million people in Africa were forced to flee as a result of conflict, persecution, other human rights abuses or food insecurity; eight out of the 10 countries with the highest proportion of refugees (compared with national population size) are in developing regions, with five of them among the least developed countries in Africa. From a demographical point of view, the refugee population in Africa is more vulnerable than that in other regions. For example, 51 per cent of the refugee population in Africa are women, compared with 39 per cent in Europe. Furthermore, 59 per cent of refugees in Africa are children (under the age of 18), compared with 29 per cent in Europe.[10]

Providing protection and delivering social services and humanitarian assistance to the growing refugee population in Africa is a pressing priority. Displaced persons typically flee their homes without their official identification or documentation such as educational certificates. This means that conflict and persecution rob them of not just their home, but also their identity. This also confiscates their means to exercise their fundamental human rights, whatever their nationality, ethnic origin or place of residence.

Leveraging digital technologies and the digital footprints of displaced persons who lack formal documentation can open new routes for inclusion. Digital identification schemes can help to streamline and improve the targeting of humanitarian assistance and social services, and at the same time reduce costs and time spent on paper-based registration or authentication, which is also often not an immediate option for displaced persons.

In fact, digital authentication is increasingly being adopted in humanitarian aid projects to more efficiently manage benefit distribution. Some humanitarian schemes now allow individuals to use digital identification to purchase goods and services directly from local markets, offering displaced persons greater flexibility and autonomy in how they receive their support. For example, in Jordan, the Office of the United Nations High Commissioner for Refugees (UNHCR) set up an iris-scanning system for cash machines to distribute aid in the form of cash to refugees. This has not only helped to enhance refugees' choice, but has also reduced stigma by allowing refugees to access cash machines just like anyone else in the community.[11]

Digital forms of identification are also gaining traction in the humanitarian sector in Africa. UNHCR has strengthened protection activities by rolling out its biometric identity management system at several sites across the region, including in Chad, the Democratic Republic of the Congo, Ethiopia and the Niger. In the Ubangi Province of the Democratic Republic of the Congo, the biometric registration of 39,200 refugees from Central Africa had been completed by the end of 2017.[12] Several applications of blockchain have also emerged, such as allowing users to build an identity through mobile money transactions with the goal of translating economic activities associated with refugee status – such as cash transfers and remittances – into a trusted, portable record of financial activities that refugees can use to access financial and social services in the future. The openness

10 Office of the United Nations High Commissioner for Refugees (UNHCR), *Global Trends: Forced Displacement in 2017* (Geneva, 2017), p. 59.

11 USAID, *Identity in a Digital Age*, p. 21.

12 UNHCR, "Regional summaries: Africa", in *UNHCR Global Report 2017* (Geneva, 2017), p. 68.

and immutability of the blockchain platform is expected to encourage formal institutions to trust people who may otherwise lack credit histories and official identification.[13]

African Continental Free Trade Area: a platform for cooperation on digital identification

Digital identification programmes are not without faults. Some have struggled to receive high-coverage rates owing to costly and cumbersome registration requirements. Biometric exclusion, or difficulties in accessing or using digital technologies, can be a particular barrier, and may risk deepening the degree of exclusion for those without a digital presence.[14] Advances in biometrics and digital identification systems have introduced new concerns related to data privacy, control of the sharing and use of data, identity theft, data breaches and mass surveillance.[15] Recent data hacks and breaches have illustrated the need for an approach that places data ownership in the hands of identification holders, and not platform providers. Establishing safeguards, through both legal frameworks and technology, will be crucial to ensuring that the new data created by digital identification are properly stored and managed.[16] Africa can look to existing examples of good practice in this area, such as the General Data Protection Regulation of the European Union. At the same time, to reduce costs and maximize benefits, the existing isolated and fragmented digital identification systems in Africa will need to be harmonized and integrated.

Although digital identification systems present a number of challenges for African countries, those challenges should not dissuade the continent from pursuing the clear benefits of such systems. What is clearly needed is a system of governance that both tackles the challenges associated with digital identification and capitalizes on the opportunities it offers. African countries must work together and adopt similar strategies to ensure that digital identification is an instrument for the attainment of human rights, empowerment and inclusion rather than for surveillance, disempowerment and exclusion. The African Continental Free Trade Area provides an unparalleled opportunity for cooperating on digital identification and developing a continental policy and regulatory framework that addresses issues related to data privacy and security. The strong political commitment and leadership underpinning the African Continental Free Trade Area also provide a robust foundation for promoting the wide uptake and continued sustainable and inclusive roll-out of digital identification platforms. With this in mind, the African Union and the Economic Commission for Africa are working closely together on developing a digital identification strategy for Africa.

It is clear that, in the context of the African Continental Free Trade Area, African identity systems will need to be harmonized and interoperable to put the continent at the forefront of the digital economy. To that end, the African Union and the Economic Commission for Africa are promoting the establishment of a common African technical standard for digital identification platforms so that the benefits of digital identification are accessible in different African countries and regions. This would build upon the African Union Convention on Cyber Security and Personal Data Protection, as well as the Personal Data Protection Guidelines for Africa that were recently launched by the African Union Commission and the Internet Society. Since unique identifiers can be different across countries, issues

13 USAID, *Identity in a Digital Age*, p. 60.
14 Gelb and Metz, "Identification revolution".
15 USAID, *Identity in a Digital Age*, p. 3.
16 "Digital identity and the African Continental Free Trade Area".

of mutual recognition of digital identification must also be considered in the implementation of the African Continental Free Trade Area Free Movement of Persons Protocol and Trade in Services Agreement.[17]

An additional priority area for cooperation must be to enhance digital literacy and bridge the digital divide through investments in hard infrastructure and human resources. To this end, a share of the efficiency and cost savings generated through the use of digital technology could be used to support people who have difficulties in utilizing new digital identification systems. In Krishna District in India, for example, the Village Revenue Officer is responsible for authenticating beneficiaries who face problems with the digital systems. Financing such a position helps to ensure that legitimate beneficiaries are not excluded from accessing their entitlements.[18] Minimizing the requirements for accessing digital identification platforms and taking into account social and cultural norms will also be key. All-female registration units, as adopted in Pakistan, can offer a simple yet powerful tool for inclusion in this regard.[19] More broadly, training in digital technologies and applications will be needed to enhance capacities in developing and managing digital systems.

Finally, the African Continental Free Trade Area can and should be utilized as a platform to support cross-border e-commerce on the continent and increase African citizens' digital footprints. This will be vital to increasing the scope and gains of digital identification applications. At the same time, digital identification is about increasing confidence when individuals and businesses transact with each other, and can mutually reinforce cross-border e-commerce. Continental collaboration towards digital infrastructure development must include the development and integration of digital payment systems. This will not only help to facilitate e-commerce across African countries, but will also help to establish more comprehensive digital identification footprints and credit scores in support of more inclusive lending.

I call on you all to join this African movement to ensure that our 502 million unidentified have the right to an identity, which is the key to exercising all fundamental human rights.

17 Ibid.

18 Anit Mukherjee and Alan Gelb, "Beyond ID: using digital identification to transform governance", Center for Global Development, 20 September 2018.

19 Gelb and Metz, "Identification revolution".

Dignity in digital trade

Kate Gilmore

With the rise of digital technologies, the future is brimming with innovations, inventions and initiatives that extend far beyond our imagination. During the last decade alone, parts of Africa, Asia and Latin America have leapfrogged into third generation (3G) mobile networks. Today, small enterprises in megacities and in underdeveloped villages are able to connect to global markets through digital platforms. The Internet offers boundless opportunities, it seems, for transparency.

For developing countries, the next era of digital trade is set to push the boundaries even further. In Africa, digital commerce has the potential to create new types of jobs, invigorate economies and strengthen value chains. Highly variegated international production networks and Internet-enabled trade allow small businesses to connect directly with customers in almost every country in the world. The African Continental Free Trade Area, which was launched earlier this year, will be a major boost to African economies and a potential game changer. Digital tools also hold enormous promise for development through furthering the realization of the rights to education, health, water and other necessities. However, the risks of those tools are real and present.

The pace of rapid disruptive technological progress means we cannot predict the fuller implications of technological developments. The negative consequences for rights are only now unfolding fully; the inadequacy of our analogue governance, legal and normative systems in the face of this is all too apparent. Yet what remains clear, despite the dramatically changed context, is that values – our common values – can and must be our lodestar, particularly in uncharted waters. Those values are best and most authoritatively captured in the Universal Declaration of Human Rights. Seventy years on, the values, principles and commitments contained in the Declaration are as relevant in the virtual domain as they have proved to be in the physical. Their worth is evident not only when they are upheld, but also by the cost to individuals and communities when they are violated.

We are keenly aware that we need to be vigilant and proactive to ensure that everyone shares in the benefits of technological progress and that all are protected from potential and actual harms of new technologies. While human creativity and intellect drive innovation and content creation, those same developments can see human beings reduced wrongly to mere bytes or to data sources in the digital space, or even bypassed altogether. How then do we adhere to, reassert, promote and protect human dignity in a digital market space?

We must ensure that the contours of access to the Internet and new technologies are not merely reproducing and thus reinforcing the all-too-familiar patterns of inequality. We must use the transition to a digital economy to break with inequalities related to gender, ethnicity and origin; to challenge poverty traps; to increase access to health care, shelter and education; to protect the freedom from discrimination based on sexual orientation and freedom of expression; and to better manage the countless other factors that can impact on individuals' enjoyment of their universal rights. This challenge stretches our governance, moral, ethical, legal and political frameworks and regulatory capacities.

If the tools of new digital trade are used to further oppress, rather than empower, what hope is there for those already locked behind development's curve to participate in digital marketplaces? If new technologies boil down to new ways to engage in hate speech, bullying and incitement to violence, what is their sum gain? Who profits in the end and who pays the higher costs?

New frameworks must take into account these risks and work to better ensure opportunities for all to participate and to benefit. This means building networks and protections into regulations that support affordable access to digital networks. This is particularly true for women's involvement in trade, which in Africa is mostly in the informal sector. Inclusive pathways could help women who have limited digital literacy and empower them to harness the benefits of digital trade. Moving forward, how can we ensure that monopolies of more digitally savvy groups do not crowd out marginalized populations?

Humanity has an unprecedented opportunity to make digital commerce a lever to accelerate our advance towards a more equitable and fairer world, and thus towards a life of dignity for all. Ultimately, it means that the questions examined in the present publication are not about technology, intriguing as the overlapping universes of gadgets, automation, artificial intelligence and big data are. This compendium, taking digital trade in Africa as a starting point, contains an analysis of what technologies mean for people as rights holders: for their freedom, their dignity and for their rights. Options are put forward about measures to ensure that those on the margins of society, who have the fewest opportunities to participate, benefit from the huge potential that arises from the move towards digital trade. That would be truly innovative and genuinely transformative, and it's that which this publication seeks to inspire – collective creativity, energy and action to secure and accelerate our journey together towards the best possible future.

Mitigating the risk of digital exclusion in Africa

Mukhisa Kituyi

Digitalization is fast becoming a vital part of the trade landscape in Africa. It affects how we live, work and develop our economies. We increasingly, use the Internet to verify information, and whether or not a business has a web presence may affect whether we order goods or services from that business. E-commerce (the buying and selling of products online) has grown hugely and, by all projections, is set to continue growing. This creates new opportunities for visibility, market expansion and reach with much less investment than in traditional commerce, which can be transformative in supporting African countries to leapfrog some of the challenges they grapple with when attempting to access foreign markets both within and outside of the continent.

However, the growth of e-commerce also raises concerns as to how African economies will be beneficially connected to the world economy, not least in the light of the growing dependency on global digital platforms.

Harnessing the full potential of the digital revolution requires looking at the entire chain of production and placing a special focus on accelerating productivity growth so as to create two-way trade (imports and exports; in and out of Africa). Digitalization – understood as the integration of digital technology into everyday life – should be managed in such a way as to encourage more equitable, inclusive and sustainable global economic expansion and employment in support of the Sustainable Development Goals.

This points to the reality that the positive impact of the digital revolution will need to be designed and managed for the African context. It must be driven by policy choices, regulatory acumen and social norms.[1]

In the digital economy, trade can bring economic benefits to both businesses and consumers. Trade is already one of the main driving forces behind sustained economic growth because it helps countries to improve productivity, which is a key indicator for technological advancement and the chief source of future economic welfare.

In Africa, Kenya has emerged as a leader in digitalization. Internet penetration increased by roughly 25 percentage points in the period 2001–2016, with firms in the machinery, electronics and transport sectors being the most digitalized, followed by those in the chemicals, plastics and rubber sectors. This trend has been enabled by improvements in telecommunications, electricity, customs and regulations. Combined and continued efforts by both the public and private sectors have been crucial. The recognition of digital technologies as a pillar of development in the Government's Vision 2030, the installation of undersea fibre-optic cables, the introduction of the National Broadband Strategy and the National Cybersecurity Strategy, the implementation of improvements to the ease of doing business, and the provision of government support to tech hubs and networks have been key. Private sector innovations such as the introduction of the M-Pesa mobile payment system have been the basis for add-on

1 *Trade and Development Report 2017: Beyond Austerity–Towards a Global New Deal* (United Nations publication, Sales No. E.17.II.D.5), p. X.

private sector innovations in finance, agriculture and other spheres.[2] In fact, the M-Pesa model has been exported across Africa and to developing countries on other continents, transforming how business is done and extending access to banking to the largely unbanked African informal sector.

However, while overall digitalization has increased in Kenya, there is still a 40–50 per cent difference between those firms with access to computers and the Internet and those firms that engage productively with it (for instance, by having a web presence or buying or selling online).[3] This underlines that it takes more than affordable access to connectivity to take full advantage of the digital economy.

Many have opined that the growth of the digital economy is higher in developing than in developed countries, but what we see in Africa is a persistent increase in the global digital divide both between the continent and the world and within Africa itself. Sub-Saharan African countries are significantly lagging behind in access to the Internet; moreover, according to the United Nations Conference on Trade and Development (UNCTAD) Business-to-Consumer (B2C) E-commerce Index 2018, the region lags behind the rest of the world in terms of e-commerce readiness. Mauritius – with a ranking of 55 – is the highest-ranked African country, while nine of the 10 lowest-ranked countries are in Africa. However, the continent is showing progress in key indicators related to B2C e-commerce. Since 2014, sub-Saharan Africa has surpassed global growth on three of the indicators used in the Index.[4]

What is holding Africa back?

E-commerce and digitalization are sustained by an enabling environment that encompasses innovation and research, digital skills, policies and regulations that encourage development of information and communications technology, in addition to digital accelerators such as public-private partnerships and behavioural and cultural aspects. E-commerce and digitalization also rely heavily on investment in the telecommunications sector, computer services, Internet publishing services and the manufacturing of digital goods, among other areas.

What can be done? An interventionist approach to capitalizing on the potential of trade in Africa

The key African players in the digital economy converged in Nairobi in December 2018 for the first UNCTAD eCommerce Week in Africa to discuss how to harness the full potential of trade through e-commerce. The outcome document from that meeting, the Nairobi Manifesto on the Digital Economy and Inclusive Development in Africa, reflects the consensus that policies that tie together investments in fibre-optic infrastructure and

2 Karishma Banga and Dirk Willem te Velde, *How to Grow Manufacturing and Create Jobs in a Digital Economy: 10 Policy Priorities for Kenya* (November 2018), p. 5.

3 Ibid.

4 UNCTAD, "UNCTAD B2C e-commerce index 2018: focus on Africa", UNCTAD Technical Notes on ICT for Development, No. 12 (TN/UNCTAD/ICT4D/12), p. 12.

the skills and capacity to harness digital data and to produce goods and services that can be traded using digital platforms are crucial.

At the 2019 Global eCommerce Week, held in Geneva from 1 to 5 April, similar points were reiterated, including the need for inclusiveness in digitalization for development and the importance of supporting African countries in terms of building capacity to develop relevant laws, institutions and infrastructure while not forgetting the unique challenges faced by women and young people.

Fixing the regulatory environment is central in this context. While the nuances of technical regulations in the digital economy are new, much of the debate on the enabling environment for trade remains as relevant now as it has ever been. Key areas requiring attention to avoid the pitfalls of digitalization include data protection and privacy, data ownership, consumer protection and cybercrime prevention. The entire domestic framework needs to be geared towards enabling and not stifling trade, while at the same time protecting the users of digital technologies.

The regulatory environment is also influenced by policy developments beyond the shores of Africa and it is essential that the views and interests of African countries are reflected in this context. For example, UNCTAD has established the Intergovernmental Group of Experts on E-commerce and the Digital Economy, which continues to work on strengthening the development dimension of e-commerce and the digital economy to identify ways and means of enhancing development gains.

Core interventions in Africa need to look at the base, that is, the structural composition, of production structures for the goods and services that can be traded over digital platforms. Governments also need to consider the development of policies aimed at capturing value from the digital data – the fuel of the digital economy – that are being produced in African countries. This must include a fresh look at the skills needed in the digital economy and at ways to support local digital entrepreneurship and innovation. Digital innovations in Africa are currently highly concentrated in only three cities: Cape Town, Lagos and Nairobi. This must change in order to democratize the development dividend of digitalization.

The UNCTAD rapid e-trade readiness assessments of least developed countries are an analytical tool that can support African countries in gauging where they stand in reaping the potential presented by the digital economy. So far, UNCTAD has supported Burkina Faso, Liberia, Madagascar, Senegal, Togo, Uganda and Zambia in undertaking their assessments and is working on the assessments for Lesotho and Malawi, with a few more – including for Benin, Mali, the Niger and the United Republic of Tanzania – in the pipeline.

We should also keep in mind the need for Africa to manage its electronic interface with the globe on its own terms, in particular in the light of the African Continental Free Trade Area, which promises to multiply opportunities for African businesses to engage in intra-African trade and to be a springboard for more beneficial integration into global trade.

Let us not forget that, once a buyer clicks to order an African product, all of the supply-side capacity comes into question. No chain is stronger than its weakest link. Overcoming remaining hurdles, from industry or farm to delivery to consumer, is key. Ultimately, Africa must look at the opportunities presented by e-commerce from a holistic perspective as another chance to fast-track trade capacity development work. Otherwise, we risk watching as others reap.

Digital Trade and Human Rights

Carlos Lopes

E-commerce has emerged as one of the most transformative ways to buy and sell goods and services, saving time and energy and expanding trade across countries. We are now experiencing a deepening of the digital economy. Recent technological advances, including automation, artificial intelligence, autonomous systems and robotics, have improved productivity, leisure and comfort while raising fears and anxieties.

These developments have fundamentally shaped the way goods and services are produced, stored, distributed and consumed, affecting today's lifestyles and productive systems. The world is facing unprecedented challenges and opportunities; in the sphere of digital trade, like any other affected by digitalization, innovations can enhance or erode common values and valued standards, such as those pertaining to human rights.

The impact of the digital economy is attracting the attention of policymakers as much as the public. The same is true for the narrower field of digital trade. Analysis of the impact of the digital economy at the country, regional and global levels has exposed the potential for the digital economy to touch on human rights in countless ways. For example, cybercrime, including hacking and the sale of data and information without explicit consent, threatens the right to privacy. The loss of some types of jobs as a result of automation, although not breaching the right to work, undermines social gains, particularly established social protection institutions. Added to these pitfalls are the more specific latecomer challenges that African countries must face if they want to accelerate structural transformation and industrialization.[1] It is a fact that the high concentration of value in intellectual property does not make the journey towards industrialization any easier for Africa. Unless the continent leapfrogs it will not happen. The few countries succeeding in leapfrogging only confirm how difficult the journey is likely to be.

During its 2013 jubilee celebrations, the African Union identified the necessity of endowing the continent with adequate information and communications technology (ICT) infrastructure as a catalyst for the type of transformation required by the continent. This is reflected in Agenda 2063: The Africa We Want of the African Union. The Smart Africa Initiative[2] sends the same message. Its intentions are to integrate the continent into a single digital market in order to harness the power of ICT. More specifically, the Initiative revolves around the harmonization of policy, legal and regulatory frameworks, investment codes, the creation of more demand and the establishment of favourable market conditions. All of these efforts should be able to attract $300 billion in ICT infrastructure and related products and services. If the Smart Africa Initiative gains momentum, the discussion about infrastructure priorities will have to become more strategic. It will become possible to think about the hard infrastructure links to

1 See James Manyika and others, *Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation* (New York, Mckinsey Global Institute, 2017), pp. 1–5; and James Manyika and others, *Global Institute, Digital Globalization: The New Era of Global Flows* (New York, Mckinsey Global Institute, 2016), pp. 1–21.

2 The Smart Africa Initiative is aimed at accelerating socioeconomic development through ICTs. Championed by Paul Kagame, the President of Rwanda, the initiative emanated from the Transform Africa Summit held in Kigali from 28 to 31 October 2013. It started with a commitment by seven African Heads of State and has since been extended to the whole African Union.

digital opportunities and prospects. It goes without saying that the future of digital trade is dependent on the latter.

Digital trade is important because it is the new face of a fast-changing trade landscape. Many aspects of our daily life are affected by it, from basic and essential needs such as food, energy, health care and education to entertainment, social interaction and, obviously, work.

From an economic point of view, digital trade offers tremendous potential for growth. Tens of millions of small and medium-sized enterprises worldwide have turned themselves into exporters by joining e-commerce marketplaces that are revolutionizing logistics and supply chains. Amazon has surpassed the $1 trillion stock valuation mark, which is equivalent to the value of the entire Johannesburg Stock Exchange. Who would have thought this possible for a logistics company? About 15 years ago, when Africa started to change its growth story, nobody could have predicted such a development.

China is a good example of a country investing in the digital economy to gain global leadership. It is home to one third of the world's unicorns (privately held start-ups valued at over $1 billion) and three of its IT companies – Baidu, Alibaba and Tencent (collectively referred to as "BAT") – are now global players with multifaceted and multi-industry digital ecosystems that touch every aspect of consumers' lives.[3]

The ascension of China to a top leadership position in the digital economy stems from three major factors: its large, young population, enabling rapid commercialization of digital business models; a rich digital ecosystem, which goes beyond just a few technology giants; and government support for experimental digital platforms.

It is worth noting that, a decade ago, China accounted for less than 1 per cent of the value of e-commerce transactions worldwide. That share is now more than 40 per cent and the value of those e-commerce transactions is estimated to be larger than the value of those of France, Germany, Japan, the United Kingdom of Great Britain and Northern Ireland, and the United States of America combined. In 2013, about 25 per cent of Internet users in China used mobile payment; that percentage increased to nearly 70 per cent in 2017. The value of mobile payments related to consumption by individuals in China in 2016 was $790 billion, 11 times that of the United States.[4]

In Latin America, one of the regions with the highest Internet penetration rates in the world, digital trade is boosting intraregional trade. One example is Mercado Libre, an Argentinian e-commerce platform that was initially launched to connect buyers and sellers online; a wide range of products and services is now available on it. It has expanded into digital trade by hosting an assortment of traded products such as financial technology services, logistical solutions, advertisement through software-as-a-service, stores and "enterprise resource planning" solutions. It is now the largest technological platform for digital trade in the region and is one of the 50 most-visited websites worldwide. In June 2017, it entered the Nasdaq-100 Index, which comprises the main technology companies in the world that are listed on the New York Stock Exchange.

The United States remains an important technology leader in e-commerce. Between 2006 and 2016, its digital economy grew at an

3 Jonathan Woetzel and others, "China's digital economy: a leading global force", discussion paper (New York, Mckinsey Global Institute, 2017), p. 1.

4 Ibid.

average annual rate of 5.6 per cent; this represents a much faster growth than the overall economy, which recorded an average growth rate of 1.5 per cent over the same period. In 2016, the digital economy supported 5.9 million jobs in the United States – or 3.9 per cent of total employment in the country – and accounted for 6.5 per cent of current-dollar gross domestic product (GDP). The average annual salary in the digital economy was $114,275 in 2016, which was higher than the nationwide average of $66,498.40.[5]

What about Africa?

The digital revolution has invaded all sectors of African countries, particularly services. By 2025, Internet penetration in Africa is expected to reach 50 per cent with about 600 million users. Of these 360 million will have smartphones. Annual e-commerce sales are expected to be worth up to $75 billion.[6] Kenya has emerged as a world leader in mobile banking penetration and innovation, with M-Pesa now a well-known brand.

Some African countries have made remarkable progress in the provision of e-governance solutions such as electronic visas, which have been a major catalyst for tourism. The contribution of tourism to GDP in Africa rose from $150 billion in 2008 to nearly $175 billion in 2017. By 2028, it is projected to reach $278.2 billion, or equivalent to 8.1 per cent of combined African GDP.[7]

Examples of e-commerce include the Jumia Group. This digital trade platform offers retail sales in seven African countries (Cameroon, Côte d'Ivoire, Egypt, Ghana, Kenya, Morocco and Nigeria), online travel services such as accommodation bookings in 21 countries, and logistical services in 12 countries. Jumia has over 1 million active customers and its gross merchandise value increased from about €35 million in 2013 to about €289 million in 2015.[8]

In South Africa, UAfrica hosts over 3,500 online shops and facilitates cross-border payments through First National Bank, one of the largest banks in the country.[9] Other digital retailers include Takealot, which in less than 10 years emerged as the leading online retailer in South Africa.

In Morocco, e-commerce customers numbering 4.2 million, or approximately 12 per cent of the total population, contributed to an 82.1 per cent increase in transactions from 2016 to 2017. Online sales made by credit cards and electronic payment methods stood at $280 million, with 6.6 million transactions. Sales volume rose 50.3 per cent during the same period. Operations are dominated by Hmizate and Jumia.[10]

In Nigeria, e-commerce is currently valued at $13 billion and it is projected to reach $50 billion over the next 10 years. Its contribution to GDP was forecasted to be 10 per cent in 2018.[11] E-retailers include Konga (the country's largest online retailer), Jumia and Jiji.

While these examples demonstrate the huge potential of and opportunities related to the

5 Kevin Barefoot and others, "Defining and measuring the digital economy", working paper (Washington D.C., Bureau of Economic Analysis, 2018), pp. 3–4.

6 James Manyika and others, *Lions Go Digital: The Internet's Transformative Potential in Africa* (New York, McKinsey Global Institute, November 2013), pp. 6–7.

7 World Travel and Tourism Council, *Travel and Tourism: Economic Impact 2018 World*, p. 1.

8 *Information Economy Report 2017: Digitalization, Trade and Development* (United Nations publication, Sales No. E.17.II.D.8), p. 44.

9 Percy Mkhosi, "National report on e-commerce development in South Africa", working Paper No. 18/2017 (Vienna, United Nations Industrial Development Organization, Department of Policy, Research and Statistics, 2017), p. 10.

10 Nordea, Country profile Morocco, "E-commerce in Morocco". Available at www.nordeatrade.com.

11 Eromosele Abiodun, "Nigeria's e-commerce market value to hit N15.45tn in 10 years", *This Day*, 28 August 2017.

digital market in Africa, are the promises of digital trade too good to be true?

Although digital trade makes it possible for companies to enter international markets with less capital-intensive business models, it poses new risks and policy challenges. For some, digital trade is reminiscent of a faster-pace globalization and raises fears and anxieties. Digital trade embodies the network effects with potential market concentration that can undercut competition. First-comer advantages, the dangers of skewed competition provoked by tax optimization and the exploitation of unregulated new trade patterns are undermining the possibilities for new entrants to make a dent.

Reference is often made to large e-commerce platforms such as Amazon, which accounts for half of all online expenditure in the United States. Amazon collects vast amounts of increasingly valuable data on its customers. There is growing anxiety about what technology data giants could do with such a massive stock of information. There is a degree of weaponization against weaker rivals, driving them out of business. As they amass substantial market power, public scrutiny and accountability are reduced; any intrusion into the databases of these companies can expose the private information of a large number of consumers.

Small and medium-sized enterprises certainly find an easier bridge to global markets through digital trade, but unskilled workers believe that digital trade poses a huge threat to them; it is undeniable that there is a skills-biased technological change that favours skilled over unskilled labour. The speed and complexities of digital trade have also raised concerns about the transparency of international corporations that dominate niche information technology markets.

Typically, the intellectual property and operating expertise behind cross-border e-commerce activities are located in a jurisdiction away from the one in which transactions take place. Although costs may be deducted from locally-generated sales, profit will be shifted to the foreign jurisdiction to reduce taxable income in the country where the transaction takes place. This sophisticated form of trade adds to the complexity of existing illicit financial flows, further contributing to the depletion of resources in Africa.

To address these issues, it is important to consider the foundations of digital trade.

First, with sound policies, political determination and transformational leadership, Africa can reap a demographical dividend by investing in education to equip its young people with the skills required to thrive in a digital economy. Before we reach 2050, the continent will be home to the largest working-age population in the world. Education systems will have to expand considerably; investments in basic and traditional literacy and numeracy will not be enough. They will need to encompass proficiency in digital literacy, e-leadership, business development and adaptive, cognitive, social and technical skills.

Second, there is a need to prioritize enabling factors, such as an adequate telecommunications infrastructure. The lack of or insufficient broadband is the main obstacle to expanding digital trade. The Smart Africa Initiative highlights the necessity of ensuring expanded broadband connectivity that will increase the efficiency and effectiveness of public spaces (for example, schools, hospitals, airports and ports) while preparing countries for the next wave of innovations, namely, the Internet of Things. This calls for large-scale investment in submarine cables, fibre-optic and mobile networks, satellite coverage, data centres, cybersecurity and smart city capabilities.

Third, a supportive ecosystem is fundamental to an attractive business environment.

To capture the full growth potential of digital trade there is a need for regulators and public infrastructure to cater for established businesses as much as for start-ups. Both require a solid legal framework for protecting intellectual property and property rights, and an arsenal of regulatory measures aimed at providing incentives to investors to take measured risks. Such measures could include removing tariffs, lowering non-tariff restrictions and promoting the free movement of persons as anticipated in instruments such as the Protocol to the Treaty Establishing the African Economic Community Relating to Free Movement of Persons, Right of Residence and Right of Establishment. More importantly, the African Continental Free Trade Area could boost these efforts considerably while increasing the overall attractiveness of Africa for investment. Implementing the Action Plan for Boosting Intra-African Trade of the African Union, effectively establishing an African business council and implementing the Protocol on Rules and Procedures for Settlement will all help create a more conducive environment.

What are the major implications of these developments for human rights?

Digital trade offers numerous opportunities for economies to grow and for people to improve their quality of life. Like any endeavour, digital trade entails risks. Breaches of human rights are very likely to be among those risks.

One of the areas at greatest risk is that of privacy. Privacy and data commoditization have become a major concern for the way societies work and individuals protect their freedom. Consumers of both tangible and digital goods and services leave footprints on any transactions or on any usage; such footprints are collected by technology companies in unexpected and sometimes duplicitous ways.

The bulk of the data collected from consumers may be used to target them with paid advertising based on their interests, which are both revealed by and inferred from data analysis. Some data collection approaches are active, meaning that the user directly and consciously communicates information by signing up to a wide range of applications. Others are passive and less obvious, whereby an application is designed to gather data possibly without the user's knowledge.

Data have become a valuable commodity, alluded to by some as the new oil. From a human rights perspective, an increasing appetite for data is putting users under permanent surveillance, with heightened risk of privacy breaches. Cyberwarfare and cybercrime, including hacking, further increase their exposure. Such developments should not be minimized, considered as natural or tolerated as normal collateral damage of progress.

Privacy enhances autonomy in thought and action. It is a prerogative that protects human subjectivity from the pervasive efforts of commercial and government actors to render individual and communities fixed, transparent and predictable[12]. A violation of privacy through intrusive data collection is certainly a human rights threat; violations of privacy may reduce both freedom of speech and freedom of expression. Such a threat is considerable, in particular when Governments have or can access the data as well. There are several examples of political developments that demonstrate the ease with which personal data can be used for political influence and movements founded on undemocratic and hate speech. Limiting freedom of speech and expression has the potential to compromise democracy and limit civil engagement.

While digital trade comes with some human rights risks, it should be recognized that it can

12 Julie E. Cohen, "What privacy is for", *Harvard Law Review*, vol. 126, No. 7 (May 2013), p. 1,905.

also, under certain circumstances, contribute to the enhancement of those rights. Pressure from various sources has obliged major technology companies to start tracking offenders, disrupt and combat human trafficking and demonstrate a commitment to civic values.

In the educational sphere, the range of opportunities – such as long-distance and online courses in the forms of massive open online courses or through blended curricula using expertise across borders – is expanding fast.

Global activism on human rights has thrived considerably with the use of social media applications. These may be used to spread news quickly, thereby boosting instantaneous solidarity or advocacy for the defence of human rights. Human rights violations such as arbitrary arrest, detention or forced exile can now be reported instantly around the world.

Digital trade and related enablers have contributed to ease the movement of goods and services, allowing many to consume, feel empowered and even enjoy rights. The above developments make the case for harnessing digital platforms as a force for good.

An African proverb says that "if you live next to the cemetery, you cannot cry for everyone". Most forms of trade as we know them will, most likely, either disappear or be dramatically influenced by digital trade. With awareness and preparation, it is possible to transform it into a progressive opportunity.

Setting the context

Updating the policymaker's toolkit: a new digital trade and development landscape

Lily Sommer and Jamie Macleod

Defining digital trade

What is the digital transformation that everyone is talking about? How does the digital economy interact with global production and trading networks? What opportunities and challenges does the new digital trade and development landscape present for policymakers in developing countries in Africa? These are some of the questions that we will attempt to answer below.

In the present publication, the term "digitalization" refers to the transformation of economic activities through the application of the digital technologies of the "fourth industrial revolution". The term "digital trade" sets this phenomenon within a global context, incorporating the cross-border commercial implications of a digitalizing world.

"Digital trade" is therefore a broad concept. It encompasses the effects that emerging digital technologies have on the global economy. This includes technologies such as three-dimensional (3D) printing, or additive manufacturing, in which material is joined or solidified under computer control to create 3D objects; big data, wherein the computational analysis of extremely large datasets reveals valuable patterns, trends and associations; and the concept of "e-commerce" which is defined by the World Trade Organization (WTO) as the production, distribution, marketing, sale or delivery of goods and services by electronic means.[1] It also includes labour-saving technological developments such as robotization, artificial intelligence and automation.

The way in which new digital technologies embody cross-border commercial interactions is the premise for the implications of digital trade. For instance, the technology of 3D printing allows traditionally labour-intensive processes such as footwear manufacturing to be reshored to skill-intensive countries.[2] E-commerce enables small and medium-sized enterprises to market and distribute to and receive payment and make purchases from a variety of international buyers.[3] The accumulation of big data in large markets such as China and the United States of America allows businesses based in those markets to advance their competitiveness and outcompete rivals in other markets.[4]

1 WTO, Work programme on electronic commerce (WT/L/274), para. 1.3.

2 Luciano Fratocchi, "Is 3D printing an enabling technology for manufacturing reshoring?", in *Reshoring of Manufacturing: Drivers, Opportunities, and Challenges*, Alessandra Vecchi, ed. (Basel, Springer International Publishing, 2017); and Sebastian Mohr and Omera Khan, "3D printing and its disruptive impacts on supply chains of the future", *Technology Innovation Management Review*, vol. 5, No. 1 (November 2015).

3 Karl W. Sandberg and Fredrik Håkansson, "Barriers to adapt eCommerce by rural microenterprises in Sweden: a case study", *International Journal of Knowledge and Research in Management and E-Commerce*, vol. 4, No. 1 (January 2014), pp. 1–7; World Bank, *World Development Report 2016: Digital Dividends* (Washington, D.C., 2016); and *Information Economy Report 2015: Unlocking the Potential of E-Commerce for Developing Countries* (United Nations publications, Sales No. E.15.II.D.1).

4 Shamel Azneh, "Closing the global economy's new digital divide", Project Syndicate, 26 February 2018.

Status and trends: the rise of digital trade

Compared with developed countries, the growth of the digital economy in Africa has been limited. For example, the percentage of the population using the Internet in Africa in 2016 was only 22 per cent, compared with a world average of 45.8 per cent.[5] Fewer than 0.3 of every 100 inhabitants in Africa have fixed broadband subscriptions.[6] According to the 2017 ICT Development Index published by the International Telecommunication Union (ITU), only 6 African countries were among the top 100 world countries in terms of information and communications technology (ICT) development. Mauritius, the top-performing African country, ranked only seventy-second worldwide.[7]

African countries also lag behind in the use of the Internet for digital technologies such as cloud-computing applications, e-commerce, and the deployment of smart machines such as robots and 3D printers. Imports of ICT goods accounted for only 5 per cent of merchandise imports in Africa in 2015, compared with a global average of 13 per cent.[8] The share of Africa in robots sold in 2015 (about 0.2 per cent of world sales) was 15 times lower than its share in world gross domestic product (around 3 per cent).[9] In the area of e-commerce, according to the United Nations Conference on Trade and Development (UNCTAD) Business-to-Consumer (B2C) E-commerce Index 2018, the regional average index value for Africa was 30, compared with the world average of 55.[10] E-commerce in Africa is also currently dominated by only a small handful of countries, including Egypt, Ethiopia, Ghana and South Africa.[11]

A gender divide exists as part of the digital divide in Africa. In 2017, the Internet penetration rate was 18.6 per cent among women, compared with 24.9 per cent among men. Women are also less likely than men to own or use a mobile telephone, which is the most common means of accessing the Internet in developing countries. Despite the significant increase in mobile telephone usage across the continent, sub-Saharan Africa has the second-largest average gender gap (after South Asia) in both mobile telephone ownership and mobile Internet use. Young people are more actively engaged in the digital economy; those aged 15–24 represent 40.3 per cent of all Internet users in Africa compared with21.8 per cent of the overall population.[12]

However, recent trends on the continent give much to be optimistic about. Sub-Saharan Africa had by far the fastest rate of new broadband connections in the world between 2008 and 2015, with an average annual growth rate of 34 per cent. Broadband penetration in the region is projected to quadruple, from 20 per cent in 2015 to 80 per cent by 2020. At the same time, penetration of smartphones in Africa is expected to jump to at least 50 per cent in 2020, up from only 18 per cent in 2015.[13]

These new sources of online connectivity create additional opportunities for trade and

5 Authors' calculations using World Bank data.

6 The International Telecommunication Union (ITU), *Measuring the Information Society Report 2017*, vol. 1 (Geneva, 2017), p. 13.

7 Ibid., p. 31.

8 *Information Economy Report 2017: Digitalization, Trade and Development* (United Nations publication, Sales No. E.17.II.D.8).

9 Karishma Banga and Dirk W. te Velde, *Digitalisation and the future of Manufacturing in Africa* (London, Overseas Development Institute, 2018), p. iv.

10 UNCTAD, "UNCTAD B2C e-commerce index 2018: focus on Africa", UNCTAD Technical Notes on ICT for Development, No. 12 (TN/UNCTAD/ICT4D/12), p. 11.

11 "Talking e-commerce with Alioune Sarr, Senegal's Trade Minister", Bridges Africa, vol. 7, No. 2 (14 March 2018).

12 *Measuring the Information Society Report 2017*, pp. 19–20.

13 Estimated by McKinsey Global Institute based on forecasts from the Global System for Mobile Communications (GSMA) *Sub-Saharan Africa Mobile Economy 2013* report; GSMA, *The Mobile Economy: Sub-Saharan Africa 2015* (London, 2015); and the United Nations Population Division.

e-commerce, and a new shopping experience for the growing middle class in Africa. A recent report, entitled "Afrishopping", showed that 264 companies were engaging in e-commerce activities in 23 African markets, in various subsectors of online sales, including capital goods, clothing, taxi services and travel.[14] By 2025, e-commerce could account for 10 per cent of retail sales in the continent's largest economies, which would translate into roughly $75 billion in annual revenue.[15] In fact, Nigeria has experienced a doubling of revenue each year since 2010, while the revenue of the more established e-commerce industry in South Africa grew by 28 per cent year on year over the same period.

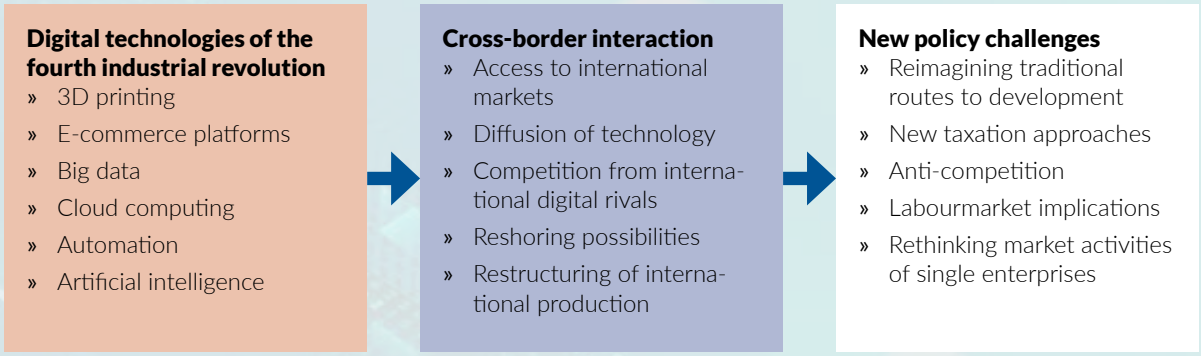
The digital trade, industrialization and development nexus

The way that new digital technologies interact with the global economy poses new opportunities and challenges for inclusive development.

On the one hand, digitalization offers new opportunities for trade and industrial leapfrogging. The digital economy can lower barriers to entry to and help connect micro-, small and medium-sized enterprises with global markets and value chains through providing the services necessary to facilitate their exports, including simplified payments and logistics. Digital applications are already being leveraged to promote innovation and entrepreneurship, including the empowerment of women as traders, and mobile and digital solutions are contributing to filling credit gaps. Technologies such as communication networks and e-commerce platforms are facilitating new opportunities for businesses and workers in developing countries. Professional service platforms, for instance, connect professionals in developing countries to freelance opportunities around the world (see figure I). The digital economy offers particular potential for productive job creation for young people, who are typically quicker at adapting to new technologies and developing new digital solutions than those who have been in the workforce longer.

On the other hand, industrialization gains are not automatic and the digital economy also presents immense challenges for the continent in the context of the digital divide. Owing to the concentration of digital technologies in developed countries and the skills-biased

Figure I
Digital trade and its policy implications



14 Disrupt Africa, "Afri-shopping 2017". Available at http://disrupt-africa.com/afri-shopping-2017/.

15 James Manyika and others, Lions Go Digital: *The Internet's Transformative Potential in Africa* (New York, McKinsey Global Institute, November 2013).

nature of digitalization, the main beneficiaries of the digital economy are currently the most developed countries. This risks reducing the ability for Africa to resolve its unemployment problem and to take the traditional low-wage, low-skilled, labour-intensive route to industrialization. At the same time, there are concerns that digital trade embodies network effects that can lead to market concentration and anti-competition. Lastly, digital trade may facilitate the distortion by international companies of their taxable income through transfer pricing, therefore reducing the already scarce domestic resources available to fund the industrialization processes of countries in Africa.

A concern often raised is that the traditional route to development through industrialization seems to have become difficult for all countries of the world, owing in part to technological changes. The traditional approach of export-oriented, labour-intensive manufacturing pursued first by the United Kingdom of Great Britain and Northern Ireland in the eighteenth and nineteenth centuries through to the Asian growth miracles and China in the twentieth and twenty-first centuries has become more difficult as newer forms of technology require considerably less labour and more education and institutional building than are immediately available to most of the least developed countries.[16]

The fourth industrial revolution has emerged as a concept to describe the digital transformation of industrial production and distribution. The reality includes the digitalization of all elements of industrial activities to achieve a highly flexible, distributed production and services network. Through advanced digital technologies such as artificial intelligence, 3D

Figure II
Industrial revolutions and shifts in manufacturing specialization

Industry 1.0 (eighteenth century)
Mechanization, steam power and weaving loom ⟶ shift from cottage industry to mechanical production

Industry 2.0 (nineteenth century)
Electrical energy ⟶ assembly line and mass production

Industry 3.0 (twentieth century)
Electronics and information and communications technologies ⟶ automated and networked production

Industry 4.0 (twenty-first century to today)
Artificial intelligence, advandes automation and robotics, 3D printing, big data and Internet of Things ⟶ intelligent, flexible and distributed production

16 Dani Rodrik, "An African growth miracle?: the ninth annual Richard H. Sabot lecture" (Washington, D.C., Center for Global Development, April 2014), p. 12; and Dani Rodrik, "Premature deindustrialization", National Bureau of Economic Research (NBER) Working Paper No. 20935 (Cambridge, Massachusetts, February 2015).

printing, advanced automation and robotics, big data and the Internet of Things, a tighter integration of digital and physical elements is anticipated to facilitate machine-to-machine interactions and a mode of operation that provides more efficient production. The figure below (figure II) shows the main shifts in manufacturing opportunities and patterns of specialization enabled by the key developments characterizing the four industrial revolutions.

Shifts in manufacturing processes towards more intelligent, flexible and distributed manufacturing production are increasingly visible. The digital economy is transforming value chains, skill development, production and trade globally. Although the fourth industrial revolution may not yet be in immediate sight for Africa, these changes will have major implications for African industrialization efforts.

In the light of the significant impact that digitalization is expected to have on production processes, industrial organization and value chains, it will be crucial for Africa to assess both the opportunities and the challenges that the digital economy presents, so that it is well-positioned for the future. African countries will need to explore and develop alternative industrialization routes.[17]

Adapting policy to the new digital trade landscape

The response must take the form of an updating of policymakers' toolkits to face the new opportunities and challenges of digital trade and ensure inclusive outcomes that uphold human rights. For instance, new approaches to manufacturing-led development can include investing in digital prerequisites, such as digital skills and the Internet and other ICTs, while encouraging development in sectors that are less susceptible to automation and in which technology installation has been slow. Cost savings from productivity gains must be reinvested into new job-creating activities, building the absorptive capacity of the workforce and promoting better domestic linkages between firms and sectors.[18]

New approaches to taxation are required to address the increased importance of intangible products, such intellectual property and data, as foundations of profit, in addition to the greater scope for profit-shifting in digital business models.[19] In her think piece below, Bineswaree Bolaky calls for an international governance framework to facilitate the taxation of international e-commerce transactions involving goods or services destined for Africa.

Competition regulators must develop new tools to deal with increasing market concentration and e-commerce platforms effectively operating as "utilities".[20] In his think piece below, Jean Bertrand Azapmo emphasizes the importance of requiring foreign companies to transfer technology as they access the lucrative African market as a tool for redressing unfavourable market dynamics.

As unionization becomes less effective in fragmented and transitional work environments, government policy must increasingly reinforce living wages and working standards.[21]

It is not just national policymakers who need to update their toolkits in the face of

17 D. Luke and L. Sommer, "The AfCFTA: opportunities for industrialisation in the digital age", AFREXIMBANK Contemporary Issues in African Trade and Finance, vol. 4, No. 1 (December 2018).

18 See Banga and te Velde, *Digitalisation and the future of Manufacturing in Africa*.

19 Organization for Economic Cooperation and Development (OECD), *Addressing the Tax Challenges of the Digital Economy, Action 1: 2015 Final Report*, OECD/G20 Base Erosion and Profit Shifting project (Paris, OECD Publishing, 2015).

20 Lina M. Khan, "Amazon's antitrust paradox", *Yale Law Journal*, vol. 126, No. 3 (January 2017).

21 Kurt Vandaele, *Will Trade Unions Survive in the Platform Economy? Emerging Patterns of Platform Workers' Collective Voice and Representation in Europe*, Working Paper No. 2018.05 (Brussels, European Trade Union Institute, 2018).

expansive digitalization; action is also required at the regional and international levels. In their think piece below, Anita Gurumurthy and Nandini Chami identify the need for an African digital single market strategy as part of the African Continental Free Trade Area, akin to what currently exists in the European Union. Bineswaree Bolaky argues in her think piece that cooperation and development assistance arrangements between Africa and its development partners should integrate capacity-building assistance for Africans in the areas of digital technology, digital manufacturing and science, technology, engineering and mathematics. We are already beginning to see positive steps in this direction. For example, in early 2019, Belgium committed to investing €2 million in Africa to support inclusive and sustainable trade, with a focus on supporting African countries to become e-commerce-ready.

In the following two subsections, we will take a closer look at the emerging digital trade landscape that African countries are operating in at the continental and global levels, and reflect on what this means for African policymakers.

Africa and the World Trade Organization e-commerce agenda

The growth of the digital economy has not been underpinned by clear global regulatory frameworks. For instance, while multilateral rules exist for governing trade in goods such as books, it is not obvious what happens when these books become digital and are transmitted across borders to electronic devices through Internet-based platforms.

This is set to change. The need to establish rules for digital trade is gaining momentum in international forums. The first step was the adoption of the WTO work programme on e-commerce at the WTO Second Ministerial Conference, in 1998, which provided a basis for discussions to better understand issues related to e-commerce. Ministers agreed to continue their practice of not imposing customs duties on electronic transmissions until their next session. This is now widely known as the moratorium on e-commerce and has been extended at each subsequent ministerial conference to date.

Almost two decades later, at the Eleventh WTO Ministerial Conference, held in December 2017, a number of countries set out to negotiate new rules on e-commerce. As expected, WTO members were divided and the required consensus to launch negotiations was not reached. Instead, members agreed to continue the work programme and once again extend the moratorium on electronic transmissions, until 2019. However, 71 members of WTO, including Nigeria, agreed to initiate exploratory work together toward future WTO negotiations on trade-related aspects of e-commerce. This set the stage for the monumental push at the World Economic Forum in January 2019, when 76 countries – between them responsible for 90 per cent of global trade – announced plans to begin negotiations on the trade-related aspects of e-commerce. The intention is to launch plurilateral negotiations within WTO, building upon existing WTO commitments. This would allow countries to move ahead on issues on which they agree and to conclude plurilateral agreements, which other countries could subsequently join when ready. However, it risks establishing as multilateral norms rules that are inappropriate for the countries that are not party to the negotiations, and thereby increasing the digital divide. In fact, the opponents of the launch of plurilateral negotiations represent the majority of WTO members, but only a small proportion of world trade.

The negotiations are expected to cover issues related to consumer protection and spam, barriers to cross-border sales, the validity of e-contracts and e-signatures, customs duties

on electronic transmissions, data localization requirements and source code protection. This wide scope, coupled with the fact that most of the parties to the negotiations are developed countries, means that the plans for plurilateral e-commerce negotiations will have significant implications for African countries, of which the majority are least developed countries.

Ahead of the Eleventh WTO Ministerial Conference, the WTO Africa Group circulated a communication on e-commerce in which it raised serious concerns about the prospect of establishing multilateral rules on e-commerce. The current proposals on e-commerce reflect the interests of WTO members that are developed countries, as well as several Asian countries, who are best poised to take advantage of a more facilitative environment for international e-commerce. The Group indicated a strong preference for keeping to the existing framework of simply discussing e-commerce-related issues under the WTO work programme on e-commerce. They also proposed that WTO members preserve their right to regulate e-commerce and consider measures to promote national digital industrial development with a view to promoting inclusive, equitable and sustainable growth. At the same time, African countries and developing countries such as India, Indonesia and the Bolivarian Republic of Venezuela emphasized that meaningful outcomes on remaining Doha Development Agenda issues, including agriculture, cotton, fishery subsidies, public stockholding, and special and differential treatment, were essential for their nations to fulfil their structural transformation and development goals. Yet, at the Eleventh WTO Ministerial Conference, leading trade players such as the United States and many European Union member States resisted continuing their initial commitments under the Doha Development Agenda.

The precautionary approach taken by Africa to e-commerce makes sense. Africa is not yet in a position to implement the proposed e-commerce rules. African countries first require time to define their priorities in the context of the digital economy and to set out an approach that sufficiently manages the anti-competitive threats of big data and new e-commerce business models and also preserves policy space to grow national industries. Currently, very few countries have digital industrial policies, and a substantial digital infrastructure, skills and regulatory gap exists between Africa and the rest of the world. African nations require time to ascertain the potential benefits and risks of e-commerce and associated rules on their economies, and also to design e-commerce provisions to support digital capacities, industrialization and development. At the same time, meaningful outcomes on the Doha Development Agenda will be crucial to place African countries on a more equal footing before they can engage in potential negotiations on new issues such as e-commerce.

Nevertheless, since discussions on e-commerce are set to continue, African countries must be proactive and forward-looking, and must continue to engage in those discussions. This will help to ensure that the e-commerce agenda is more responsive to the concept of inclusive trade and that it fully takes into account the situations of WTO members at different stages of development. It is important that discussions and possible negotiations on any new issues such as e-commerce take place within a WTO that places development as central to its mandate. At the same time, completely opting out of the e-commerce debate may risk pushing the continent further behind in the global trading system. Africa must instead equip itself to better understand digital trade so that it can contribute to setting the e-commerce agenda, and it must be ready to negotiate when the time is right.

This will require coordinated actions between Governments and the private sector in Africa to embrace the digital economy. African policymakers and businesses will need to adapt to the new digital climate and innovate in this space. Proactive measures will be required to establish appropriate data governance systems, develop digital skills and infrastructure, support innovation and the competitiveness of digital small and medium-sized enterprises (SMEs), and adapt tax rules to address digital profit-shifting and tax avoidance by multinational corporations.

Currently, the African continent is not speaking as one. Only some African countries have shown a willingness to discuss new rules on e-commerce; for example, Kenya and Nigeria are part of the Friends of E-commerce for Development Group, which has the objective of invigorating the global trade policy agenda through informal meetings at WTO. The African Continental Free Trade Area offers a platform for coordination and benchmarking on digital trade – including e-commerce – and an opportunities to develop African e-commerce priorities, ascertain the potential benefits and costs of adopting potential e-commerce rules, and maintain sufficient policy space for Africa to deliver on its industrialization agenda. A continental digital strategy would also provide a framework for developing a common African position on e-commerce at the multilateral level. As a united regional grouping, the African continent would be able to speak as one and effectively and proactively communicate a common pan-African position on key issues determined at WTO. It would provide the continent with more clout and leverage to challenge agreements that are unfavourable to its transformation agenda and development.[22]

African Continental Free Trade Area: continental cooperation on the digital economy

Given the e-commerce impasse at WTO and the hesitancy of African countries to engage in e-commerce negotiations in that forum, is there a place for continental cooperation on e-commerce and the digital economy?

This question informed the African Union E-Commerce Conference held in Nairobi from 23 to 25 July 2018. At that conference, country representatives, researchers, and representatives of civil society organizations and the private sector recognized that, while e-commerce presented opportunities for African countries – including in the framework of the Agenda 2063: The Africa We Want of the African Union – a number of challenges remained. Specific recommendations included prioritizing investment in ICT infrastructure to bridge the digital divide that leaves 22 African countries with Internet penetration rates of less than 20 per cent (see figure III); improving online access to government services and information; establishing the appropriate legal and regulatory framework to address digital intellectual property rights, data protection, consumer protection, cybersecurity, trust and privacy; and investing in skills.

Notable by its absence was any recommendation to engage in negotiations on e-commerce in the context of the African Continental Free Trade Area. The consensus was that, on their own turf, as in WTO, African countries were not yet ready to meaningfully engage in e-commerce trade negotiations without first anchoring any such negotiations in a comprehensive continental e-commerce strategy that could outline a strategic vision for the inclusive development of e-commerce and the digital economy in Africa.

22 Jamie Macleod, "E-commerce and the WTO: a developmental agenda?", Global Economic Governance Africa discussion paper (December 2017).

On this basis, in January 2019, the Specialized Technical Committee of the Ministers of Trade, Industry and Mineral Resources of the African Union mandated the African Union Commission, in collaboration with African Union member States, the Economic Commission for Africa and all relevant stakeholders, to develop a comprehensive African Union digital trade and digital economy development strategy. This would enable African countries to fully benefit from the fourth industrial revolution, and facilitate the African Continental Free Trade Area implementation and ultimately the economic and structural transformation of Africa.

What might such a strategy entail? A useful starting point would be to take stock of not only the notable achievements made by a number of regional economic communities and African countries in developing their own digital strategies, laws and regulations, but also the conspicuous lack of such strategies, laws and regulations in other countries.

The Common Market for Eastern and Southern Africa (COMESA) is perhaps most advanced among the regional economic communities in this regard, having adopted a digital free trade area programme in 2018 that employs ICT to facilitate cross-border trade through:

(a) E-trade (a platform for online trade, an e-payment gateway, electronic certificates of origin and mobile apps for small-scale cross-border traders);

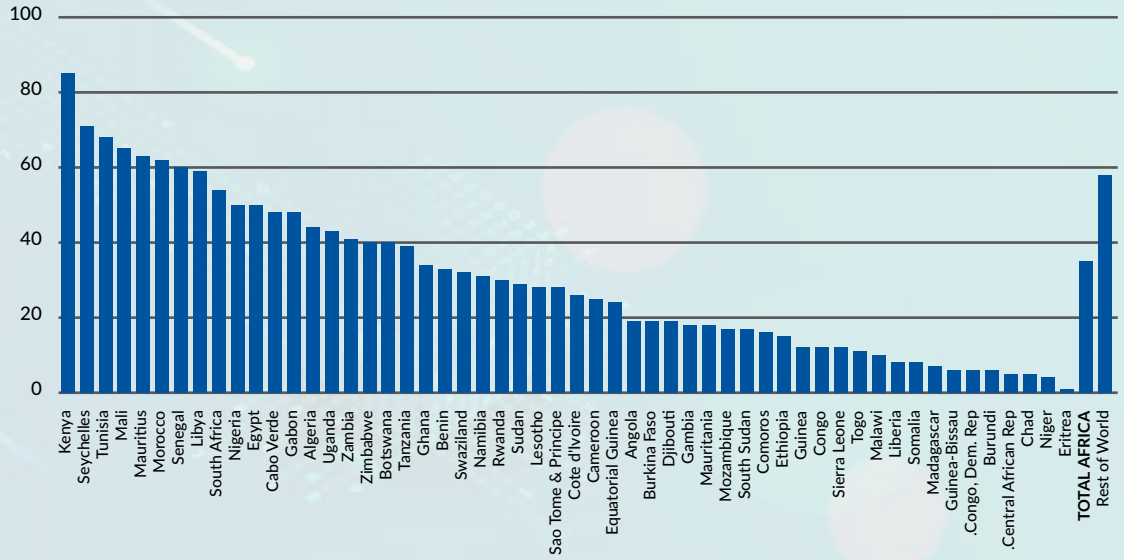
(b) E-logistics (or the use of ICT to improve logistics);

(c) E-legislation (legislation that allows countries in the region to carry out e-transactions and e-payments).

Although the COMESA programme concerns the use of digital technologies, its remit is confined to their use for trade facilitation within the COMESA free trade area. The Southern Africa Development Community (SADC), on

Figure III

Internet user statistics for Africa, percentage of population (2019)



Source: "Internet World Stats: usage and population statistics". Available from www.internetworldstats.com/stats1.htm (accessed 12 June 2019).

the other hand, developed the comprehensive SADC E-Commerce Strategy Framework in 2010. It is based on the following four pillars:

(a) An enabled e-commerce environment;

(b) A capacity development programme for e-commerce in each member State;

(c) Strengthening subregional and national e-commerce infrastructure;

(d) An institutionalized framework to implement, allow for the evolution of and govern the current strategy at the regional level.

African States (ECOWAS) and the East African Community (EAC), have not developed specific e-commerce strategies but have introduced various instruments and initiatives to coordinate work by their members in relevant areas. These include the EAC Framework for Cyberlaws (2010), the EAC Electronic Transaction Bill (2014), and various ECOWAS supplementary acts such as that on the harmonization of policies and the regulatory framework for the ICT sector (2007), personal data protection (2010), electronic transactions (2010) and fighting cybercrime (2011). At the continental level, the African Union Convention on Cyber Security and Personal Data Protection provides a framework for African countries to develop harmonized policies and regulations.

On the other hand, of the 54 countries in Africa, only 20 have online consumer protection, 32 have e-transaction legislation, 23 have legislation on data protection and 28 have cybercrime legislation.[23] South Africa is one of the few countries in Africa to have considered in depth the tax implications of the digital economy. It was concluded that South African tax law provided opportunities for foreign e-commerce suppliers to avoid taxation and in so doing deny South Africa tax revenue and create unfair competition to resident suppliers who had to pay taxes.[24]

There is scope for a continental digital economy strategy to build on the existing initiatives and instruments developed by the regional economic communities, but also, in doing so, to provide a framework for addressing the numerous gaps in the laws and regulations in many African countries for the digital economy. While such a strategy may in turn identify issues that might be appropriately addressed by an e-commerce protocol to the African Continental Free Trade Area, this is likely to form a latter step of a digital economy strategy that must first set out a direction for an inclusive digital economy in Africa.

23 UNCTAD, "Summary of adoption of e-commerce legislation worldwide". Available at https://unctad.org (accessed 7 June 2019).
24 South Africa, Davis Tax Committee, "Addressing base erosion and profit shifting in South Africa", interim report (2014).

Human rights, connectivity and digital trade in Africa

Office of the United Nations High Commissioner for Human Rights

Introduction

The spread of digital technologies is transforming the global flow of goods, services, money and people, and digital trade is one component of those global flows.[1] Digitalization in the global economy is rapidly accelerating, with innovation changing the way we design, produce and generate value from products and related services. The new era of digital globalization can present opportunities but may also have serious consequences for human rights.

In this chapter, a human rights-based approach is applied to digital trade, to aim a spotlight on connectivity and access to information and communications technologies (ICTs) as a basis for the realization of other human rights in the digital trade context.

Applying human rights to digital trade

Why explore human rights in the context of digital technologies?

Technology is traditionally treated as an artefact rather than as an active social force,[2] but given how radically digital technologies have revamped and reorganized social and economic arrangements, this view must be re-evaluated and readapted to changing realities. Digital platforms in particular, as a set of digital frameworks for social and marketplace interactions,[3] connect various actors in an ecosystem as nodes in a vast network. This expands economic opportunities, offers new ways to conduct economic activity and lends potential innovation to achieving the Sustainable Development Goals.[4] Digital platforms, including platformization, are often characterized as "disruptive", but the same technologies that are used to market, entertain, transport and educate can be misused for discrimination, profiling, surveilling, stigmatization, and targeting of individuals and groups.[5] This presents a compelling case for why we need a human rights lens to explore the digital world.

Digital technologies have boosted economic growth, expanded opportunities and improved service delivery.[6] However the aggregate impact of the Internet on development has fallen short of what is possible because the growth and engagement are unevenly distributed and because, in many countries, the Internet is inaccessible, unaffordable, not secure and censored. These inequalities are evident in access to and use of ICTs; the offline population is disproportionately poor, rural and female.[7] Rapid digital transformation relies on ensuring digital inclusion through effective participation, governance, transparency and accountability, all of which are part of human rights discourse.

1 Susan Lund and James Manyika, *How Digital Trade Is Transforming Globalisation*, E15Initiative (Geneva, International Centre for Trade and Sustainable Development and World Economic Forum, 2016).
2 Patricia Stamp, Technology, *Gender and Power in Africa* (Ottawa, International Development Research Centre, 1989).
3 Martin Kenney and John Zysman, "The rise of the platform economy", *Issues in Science and Technology*, vol. 32, No. 4 (2016).
4 United Nations, "Secretary General's strategy on new technologies" (September 2018), p. 8.
5 Mark Andrejevic, "The big data divide", *International Journal of Communication*, vol. 8 (2014).
6 World Bank, *World Development Report 2016: Digital Dividends* (Washington, D.C., 2016).
7 Alliance for Affordable Internet, "2018 affordability report" (Washington, D.C., World Wide Web Foundation, 2018).

While access to technology can extend a range of services, for example, financial services without collateral, to vulnerable populations and help forge a digital identity and footprint, the ability to sort and control individuals through the use of technology and algorithms also risks perpetuating and deepening economic and social inequalities. Overcoming the digital divide and having greater access to and facility in the use of smartphones and other devices can mean more data to store, sort and mine.[8] The collection of facial images of African people and women by facial recognition technology to "equalize" representation merely co-opts designers in perfecting vast instruments of surveillance and classification. When underlying systemic issues remain fundamentally untouched, those attempting to address bias simply render humans more machine-readable and expose minorities in particular to additional harms.[9]

Data in the global South are being computationally appropriated and siphoned to power these technologies and their services – for example, targeted advertisements and collection of data for the training and diversification of algorithms – all without necessary safeguards, transparency or compensation.[10] As stated by the United Nations High Commissioner for Human Rights, one cornerstone of a State privacy protection framework should be laws setting the standards for the processing of personal information by both States and private actors.[11] Given the reach of technology, a human rights-based approach is crucial to understanding larger issues of connectivity across the continent, access to and use of technology platforms, tools and services, privacy and data protection. Given the range of issues that surround digital technologies, the challenge is how we reinforce the international and regional human rights law framework and make it meaningful in the digital context.

Framing human rights in the digital trade context

Human rights discourse is disruptive in that it challenges unjust power and market dynamics in the realms of business, trade and development. Moving into the digital trade space offers human rights practitioners a new platform for applying past successes and creating future safeguards. The emergence of new technology systems, platforms and ideas creates an opportunity for human rights to be a guiding framework for digital technology and development, including in Africa.

In carving out the relationship between human rights and trade in Africa, we must note that African States are party to a wide range of human rights treaties, including the African Charter on Human and Peoples' Rights. Human rights impose a combination of negative and positive duties on States, including duties to respect, protect and fulfil human rights.

Digital trade can and does implicate a range of civil and political rights and economic, social and cultural rights. A number of general human rights principles underscore the substantive standards that form the corpus of human rights law. States are required to take steps towards the progressive realization of economic, social and cultural rights. Human rights norms prohibit discrimination on any grounds, including race, ethnic group, skin colour, gender, language, religion, political opinion, national or social origin, economic status or birth. Examining discrimination directs us to the most disadvantaged and marginalized groups, who are often least visible

8 Andrejevic, "The big data divide".

9 Julia Powles and Helen Nissenbaum, "The seductive diversion of 'solving' bias in artificial intelligence", Medium, 7 December 2018.

10 Arthur Gwagwa and Ansgar Koene, "Minimizing algorithmic bias and discrimination in the digital economy", 10 December 2018, in a blog by the African Academic Network on Internet Policy.

11 A/HRC/39/29, para. 27.

in policymaking. Human rights principles also include accountability, access to remedies, transparency and participation.

Human rights in the digital trade context can be framed in terms of different substantive rights. Many view the intersection of human rights and technology as enabling freedom of speech and expression but also as potentially undermining privacy. However, access to technologies and platforms may also be associated with the right to development, freedom of association, social mobilization, democratic participation, digital identity, the right to an adequate standard of living, the right to work, the right to education, the right to participate in cultural life, access to public services and overall accountability. The spectrum of rights has expanded and digital governance cannot be relegated to matters of speech, expression or privacy alone.

Accessibility by individuals to, and the affordability of, digital technologies, particularly Internet connectivity, would also create opportunities for small, domestic enterprises – in particular those owned by women and young people – to use their skills and build new platforms. Digital identification can help overcome barriers to participation; the ability of the Internet to reduce transaction costs increases opportunities for people who face barriers in finding jobs or productive inputs. This promotes inclusion for women, persons with disabilities and people in remote areas.[12] For example, persons with disabilities may use ICTs and assistive technologies more than their peers in order to overcome some of the barriers they find in everyday life. In this way, access to technology can have a transformative effect on individuals' economic and social development and well-being. However, States need to be aware of this and to recognize it through policies and measures. They must also prevent abuse and violations of human rights in those spheres.

The present publication will cover many of the substantive rights highlighted above. For the purpose of this article, we will highlight the issues of connectivity, inequalities and human rights.

Connectivity, development and human rights

Investing in digital infrastructure

More than half of the world's population is now online. At the end of 2018, 51.2 per cent of individuals, or 3.9 billion people, were using the Internet. However, in the world's 47 least developed countries, the majority of which are in Africa, Internet uptake remains relatively low and four out of five individuals (80 per cent) are not yet using the Internet.[13]

Connectivity, development and human rights are interlinked and interdependent. If implemented intentionally, they can create a virtuous cycle.[14] Internet connectivity, as a foundation of sound trading, is still a major issue in Africa. Connectivity is also crucial to achieving the Sustainable Development Goals. Although none of the Goals were specifically dedicated to ICTs when they were adopted in 2015, each one is connected to universal, affordable Internet access.[15] Reference is made

12 *World Development Report 2016: Digital Dividends.*

13 International Telecommunication Union (ITU), *Measuring the Information Society Report*, vol. 1 (Geneva, 2018).

14 Peter Micek, "Human rights principles for connectivity and development" (December 2016), circulated at the 2017 Global Digital Futures Forum.

15 Out of the 232 agreed indicators in the global indicator framework, developed by the Inter-Agency and Expert Group on Sustainable Development Goals Indicators, 7 specifically refer to ICTs. These include the proportion of schools with access to computers and to the Internet, the proportion of individuals with ICT skills, the proportion of individuals who own a mobile telephone, the percentage of the population covered by a mobile network, fixed Internet broadband subscriptions broken down by speed and the proportion of individuals using the Internet. Sustainable Development Goal 9, on building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation, also covers digital infrastructure and innovation, which involves expanding the technological capabilities of industrial sectors to lead to the development of new skills.

in paragraph 72 (g) of Agenda 2063: The Africa We Want of the African Union to digital connectivity and setting Africa on course to be a continent on an equal footing with the rest of the world as an information society. Internet connectivity can often conceal or exacerbate inequality in terms of gender, age, poverty and education. To distribute the benefits of digital trade across society, steps taken towards building infrastructure must be balanced by State obligations of non-discrimination and equality.

Investing in digital infrastructure, particularly Internet connectivity, through assisting domestic companies should be a key priority in Africa. Introducing and implementing policies that may be beneficial for access by individuals to, and affordability of, the Internet, as well as other communication devices, is essential to upholding the principles of equality and non-discrimination. This is particularly important given that the percentage of women Internet users in Africa is lower than that of men. High-quality Internet infrastructure and fast broadband connections could lead to increased job creation in Africa by between 4.2 per cent and 10 per cent in connected areas.[16] In States that have invested heavily in Internet or broadband infrastructure, such as Viet Nam, firms' productivity and market share have increased owing to the use of the Internet in their business activities.[17] Infrastructure can expand the opportunities for local businesses to be more competitive globally, and to participate in international trade. Nevertheless, inadequate infrastructure remains a major issue in Africa.

One major positive trend is that mobile access to basic telecommunications has increased rapidly in Africa. Although it is still below the global average of 66 per cent, mobile telephone penetration in sub-Saharan Africa reached 44 per cent in 2017, representing a massive increase compared with the start of the decade. It is forecast to increase at a compound annual growth rate of 4.8 per cent from 2017 to 2022. Smartphone penetration has increased as well. At the end of 2017, total smartphone penetration was 250 million and is estimated to double by 2025.[18]

For digital trade to thrive, African States will have to support the start-ups and digital initiatives that depend on the continent's increasingly prevalent mobile infrastructure and digital connectivity. Many of these digital initiatives are oriented towards financial services, agriculture, health care, education and governance. This intersection between the digital and the analogue can generate broader development benefits from using these technologies. For example, digital technologies may not directly grant individuals access to clean water and sanitation. However, several methods such as connected metering systems, or the Internet of things (network and communication of physical objects that have an Internet Protocol address for the Internet)[19] can improve water monitoring systems and/or water meters.

The digital divide is not just between Africa and the rest of the world but also between countries on the continent in terms of access to quality connectivity, and within countries in terms of gender, urban-rural and other divides. This has occurred for several reasons, including geographical barriers, allocation of investment and lack of proper digital technology regulations.[20] This affects a range of

16 Joakim Reiter, "4 ways governments can develop digital infrastructure", World Economic Forum, 15 September 2017.

17 *World Development Report 2016: Digital Dividends.*

18 Ibid., p. 11. GSM Association, *The Mobile Economy: Sub-Saharan Africa 2018* (London, 2018).

19 Ihouma Atanga, "The Internet of everything water", Africa Renewal, June 2017.

20 African Trade Policy Centre of the Economic Commission for Africa, the Office of the United Nations High Commissioner for Human Rights and the Friedrich-Ebert-Stiftung, report of the Conference on "Digital trade in Africa: implications for inclusion and human rights", held in Addis Ababa on 31 May and 1 June 2018.

economic and social rights and hinders effective participation, the right to access information and freedom of expression.

The duty to take steps to build and finance digital infrastructure

States have a duty to progressively realize economic, social and cultural rights (article 2, paragraph 1, of the International Covenant on Economic, Social and Cultural Rights) and must take steps to build digital infrastructure and to finance digital infrastructure using the maximum available resources, particularly in underserved areas and among marginalized population groups.[21] International cooperation (article 2, paragraph 1, of the International Covenant on Economic, Social and Cultural Rights) and assistance from developed countries is crucial to fostering development in developing countries; this is reinforced in article 4, paragraph 2, of the Declaration on the Right to Development.[22]

Policymakers must take an active role in charting the course towards a strong policy and regulatory environment, setting broadband strategy, investing in universal and public access, facilitating infrastructure-sharing, and effective spectrum management.[23] Emphasis must be placed on improving links to predominantly landlocked countries that do not have access to affordable international bandwidth, and on facilitating the hosting and creation of content at open and neutral data centres within African countries. One important factor in the context of new and emerging technologies is the difficulty faced by developing economies in accessing technological solutions owing to the data centre divide. A lack of supporting infrastructure, such as Internet exchange points, reliable and inexpensive electricity supply, and robust fibre-optic backbones, affects the deployment of national data centres. Up to 85 per cent of data centres offering co-location services are in developed countries, a fact that illustrates the divide that will have to be overcome if developing economies (particularly in Africa) are to reap the benefits of emerging solutions.[24]

Digital infrastructure delivery and faster broadband in Africa also requires financial tools to address economic and social challenges. A total of 37 African States have Universal Service and Access Funds, which are aimed at promoting connectivity in underprivileged communities. They are financed through contributions from mobile network operators and other telecommunications companies. However, an estimated $408 million of funds have been left unused, although it is not clear why since not all countries publish details on their Universal Service and Access Fund activities.[25] It seems that Universal Service and Access Fund managers do not necessarily appreciate the importance of investing in, for example, reducing the gender or urban-rural divide. For investment to lead to improvement of infrastructure, both how funds are allocated and transparency in distribution mechanisms are important.

Enhancing and improving digital infrastructure requires Governments to encourage investment, locally and internationally, including by introducing investment-friendly regulations.[26] The World Bank has offered interest-free loans for submarine cables and this has the

21 Universal Service and Access Funds can finance infrastructure development in underserved areas and among marginalized population groups or to widen opportunities for individual access through end-user data and device subsidies.

22 General Assembly resolution 41/128, annex.

23 "2018 affordability report".

24 *Information Economy Report 2013: The Cloud Economy and Developing Countries* (United Nations publications, Sales No. E.13.II.D.6).

25 Dhanaraj Thakur and Lauren Potter, "Universal Service and Access Funds: an untapped resource to close the gender digital divide" (Washington, D.C., World Wide Web Foundation, 2018).

26 World Economic Forum, *Delivering Digital Infrastructure: Advancing the Internet Economy* (Geneva, 2014), p. 45.

potential to reduce the impact of this critical cost component. Similar investment loans have reduced the costs of national backbone networks in countries such as Malawi and the United Republic of Tanzania. Multilateral development banks, along with other development finance institutions, were involved in the Eastern Africa Submarine Cable System project in 2010, to achieve the installation of a 10,000 km submarine cable from the Sudan to South Africa.[27] Undersea fibre-optic cables have also expanded transmission data capacity and have decreased transmission costs and time. However, research shows that multilateral development bank investments in the ICT sector account for only 1 per cent of their overall investments, a rate that falls far short of the estimated $100 billion needed to achieve universal access in the next decade.[28] In the Digital Silk Road project, a Chinese company, Huawei, along with the Export-Import Bank of China, decided to invest $1 billion in enhancing digital infrastructure –particularly Internet connectivity – in several African countries.[29] Similarly, the European Union has established an External Investment Plan for Africa. The project includes a "guarantee fund" of a total of €1.5 billion by 2020 for access to Internet and digital services.[30] In terms of satellite broadband, "Konnect", which is the satellite broadband initiative of the European Telecommunications Satellite Organization (Eutelsat), is aimed at providing extensive satellite coverage of sub-Saharan Africa for the delivery of high-quality broadband services. The satellite technology can expand opportunities for individuals to have Internet access, including high-speed Internet.[31] Although these foreign and multilateral investments can enhance Internet or digital infrastructure in Africa and expand individuals' access to the Internet, it is important to scrutinize them through a human rights lens. This includes assessing the potential adverse impact on human rights – such as freedom of speech and expression, the right to privacy, and the right to non-discrimination and equality – and whether it ensures a fair distribution of benefits as an integral element of the right to development. Such projects must also be assessed in terms of meeting the safeguard policies of the multilateral development banks involved.

States have obligations to realize human rights; business must also respect human rights. The Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework contains authoritative guidance to prevent business activities having adverse impacts on human rights. For example, the private sector often prefers to invest in ICT infrastructure in densely populated urban areas as that will lead to higher investment returns. They prefer not to invest in unattractive markets or in uneconomic services.[32] Subsequently, building or improving infrastructure also requires economic investment, and, to some extent, public intervention, as deploying infrastructure, particularly in rural areas, is costly.[33] Governments and policymakers need to encourage and introduce private sector-friendly regulations that can improve infrastructure and ensure that private sector investment does not lead to discriminatory access, or ensure that public sector investment fills that gap.

27 World Bank, "$215 million Central Africa backbone program will bring low cost, high speed internet to the region", press release of 6 October 2009.

28 "2018 affordability report".

29 Emeka Umejei, "The imitation game: will China's investments reshape Africa's Internet?", Power 3.0, 6 December 2018.

30 European Commission, "The EU's external investment plan: first projects in Africa and the neighbourhood", 11 July 2018.

31 Eutelsat, "Konnect: bringing the world to you–anywhere". Available at www.eutelsat.com; Eutelsat, "Konnect Africa launches its satellite internet access offers in the Democratic Republic of the Congo", press release. 28 November 2018; and Annamarie Nyiradi, "Konnect Africa to launch satellite broadband in Côte d'Ivoire", Via Satellite, 15 January 2019.

32 *World Development Report 2016: Digital Dividends.*

33 GSM Association, "Enabling rural coverage: regulatory and policy recommendations to foster mobile broadband coverage in developing countries" (London, 2018), p. 5.

Complement digital strategies with overall development strategies

Since digital infrastructure and analogue infrastructure intersect, the continent needs better digital infrastructure and States must progressively realize access while also fulfilling obligations to create better infrastructure to support development and promoting clean energy, water, sanitation and transport. Vital physical infrastructure should not be neglected in favour of digital infrastructure. If the analogue components are neglected or relegated, countries will not experience a boost in productivity or a reduction in inequality.[34] For example, the *2018 Africa Sustainable Development Report* found that the proportion of people in sub-Saharan Africa with access to safe water (Sustainable Development Goal 6) was only 23.7 per cent. This is far behind global standards, even though those countries have received a large amount of official development assistance to improve access to safe water.[35]

In terms of Sustainable Development Goal 7, on access to affordable, reliable, sustainable and modern energy, the number of people in Africa lacking access to electricity decreased from 640 million in 2013 to 590 million in 2016, and the electrification rate has been increasing over the years, from 34 per cent in 2000 to 52 per cent in 2016. However, owing to potential population growth, from 1.3 billion in 2017 to 1.7 billion people in 2030, roughly the same number of people are likely to be without access to electricity in 2030 as in 2016 (590 million people).[36] This lack of electrification can curtail the benefits of digital trade and the opportunities for small businesses to create and expand digital infrastructure. "Infrastructure-sharing", in which other sectors such as energy can share resources with these operators, can be an option for small businesses to reduce the cost of expanding or improving digital infrastructure.[37] By the same token, other infrastructure such as roads, ports and warehouses also play an essential role as supporting infrastructure for digital technology and the Internet, and are key to intra-African trade as well. This reinforces the need for an integrated development policy, which combines digital with overall development strategies and emphasizes the indivisibility and interrelatedness of different substantive human rights.

Access to an open, secure, neutral, inclusive and reliable Internet

The Internet has to be open, secure, reliable, inclusive and affordable. The freedom of expression and privacy context in the implementing location is crucial for any connectivity project.[38] Connectivity and access to ICTs alone cannot lead to transformative development and human rights outcomes. Freedom of speech and expression and the right to privacy, as envisaged in numerous international human rights instruments such as International Covenant on Civil and Political Rights, are integral elements of the enjoyment of Internet services by individuals. However, in many instances, Governments have used the Internet or other digital technologies to limit and constrain those rights.

Inequalities and non-discrimination in access to information and communications technologies

Inequalities in access to technology are often rooted in structural and historical discrimination, so groups that are already left behind in terms of their access to education, food,

34 *World Development Report 2016: Digital Dividends.*

35 *2018 Africa Sustainable Development Report: Towards a Transformed and Resilient Continent* (United Nations publications, Sales No. E.19.II.K.1).

36 Economic Commission for Africa and others, "Policy brief 18: achieving SDG 7 in Africa", in *Accelerating SDG 7 Achievement: Policy Briefs in Support of the First SDG7 Review at the United Nations High-Level Political Forum 2018* (New York, 2018), pp. 142–143.

37 *World Development Report 2016: Digital Dividends*, p. 213.

38 Micek, "Human rights principles for connectivity and development".

energy, water, sanitation or decent jobs or in terms of their literacy and skills find themselves at the bottom rung of the digital ladder. Policymakers have choices to make in terms of removing barriers and tackling persistent and pervasive discrimination. Women in particular are left behind in terms of the digital divide.[39] According to the International Telecommunication Union (ITU), while the gender gap has narrowed in most regions since 2013, it has widened in Africa.[40] In Africa, the proportion of women using the Internet is 25 per cent lower than the proportion of men. Responses to close the gender digital divide must involve not only increasing access but also addressing pervasive online and offline gender discrimination. The factors behind the gender digital divide are multiple and complex, and are often linked to social norms, bias, and gender stereotypes and discrimination.[41] In its resolution 32/13, the United Nations Human Rights Council requested States to bridge the many forms of digital divides, including the gender digital divide. The United Nations High Commissioner for Human Rights has recommended that gender equality should be promoted in the design and implementation of ICTs, and in the policy decisions and frameworks that regulate them.[42]

The Committee on Economic, Social and Cultural Rights has referred to Internet access in Africa in a number of concluding observations. For example, the Committee noted that access to the Internet in the Gambia is limited to a few urban areas.[43] This is directly relevant to article 15 of the International Covenant on Economic, Social and Cultural Rights, particularly in the context of taking part in cultural life, which is intrinsically linked to freedom of expression, and enjoying the benefits of scientific progress and its applications. In 2016, the Committee on Economic, Social and Cultural Rights noted that, while more than 50 per cent of the population in Kenya had access to the Internet, such access was limited among disadvantaged and marginalized individuals and groups, and in rural areas.[44] In such cases, the Committee has recommended that States take effective measures and redouble efforts to ensure that disadvantaged and marginalized individuals and people living in rural areas can receive or acquire the benefits of Internet access.

Another area where there is discrimination is in the area of skills. Building digital literacy and skills in Africa is a serious challenge given the existing gaps in the region. This has a direct impact on participation in the economic, social and political spheres; inequalities between and within countries in terms of employment, education, gender and geography are replicated in digital skill distribution,[45] reinforcing those inequalities. Effective measures to close the digital divide should be developed and implemented, especially for women, persons with disabilities, older persons, persons living in rural areas and indigenous peoples. In doing so, the involvement of different stakeholders, including civil society actors and businesses, in the design, development and use of ICTs for participation should be promoted.[46]

39 See the Report of the United Nations High Commissioner for Human Rights entitled "Promotion, protection and enjoyment of human rights on the Internet: ways to bridge the gender digital divide from a human rights perspective" (A/HRC/35/9).

40 ITU, "ICT facts and figures 2017" (Geneva, 2017).

41 Office of the United Nations High Commissioner for Human Rights (OHCHR), "How gender stereotyping affects the enjoyment of human rights". Available at www.ohchr.org. See also A/HRC/35/9.

42 A/HRC/35/9, para. 45.

43 E/C.12/GMB/CO/1, para. 29.

44 E/C.12/KEN/CO/2-5, para. 61.

45 ITU, *Measuring the Information Society Report*, p. 48.

46 A/HRC/39/28, paras. 88–89.

Net neutrality and non-discrimination in access to information

Net neutrality –the principle that Internet service providers treat all Internet sources, websites, applications, and their contents, equally and without discrimination[47] – can play an essential role in human rights. Net neutrality can have various impacts on individuals' rights, including the right to freedom of speech and expression, as well as access to information. It can nurture business innovation and creativity while creating healthy competition, as it would prevent Internet service providers from charging technology enterprises for faster delivery, for example.[48] The State's duty to promote freedom of expression argues strongly for net neutrality in order to promote the widest possible non-discriminatory access to information. In the report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, it was noted that, in the digital age, the freedom to choose among information sources is meaningful only when Internet content and applications of all kinds are transmitted without undue discrimination or interference by non-State actors, including providers.[49] Certain strategies need to be introduced and implemented to uphold the principles of net neutrality; this raises the question of whether net neutrality should be regulated or whether it should only be a moral duty of all Internet service providers and technology companies to assist countries in providing affordable and high-quality Internet services. It has also been argued that regulating net neutrality would not be needed if Internet service providers were not gatekeepers for access.[50]

Internet shutdowns are costly and undermine larger digital strategies

Internet shutdowns – the intentional disruption of Internet or electronic communications, rendering them inaccessible or effectively unusable, for a specific population or within a location, often to exert control over the flow of information – are a type of online censorship that many countries use to restrict, for example, freedom of expression. Individuals cannot fully receive the benefits of Internet services without States granting and fulfilling their right to freedom of expression and freedom of speech. Restrictions to freedom of speech and expression (article 19 of the International Covenant on Civil and Political Rights) must be carefully monitored to ensure that they meet the criteria of legality and necessity, and that they meet legitimate objectives or do not serve illegitimate ones. Telecommunications shutdowns are often unlawful and used in elections and other events of public interest with little or no explanation; this increases the perception that they are used to suppress reporting, criticism or dissent or even to commit and cover up abuses. When shutdowns are enforced for security measures, they are often still unlawful as they do not satisfy the necessity test when they are applied to areas larger than the actual area that has a security threat.[51] According to a study by the Collaboration on International ICT Policy in East and Southern Africa, Internet and social media shutdowns cost sub-Saharan African countries an estimated $237 million between 2015 and 2017.[52] Some research has demonstrated that expanding connectivity and increasing Internet penetration can help

47 Nicholas Economides, "'Net neutrality'", non-discrimination and digital distribution of content through the Internet", *I/S: A Journal of Law and Policy for the Information Society*, vol. 4, No. 2 (2008).

48 Robert W. Hahn, Robert E. Litan and Hal J. Singer, "The economics of wireless net neutrality", *Journal of Competition Law and Economics*, vol. 3, No. 3 (September 2007).

49 A/HRC/35/22, para. 23.

50 Nanjira Sambuli, "Challenges and opportunities for advancing Internet access in developing countries while upholding net neutrality", *Journal of Cyber Policy*, vol. 1, No. 1 (2016).

51 See A/HRC/35/22.

52 Collaboration on International ICT Policy in East and Southern Africa, "A framework for calculating the economic impact of internet disruptions in sub-Saharan Africa" (Kampala, 2017).

Governments reconsider Internet shutdown activity as a strategy for security. The rationale is that Governments can face a dilemma owing to the advantages of technological development, such as new sources of revenue and job creation, meaning that expanding connectivity becomes a more lucrative proposition than restricting Internet access.[53]

Besides Internet shutdowns, surveillance has also been one of the ways in which Governments have curbed individuals' right to privacy, as well as their right to freedom of expression and speech. In its resolution 68/167, the General Assembly expressed deep concern at the negative impact that surveillance and/or interception of communications may have on the exercise and enjoyment of human rights and affirmed that the same rights that people have offline must also be protected online, including the right to privacy. Several obstacles to the right to privacy and issues relating to surveillance have also been addressed by the Human Rights Council, including the lack or inadequacy of detailed rules, practical procedures and appropriate oversight mechanisms to ensure independent, reliable and efficient control of surveillance, domestically and globally.[54] The Council also asserts that there is no one piece of national surveillance legislation perfectly compliant with and respectful of international standards on the right to privacy.[55] In his report to the United Nations Human Rights Council in 2019, the Special Rapporteur on the right to privacy noted that the General Data Protection Regulation of the European Union and Directive 2016/680 of the European Parliament and of the Council, while important, were insufficient for extending privacy protection to the field of national security, including the oversight of intelligence activities undertaken for national security purposes.[56] The Human Rights Committee noted in 2016 that, in terms of the right to privacy and interception of private communications, South Africa needed to establish independent oversight mechanisms to prevent abuses and ensure that individuals had access to effective remedies.[57] The generally inadequate protection of the right to privacy in the context of national security legislation and increased government surveillance, combined with poor data protection regulations, create further barriers to individuals' meaningful access to ICTs.

Affordability is not a luxury

Creating or ensuring connectivity and access to affordable and high-quality Internet and digital platforms is the foundation for any subsequent progress with respect to the emergence of digital trade. The digital divide in terms of access to ICTs is magnified by other obstacles, including low download and upload speeds, relatively expensive broadband services compared with income levels[58] and discrimination, including on the grounds of sex, age and place of residence (urban or rural). In countries where these factors exist, consumers are less likely to use the Internet for economic purposes.[59] Further, price discrimination and restricting or blocking websites can also hinder individuals' access to the Internet.

Internet, but at what cost?

The affordability of ICT services has traditionally been measured as a ratio of two elements:

53 Jan Rydzak, "Disconnected: a human rights-based approach to network disruptions" (Washington, D.C., Global Network Initiative, 2018).
54 A/HRC/37/62, para. 53.
55 Ibid., para. 103.
56 A/HRC/40/63, para. 27 (a).
57 CCPR/C/ZAF/CO/1, para. 43.
58 World Trade Organization, *World Trade Report 2018: The Future of World Trade: How Digital Technologies are Transforming Global Commerce* (Geneva, 2018).
59 *World Investment Report 2017: Investment and the Digital Economy* (United Nations publications, Sales No. E.17.II.D.3).

the price of the service and the economic welfare of the customer. Smartphone penetration has increased notably over the last few years in Africa. In recent years, prices of smartphones have fallen from a monthly average of $230 in 2012 to $160 in 2015.[60] However, individuals or citizens in most African countries face obstacles to Internet access for several reasons, including the high cost of Internet services or mobile data. Furthermore, the countries in which broadband is the most expensive are also those in which broadband is the slowest. African countries, to some extent, have the most expensive Internet in the world. For instance, it was reported in 2018 that the yearly price of Internet packages was $1,368.72 in Mauritania, $1,117.87 in Namibia and $651.72 in Burkina Faso. In addition, for 1 GB of Internet data, an individual user can spend on average $35.47 per month in Equatorial Guinea, $25 in Zimbabwe and $21.86 in Eswatini.[61]

It must also be emphasized that levels of economic development and monthly spending play an important role in this context; nonetheless, it has been reported that individual users in Africa, on average, spend around 8.76 per cent of their income on data packages.[62] The target of the Broadband Commission for Sustainable Development is that, by 2025, Internet or mobile data should not cost individuals more than 2 per cent of their average monthly income.[63] In 2018, the Committee on Economic, Social and Cultural Rights observed that access to the Internet in South Africa was higher in urban than rural areas owing to the high cost. It also noted that the monthly cost of Internet access in Johannesburg and Cape Town was more expensive than in cities such as Zurich.[64]

Taxes on over-the-top services and stringent regulation of the Internet

Another area of concern is specific taxes that have compromised both freedom of speech and expression, and affordability. In July 2018, the African Commission on Human and Peoples' Rights, acting through the Special Rapporteur on Freedom of Expression and Access to Information in Africa and the Country Rapporteur responsible for monitoring the human rights situation in Kenya and the United Republic of Tanzania, issued a press release on the growing trend among States in East Africa to adopt stringent regulations on the Internet and Internet platforms. Concerns were raised about the adoption of the Electronic and Postal Communications (Online Content) Regulations 2018 in the United Republic of Tanzania, under which bloggers were required to pay up to 2.1 million Tanzanian shillings (about $930) for a licence, and the Excise Duty (Amendment) Bill 2018 in Uganda, under which a tax on "over-the-top" services was introduced for access to social media and other sites. The Commission noted that those regulations might negatively impact the ability of users to gain affordable access to the Internet, which went against States' commitments to protect the right of every individual to receive information, in addition to the right to express and disseminate one's opinion within the law, which is provided for under article 9 of the African Charter on Human and Peoples' Rights.[65] To surmount affordability and coverage barriers in least developed countries and support investment in network and

60 GSM Association and GSMA Intelligence, *The Mobile Economy: Africa 2016* (London, GSM Association, 2016).

61 Inemesit Udodiong, "These 7 countries have the highest internet charges in Africa", Business Insider, 8 March 2019.

62 Ibid. See also Alliance for Affordable Internet, "New data: what's the price of 1GB of mobile broadband across LMICs?", press release, 10 September 2018.

63 Broadband Commission for Sustainable Development, "2025 Targets: 'Connecting the other half'".

64 OHCHR, "Committee on Economic, Social and Cultural Rights considers the report of South Africa", press release, 3 October 2018.

65 African Commission on Human Rights and Peoples' Rights, "Press release on the growing trend of stringent regulation of the Internet in East African States", 2 July 2018.

coverage, Governments have been encouraged to reform sector-specific taxation and fees and to promote infrastructure-sharing as a mechanism for reducing the cost of service provision. For instance, between 2014 and 2016, eight least developed countries, namely Angola, Bangladesh, the Democratic Republic of the Congo, Mauritania, Nepal, the Niger, Senegal and Uganda, reduced taxes on services (for example, specific value-added tax on short message services, data or calls, connection tax, or SIM tax). In parallel, 45 per cent of countries had developed plans to reduce costs by facilitating infrastructure and resource-sharing.[66]

High cost of membership of platforms

Affordable Internet access is essential for small businesses in developing and least developed countries to participate in global markets.[67] It must be emphasized that small businesses play an essential role in countries' economic growth, innovation and job creation.[68] Small business participation in international value chains is essential to attain trade inclusiveness, especially owing to its benefits for the labour force.[69] However, small enterprises in Africa have faced difficulties in accessing e-commerce platforms due to the cost of membership.[70] A survey conducted by the International Trade Centre demonstrates that one of the challenges facing businesses in Africa is the cost of e-commerce. In addition, membership fees have also been a prominent issue facing developing and least developed countries. Large international platforms may charge 7–15 per cent commission, although this would also depend on the estimated or identified operational costs and risks. In this regard, the rates can be even higher in developing and least developed countries.[71] In Tunisia, for example, a lack of finances for investing in e-commerce and the high cost of e-commerce services, payment solutions and transport have been cited among others as the underlying reasons for small businesses' lack of participation in e-commerce services.[72]

Interestingly, not all international e-commerce platforms such as Amazon provide their services in least developed countries and there is also not always a local or regional counterpart.[73] However, the arrival of international firms such as Shopify and PayPal in South Africa could increase opportunities for individuals and small businesses to sell their products online to different countries and receive payment easily. The cost for small businesses or individuals to sell their products through Shopify varies, and starts from $9 per month.[74] This, however, depends on the product categories in question. Online platforms such as BidorBuy and UAfrica have enabled individuals or small businesses to use courier companies provided on the platform,[75] and have the potential to reduce transportation costs and delivery times. It must be emphasized, however, that this would also depend on income levels, among other factors, as using such platforms is not free. States should take steps to introduce and enact regulations that create an enabling

66 Alliance for Affordable Internet, "2017 affordability report" (Washington, D.C., 2017).
67 International Trade Centre, *International E-Commerce in Africa: The Way Forward* (Geneva, 2015).
68 Mkhosi, "National report on e-commerce development in South Africa", p. 4.
69 International Trade Centre, Annual Report 2017 (Geneva, 2018), p. 4.
70 *World Trade Report 2018*, p. 45.
71 International Trade Centre, *New Pathways to E-commerce: A Global MSME Competitiveness Survey* (Geneva, 2017).
72 *International E-Commerce in Africa*, p. 11.
73 Ibid., p. 16.
74 www.shopify.com/pricing.
75 See BidorBuy, "Shipping options", 10 May 2019; and see UAfrica, "Pricing that scales with your business". Available at www.uafrica.com/pricing.

environment for small businesses to develop and access finance and credit.[76]

Zero-rating: affordable but not net neutral

Zero-rating, meaning accessing the Internet without any cost (although subject to certain rules and requirements), can benefit individuals.[77] It has been argued that such a concept would allow people in developing countries to access the Internet and that it would be better than having no access at all.[78] The zero-rating method can take several forms, such as zero-priced or fixed-price; capped or uncapped; subscriber-paid, Internet service-paid, paid for by both, or unpaid; content-based, source-based or destination-based, or agnostic to content, source or destination; automatically provided by the Internet service provider, or chosen by the customers.[79] For example, Millicom, a technology company which established a zero-rated programme in the United Republic of Tanzania along with Facebook, was able to achieve an 85 per cent increase in its data users in the first year.[80] Facebook's Free Basics application, a zero-rated programme, is described as an application that provides people with access to useful services on their mobile telephones in markets where Internet access may be less affordable. However, the application limits access to certain websites and does not provide much local content, including news. Often, language is also an issue. Individuals in Kenya, for example, can use the application in both English and Kiswahili, but not all free platforms or services are available in Kiswahili.[81]

Despite the potential opportunities provided by zero-rating, rural areas in several African countries – such as Kenya and Rwanda – have certain online barriers, even with access to subsidized data or access offered by zero-rating. These include poor network quality and limited coverage despite the consumption of subsidized data. Women face additional barriers to Internet use as a result of concerns over inappropriate online content.[82] However, even if affordable, the question, given some of the examples above, is whether zero-rating lends itself to discrimination to access to information and violates net neutrality. There is potential for the emergence of a two-tiered Internet that perpetuates, in particular, gender and income inequalities and urban-rural divides. The zero-rating method glosses over the fact that many people in rural communities do not even have access to the best subsidized offerings and have to spend disproportionate amounts of their already low income on mobile access, assuming they can even find electricity to charge their devices.[83] Furthermore, zero-rating would generate a closed and centralized system in which the operators and governments control individuals' access to the Internet.

76 Mkhosi, "National report on e-commerce development in South Africa".

77 Jessica A. Hollis, "Testing the bounds of net neutrality with zero-rating practices", *Berkeley Technology Law Journal*, vol. 32, No. 4 (November 2018).

78 Julianne Romanosky and Marshini Chetty, "Understanding the use and impact of the zero-rated free basics platform in South Africa" (2018).

79 Sambuli, "Challenges and opportunities for advancing internet access in developing countries".

80 Diana Goovaerts, "Zero rating helps connect Africa", Mobile World Live, 28 February 2018; and Azamtv, "Zero rating helps connect Tanzania", 28 February 2018.

81 Global Voices, "Free basics in real life: six case studies on Facebook's internet 'On Ramp' initiative from Africa, Asia and Latin America" (Amsterdam, 2017).

82 Anne Morris, "Zero-rating no panacea in Kenya, Nigeria, Rwanda and South Africa", Connecting Africa, 1 August 2016.

83 Morris, "Zero-rating no panacea in Kenya, Nigeria, Rwanda and South Africa"; and Irene Gaitirira, "Research reveals obstacles to Internet access in Africa", ComMattersKenya, 6 August 2017.

Think pieces

The digital transformation of Africa: hype or reality?

Omobola Johnson

The Internet and the World Wide Web have completely changed the way that we work, play and live, and many people cannot imagine life without them. During his visit to Nigeria in March 2019 to celebrate the thirtieth anniversary of the Web, Sir Tim Berners-Lee, the founder of the Web, said, profoundly, that Nigeria (which can be considered a proxy for Africa) represents both the present and the future of the Web: the present in the sense of the vibrant technology community that is emerging and the way in which the Internet is already impacting lives, and the future in terms of the millions of people that are yet to be connected, and the resulting socioeconomic impact that will be felt when all Africans are connected to the Internet and the World Wide Web.

This impact is, in essence, what could be called a digital transformation, defined as the use of information and communications technology (ICT) to radically improve the performance, reach, efficiency and growth of a company a country or, in the current case of Africa, a continent. What does digital transformation look like? In the 1950s, the Republic of Korea was one of the poorest countries in the world. Today it is one of the most advanced ICT economies in the world: ubiquitous connectivity is a way of life, access to fast broadband is available to about 98.8 per cent of the population, digital payments are accepted in almost every retail outlet, the country is home to leading electronic and ICT companies (for example, Samsung, LG and Korea Telecom) and it has a full-fledged e-government procurement system, as well as many other government services, that can be accessed over the Internet. This massive transformation has been largely attributed to three things: an advanced education system, purposeful leveraging of the positive aspects of Korean culture, and the consistent and sustained involvement, intervention and commitment of the Government of the Republic of Korea. I make this reference to demonstrate that, regardless of where Africa is today, and what our realities are, it is possible to achieve digital transformation.

The digital transformation of Africa is no longer a luxury or an optional convenience. It has become a necessity, spawned in fact by Africa's developmental agenda setters. This is because none of our documented aspirations – the 2030 Agenda for Sustainable Development, Agenda 2063: The Africa We Want, the African Continental Free Trade Area, the Action Plan for Boosting Intra-African Trade, and the Single African Air Transport Market – can be achieved without significant advancements in ICT. Put another way, these aspirations are attainable only because of the power of ICTs to enable us to leapfrog in our journey towards development.

One can assume that Africa is already undergoing a digital transformation, but the question is whether it is a real transformation that will deliver tangible outcomes, like those seen in the Republic of Korea, or whether it is a transformation that is lacking in real substance and that has been exaggerated beyond its capacity to deliver real results. Much of the popular narrative constructed around Africa in recent decades has been exaggerated. Just look at the headline articles about the African

continent published in the popular business periodical The Economist in the last 10 to 15 years, which range from "the Hopeless Continent" to "Africa Rising", to the most recent one, "the Scramble for Africa". None of these sweeping statements tells a complete or accurate story about the continent or even the individual countries that make up the continent. They are narratives, promoted at various points in time, based on what the promoters saw, or thought they saw. In essence, they are simplistic and short on nuance.

The current narrative and hype that we hear about digital transformation is, as before, being largely fuelled by what people see. And what do they see? They see the tremendous opportunity and potential that is before us to truly transform Africa through digital technology.

The most compelling trends observed are the increasing rate of mobile phone ownership across Africa and the incredible computing power of today's smartphones (as well as other devices with more advanced features). About 50 per cent of Africans own a mobile phone; another 15 to 20 per cent do not own a mobile phone but have access to one, making the mobile phone access rate about 65–70 per cent.[1] Arising from this is a paradox: most Africans have more access to mobile phones than to nearly everything else they really need. For example, only 28 per cent of Africans have access to financial services, only 33 per cent have access to energy through their home country's national grid, and only 31 per cent have access to decent sanitation.[2]

But the real excitement is that innovation involving mobile-enabled technology is providing many more Africans with access to things they really need but cannot otherwise get in an offline world: health services, education and energy, to name a few. Significant and increasing levels of mobile phone ownership, access and innovation provide an unprecedented opportunity for the kind of inclusive development that has eluded many African administrations. The following are some examples of this phenomenon.

Eneza Education and Gidi Mobile are companies in the education sector that are digitizing curricula and complementing classroom learning in a way that places students at the centre of learning, thus improving learning outcomes.

M-KOPA and Rensource are using off-grid solar energy to power individual homes and markets, using innovative "pay-as-you-go" mobile phone-enabled payment systems to address affordability and broaden access. LifeBank in Nigeria is using mobile phone-enabled technology to match on-demand blood requests from hospitals with available blood from the inventories of blood banks across the country, thereby reducing the time needed to deliver blood to a patient and saving lives in the process. Kangpe provides retail medical insurance at a rate of between $10 and $18 per month (less than a dollar a day), payable in instalments; this is something that is only possible through the online aggregation of doctors who can respond to and treat minor ailments that do not require a clinic or hospital visit. The companies Branch, Tala, Mines, Pezesha and 4G Capital extend small loans to individuals and small businesses that do not meet the onerous credit qualification criteria of traditional banks or financial institutions. Twiga, an e-commerce and logistics company, streamlines the very fragmented fruit and vegetable delivery value chain in Nairobi to deliver bananas directly from the farm to petty traders on the streets of Nairobi, effectively eliminating middlemen and reducing the cost of bananas. In the last five

1 GSMA, Mobile for Development Intelligence.
2 Ibid.

years, Andela has trained over 1,000 world-class African software developers who live and work on the continent but who are embedded virtually in the engineering teams of technology companies in the United States of America and Europe. Farmcrowdy, Thrive Agric, Apollo Agriculture and Wefarm are all companies in the agricultural sector that are using mobile technology to provide financial support for farm inputs such as seed and fertilizer, information on climate and weather patterns, and extension services, to meet the needs of small-scale farmers, who are the mainstay of many African economies and who are largely unserved or underserved by traditional offline institutions. Finally, M-Pesa, a mobile phone-enabled peer-to-peer payment service, is an innovation that addresses the unique need of many Africans to conveniently make small payments in informal situations; it is also replicable in the developed world.

These companies are doing what has eluded traditional institutions and successive Governments, and they are all inspired and enabled by increasing mobile device ownership. These are the "green shoots", or "arrowheads", of Africa's digital transformation.

There is no better evidence of these green shoots of transformation than the increasing interest of the rest of the world in the innovation taking place in Africa to solve uniquely African challenges. African entrepreneurs are being hosted at world-class start-up accelerators in Silicon Valley such as Y Combinator in order to help them build major technology companies, and major international events where technology talent and technology companies are discovered and supported now have African equivalents. Numerous start-up pitch competitions, "hackathons" and demonstration days are happening at the local level with increasing regularity, supporting the technology ecosystem. Venture capitalists and other firms are providing capital to fund the scaling (that is, providing services to greater numbers of customers) and commercial success of technology companies that are solving uniquely African challenges in innovative and creative ways. In 2018, start-ups in Africa received a total of $334.5 million from local and international value chains,[3] representing a 71 per cent increase from 2017. Such levels of growth have been witnessed since 2015 and show no evidence of declining.

Thus, while it could be argued that this digital transformation is being hyped because of the lack of scaling, quite a few of the companies mentioned above are on a growth trajectory that strongly suggests scaling and already have operations in more than one African country. For this reason I believe there is enough evidence that Africa can be digitally transformed.

So, what holds Africa back from being propelled into a digitally transformed future?

Infrastructure

The first constraining factor is infrastructure. Despite the fact that 600 million Africans own or have access to a mobile phone, the digital infrastructure through which they access the Internet and the Web is not only insufficient, but it is slow and expensive. These three drawbacks are a major deterrent to the deployment and adoption of digital and online services.

Mobile network operators and other digital infrastructure providers have concentrated the deployment of digital infrastructure in the most commercially viable areas. Studies of the gaps in access in many African countries reveal that huge swathes of the continent do not even have access to a 2G signal, despite the presence of substantial economic activity.

3 Disrupt Africa, "African tech startups funding report 2018".

The implication of poor connectivity in rural areas is that digital opportunities to support and include the large and vulnerable populations that live in those areas are less than optimal. The longer-term implication is that Africans who are excluded in the offline world will most likely be excluded in the online world unless something is done to address the infrastructure gap.

The poor integration of our road, rail and air infrastructure is unfortunately also manifest in our digital infrastructure. We joke about flying to Europe and back as being the fastest way to make a trip between two African countries, yet the same is sadly true of our digital infrastructure which is currently dominated by undersea cable. For instance, digital information passed between Cape Town and Cairo must first leave Africa, then travel by undersea cable through London and Palermo before landing in Cairo 209 milliseconds later. A terrestrial fibre-optic cable between those cities would cut that time down to 97 milliseconds. The most ludicrous example of this is the time it takes for a signal from Cape Town to reach Khartoum; the signal must first leave Africa, then travel to London, New York, San Jose and Santa Clara (California), and then Tokyo via various undersea cables, before finally landing in Khartoum 450 milliseconds later. As in the previous example, an intra-African terrestrial fibre-optic cable would reduce the time significantly, in this case to 84 milliseconds. The capital required to make this a reality, however, is not insignificant.

With the liberalization and privatization of the telecommunications industry in most African countries, Governments have ceased their funding of the industry. Private capital for digital infrastructure has largely been deployed to locations and markets where the highest returns can be achieved. The challenge now is to connect all Africans, regardless of where they live and how much they earn, so they can be included in and benefit from a digital transformation. This requires innovation in finance. The concept of blended finance has been mooted to facilitate the deployment of infrastructure in rural areas that may not be commercially viable but where connectivity is still required; it involves blending private capital, government grants, low-interest funding from development finance institutions and universal service access funds to reduce the costs of financing so that decent financial returns on the infrastructure can still be achieved, even with lower access fees.

Affordability

The second constraining factor is affordability. The Alliance for Affordable Internet has proposed an affordability target – now accepted as a global target – for 1 GB of data to cost no more than 2 per cent of average per capita monthly income.[4] On average, in Africa, the cost of a 1-GB mobile prepaid broadband plan is equivalent to 8.76 per cent of average per capita monthly income. It amounts to 3.58 per cent in Latin America and the Caribbean while in Asia it amounts to 1.54 per cent. In essence, Internet users in Africa pay the highest prices for mobile data relative to average national per capita income. The latest affordability report reveals that the price has increased in Africa over the past year, while it has either dropped or stayed the same in other regions.[5] In many African countries, the cost of 1 GB of data is as high as 10 per cent of average national per capita income. At these prices, connectivity is a luxury, not a need, despite the fact that the services that leverage this connectivity are needs and not luxuries.

There is also a disturbing trend that impacts the affordability of an Internet connection:

4 International Telecommunications Union (ITU), "UN Broadband Commission sets global broadband targets to bring online the world's 3.8 billion not connected to the Internet", press release, 23 January 2018.

5 Alliance for Affordable Internet, "2018 affordability report" (Washington, D.C., World Wide Web Foundation, 2018).

taxes that are imposed on either the digital infrastructure or the use of the digital infrastructure. In many parts of the continent, there is a constant battle between State and local governments and mobile network operators over taxes and levies on infrastructure. In some instances, such taxes amount to as much as a third of the cost of deploying the infrastructure and those costs are invariably passed onto the consumer in the form of a more costly connection. The other taxes are utilization taxes – so-called social media or communications taxes – collected ostensibly to fund government projects in the areas of security, education and health, for instance. There is nothing more seductive or alluring to governments that need cash than the concentration of their citizens on one platform, which makes collection very easy. The unintended consequence of utilization taxes is a reduction in data utilization and a slowdown in the expansion of networks and economic growth, the exact opposite of what is required for a digital transformation.

Policy and regulation

The third constraining factor is policy and regulation. The conditions necessary for a digital transformation include not only the establishment of an ICT policy or digital strategy, but also a national broadband plan that provides the public and private sectors with clear guidelines and a road map to sector development while also giving operators legal and regulatory certainty and promoting investment. But beyond having a broadband plan, policymakers, regulators and administrations need to take the time to understand how technology businesses are built, as well as the subtle differences between technology businesses and traditional businesses (for example, in terms of the propensity to scale), and, on that basis, to develop regulations, rules and guidelines that do not necessarily give a competitive advantage to online companies over their offline counterparts but allow those companies to continue to innovate and scale. For instance, the Central Bank of Nigeria requires that at least two credit bureaus be consulted before a loan is disbursed to a prospective borrower. According to the organization Enhancing Financial Innovation and Access, in the 12 months leading up to their 2018 survey, only 8.3 per cent of the adult population had borrowed funds through a bank or alternative formal channel. By inference, the credit bureau list is not as robust because not enough borrowers are listed there for the value proposition of a mandatory credit check to add value. In addition, credit checks cost money and when the amount being borrowed or lent is small ($5–$100) they add even less value. Digital companies use digital identities, artificial intelligence and data-mining technologies to build profiles of borrowing customers and attach credit scores to each customer. Defaulting borrowers can be blacklisted across lending platforms.

In the case of an urban mobility start-up, 15 State and local government licences are required to deploy each bike taxi. An unintended value proposition for driver recruitment is the acquisition of these licences on behalf of drivers. But when you think about it, why should you need 15 licences to deploy a bike taxi in a city? These companies have ambitions to deploy 10,000 bikes in the next few years: that is truly scaling up! That would mean acquiring 150,000 licences and permits every single year. In such circumstances, scaling, which is the unique value proposition of a technology company in a “mobile-first” continent, is very difficult.

Lack of skills and talent

The fourth constraining factor in our digital transformation is the lack of relevant skills and talent required to support and sustain a digital transformation. The majority of young Africans, upon whose heads the future of the continent lies, did not have early exposure to

digital technology and are not comfortable with it. Furthermore, our education systems are largely misaligned with the current needs of employers and the workforce.

Africa doesn't have enough software developers, network and communications engineers, data analysts and data scientists. The few that we do have are looking for the next opportunity to board a plane to Canada or Germany, or whichever country is the highest bidder for the world-class skills that they possess.

The solution to this shortage could be the complete transformation of the education system and a relentless focus on aligning the skills and competencies gained in formal education with workforce needs. We should, of course, undertake such measures, but let us be mindful that they constitute major transformative efforts in and of themselves, requiring an enormous amount of resource mobilization and deployment and time to manifest. I would suggest that we take certain short-term actions that would have an immediate impact. For example, we should promote and encourage software coding schools that close the gap between training and skills acquisition and employment. We should discontinue programmes that randomly train people to write programming code and instead establish more programmes that, first of all, find employers and then equip young Africans with the relevant tools and competencies to fill ICT-related vacancies at their companies.

So, how do we close the gap between the hype or the tangible potential for a digital transformation and the reality that confronts us?

The goal of universal access requires several billions of dollars to be invested in the expansion and improvement of digital infrastructure throughout Africa. African governments need to make it easier for both private and public capital to be deployed to finance the expansion of Internet and digital infrastructure. All African countries must have a coherent, well-articulated and documented broadband plan that provides the public and private sectors with clear guidelines and a road map to sector development and gives mobile network operators and other infrastructure providers the legal and regulatory certainty they need to promote investment. The plans must have clear targets and accountabilities, as well as clear frameworks for monitoring and reporting progress. In addition, the plans must feed into regional and continent-wide digital infrastructure plans that promote fast and high-quality connectivity between countries to support our regional and continent-wide aspirations. This requires planning, collaboration and execution among governments.

According to research by the Alliance for Affordable Internet, the cost of an Internet connection is determined by competition, the geographic attributes of a country and country policy. The Alliance has identified a number of good policy practices for countries to follow to achieve the global affordability target. They include evidence-based regulatory decision-making, transparent benchmarks for quality of service, clarity on infrastructure-sharing rules, effective use of universal access funds, increased investment in public access solutions and a competitive mobile telecommunications market. In the 61 low- to middle-income countries that were included in the 2018 affordability report, there was a clear link between policy advocacy of this kind and the cost of an Internet connection.

With regard to enabling relevant policy and regulation to support companies that are facilitating the digital transformation, Tunisia's Start-Up Act is a good example.[6] The Act provides for 20 measures directed towards

6 Daniel Mpala, "Here are the 20 measures the Tunisia Startup Act aims to promote", Ventureburn, 29 May 2018.

encouraging entrepreneurship, making it easier to start and end businesses and to access funds and international markets. While this initiative is not wholly focused on technology start-ups, it does represent a clear case of a Government that has made an attempt to understand the technology ecosystem and that is now using policy and regulation to accelerate the journey towards digital transformation.

Nowhere is it more critical to close the gap between our current reality and our digital future than in the area of the skills and talent required to function in, support and sustain a digital transformation. While the quality of education varies widely across the continent, there is some uniformity in the extent and quality of science, technology, engineering and mathematics (STEM) skills across the board: it is uniformly low.

Africa needs to prioritize the funding of secondary and higher learning institutions that focus on the development of STEM skills and ensure that the curricula of STEM courses are aligned with the needs of companies in the market. How about addressing the low level of interest in STEM subjects by incentivizing the teaching and learning of STEM subjects more than most other subjects or by developing technology clusters that are less about the real estate and more about concentrating ICT resources in ways that enable collaboration and harness scale economies to drive learning and innovation?

The interesting thing is that Africa is not alone in having a shortage of engineering talent to power a digital economy; there is a severe shortage of engineering talent worldwide and the global demand for software engineers exceeds the supply. It's easy to understand why. In an op-ed for *The Wall Street Journal* entitled "Why software is eating the world", Marc Andreessen, founder and partner of one of the most successful venture capital firms in the world, pointed out that the world's largest bookstore (Amazon), video provider (Netflix), recruiter (LinkedIn) and music companies (Apple, Pandora and Spotify) were software companies and that old-economy stalwarts such as Walmart and FedEx used software to drive their business.

Africa's abundant supply of young, trainable citizens could give us a competitive advantage here. China became the manufacturing hub of the world through deliberate government policy and cheap labour; could not Africa be a net supplier of technology talent to the world through deliberate government policies that leverage the youthful population and youth bulge? Perhaps some back-of-the-envelope arithmetic would help drive the point home. There are 1 billion Africans and the continent's median age is 19.4 years; both these facts suggest there is a larger demographic pool of potential STEM students, and eventually professionals, in Africa than in most other continents.

E-government

There is no better way for governments to support, facilitate and hasten a digital transformation than by delivering services to and engaging with citizens online. There are a number of collateral benefits to be enjoyed from such efforts, including accurate and efficient delivery of government services, reduced corruption and revenue leakages, increased inclusion and strengthened support for national security interests. In implementing e-government services, African governments could focus first on the low-hanging fruits, such as enabling online payments for services; the payment infrastructure in many African countries already allows this, even when the service is delivered offline. They could then move on to the delivery of more qualitative services, such as company registration and tax filing, that deliver the transparency and efficiency that both Governments and their citizens crave. The provision of e-government services requires

all citizens to have a digital identity. National identity projects that include some form of digital identification are now a necessary requirement for a digital transformation. In that regard, India recently surpassed the 1 billion mark, meaning that almost every Indian has a national identification number and is known to and recognized by the Government. African governments must work to provide digital identities to all their citizens in order to enable us to function in a digital world.

In conclusion, whether the digital transformation of Africa is hype or reality depends on a number of factors, including the following:

- How willing policymakers are to migrate to policies and innovative regulations that favour online business, and the reality that we will increasingly live our lives online.
- How well governments, development institutions and the private sector collaborate to jointly finance the digital infrastructure required for digital transformation.
- Our ability to translate the bulging youth demographic into a robust and formidable technology workforce that can serve not only Africa but the rest of the world.
- Governments' willingness to transition from a government-centred to a citizen-centred world in which citizens are equipped and supported to pursue their dreams and aspirations in the twenty-first century, an era in which economic power is closely correlated to technological capability.

Digitalization, entrepreneurship and inclusiveness

Bineswaree Bolaky

Digitalization: a force for inclusiveness or exclusion

Entrepreneurship has been recognized as a key ingredient of development in several United Nations General Assembly resolutions. Two targets of the Sustainable Development Goals relate to entrepreneurship: target 4.4 and target 8.3. African countries such as Rwanda have designated the fostering of productive entrepreneurship[1] as an important pillar of their socioeconomic transformation to achieve their respective long-term Vision 2020 development frameworks. Entrepreneurs and small and medium-sized enterprises are and should be the backbone of private sector development and the drivers of capital formation and inclusive structural transformation in Africa.

The present think piece argues that the impact of increased digitalization[2] on inclusiveness and human rights in Africa is contingent on its separate effects on national entrepreneurship and international trade, and the interaction between the two. For instance, digital trade[3] can either support or undermine national entrepreneurship in Africa, with repercussions on national incomes, jobs and inclusiveness (see figure IV). Determining how to leverage digitalization and digital trade to foster productive entrepreneurship in Africa is key to the promotion of inclusiveness on the continent.

Digitalization can either be a lever for greater inclusiveness or a factor resulting in greater exclusion in society. The goals on inclusiveness of the 2030 Agenda for Sustainable Development cannot be achieved without taking into account the profound transformation the world is undergoing as a result of rapid and disruptive technological change.

On the one hand, digitalization can open up entrepreneurship and employment opportunities in new economic sectors and activities in African countries – for example, by extending regional value chains, creating new digitally-based activities, enabling more women and young people to engage in self-employment and improving the efficiency of the service sector – provided Africa engages in digital infrastructure development and secures the necessary human capital and skills to harness new digital technologies.[4] On the other hand,

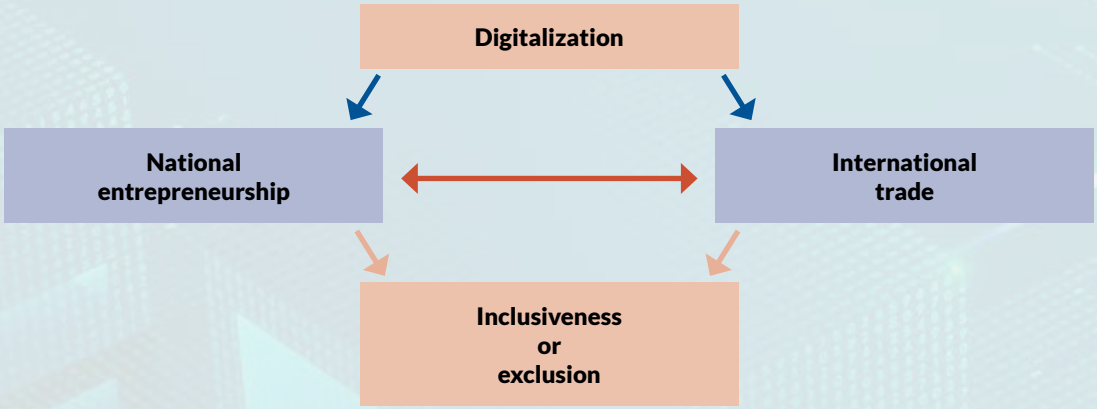
1 Productive entrepreneurship, as opposed to unproductive or destructive entrepreneurship, refers to entrepreneurship directed at productive activities that enhance economic performance.

2 According to the definition endorsed by the Economic Commission for Africa, the Office of the United Nations High Commissioner for Human Rights and the Friedrich-Ebert-Stiftung, "digitalization" refers to the use of digital technologies to facilitate businesses. It also refers to the emergence of relatively new technologies that form part of the fourth industrial revolution, including robotics and automation, artificial intelligence, nanotechnology, big data analytics, additive manufacturing and three-dimensional printing, and the industrial Internet of things.

3 According to González and Jouanjean (2017), digital trade "encompasses digitally enabled transactions in trade in goods and services which can be either digitally or physically delivered involving consumers, firms and governments" (Javier López González and Marie-Agnes Jouanjean, "Digital trade: developing a framework for analysis", Organization for Economic Cooperation and Development (OECD) Trade Policy Paper, No. 205 (Paris, OECD Publishing, 2017).

4 See also, in the present publication, Karishma Banga and Dirk Willem te Velde, "Digitalization: opportunities and risks for labour in Africa".

Figure IV
Digitalization: a force for inclusiveness or exclusion



Source: Author.

digitalization and the advance of digital transnationals and transnational digital platform businesses, matched by network-enabled economies of scale, has increased monopoly powers, erected higher barriers against the entry of new firms, diminished market contestability and created winner-takes-all situations. These factors, if left unchecked, could preclude the emergence of nascent or potential industries in African countries, weaken local entrepreneurship, destroy jobs and worsen inequality, owing to, among other things, changes in the geography of production and foreign direct investment.

Digitalization will also affect the way that nations trade, displacing the traditional channels of international trade and pioneering new means of trade, especially in services. Examples may include the electronic transmission of digital files and digitally downloaded products. Digital trade, of which e-commerce is but a component, will grow in scope. Digital technologies such as distributed ledger (blockchain) and three-dimensional (3D) additive manufacturing are likely to alter modes and patterns of trade in the future. Digital technologies and digital trade will have an impact on inclusiveness on their own, but also as a result of their knock-on effects on entrepreneurship.

For example, the emergence of international platform oligopolies, and the hitherto limited emergence of regional and national marketing platforms in Africa, coupled with the absence of regulations on national data ownership,[5] risks tilting the gains of e-commerce severely towards a few big international companies and turning African nations into a society of consumers. This will be even more so if the continent fails to successfully industrialize and fails to build digital domestic productive capacities, such as digital entrepreneurial and industrial capacities. The advent of the African Continental Free Trade Area (ACFTA) could facilitate market access to the region for international e-commerce companies, thereby undermining local industrial development, or, on the contrary, it could be a positive force for the growth of national e-commerce companies. The final outcome depends critically on the ability of the continent to strengthen local and regional entrepreneurship. Digitalization has to be harnessed both as an instrument for fostering competitiveness among

5 *Trade and Development Report 2018: Power, Platforms and the Free Trade Delusion* (United Nations publication, Sales No. E.18.II.D.7).

African enterprises and for fostering entrepreneurship.

Two important factors that are often missing in the discourse relate to (a) the state of entrepreneurship in Africa and whether deliberate actions will be undertaken by African countries to harness digitalization to strengthen domestic entrepreneurship and (b) how African entrepreneurship will be affected by and respond to growing digital trade. These factors are analysed in brief below.

Harnessing digitalization to strengthen domestic entrepreneurship in Africa

In African countries, the challenges faced in supporting entrepreneurship development in an age of advancing digitalization, though manifold, fall into two main categories: first, supporting the emergence of opportunity-driven entrepreneurship in the formal sector and ensuring the long-term viability of emerging enterprises, and second, addressing the barriers to the increased use of digitalization in opportunity-driven enterprises.

African countries will have to address the barriers to digitalization in their economies and ensure the effective utilization of digitalization by businesses in order to support the emergence and survival of opportunity-driven enterprises.[6] Whether digitalization serves the purpose of promoting inclusiveness will depend on the capacity of African countries to not only foster entrepreneurship but also to ensure increased digitalization of entrepreneurship.

Entrepreneurship in Africa tends to be marked by low survival rates, symptomatic of a deep competitiveness problem whose origins are manifold. Digitalization, such as the increased use of information and communications technologies, could be a way to address a part of the competitiveness challenge faced by enterprises in Africa. The survival of start-ups in Africa and their subsequent expansion, necessary for the creation of decent jobs, is linked to their ability to compete in global, regional and national markets in relation to imported products and locally present subsidiaries of foreign companies. There is a "missing middle" problem among enterprises in Africa: they find it hard to expand, owing to barriers that compromise their ability to be competitive (for example, infrastructure deficits). Harnessing digitalization to increase industrial competitiveness could prove to be a game changer for the continent, with positive spillover effects on indigenous innovation, manufacturing competitiveness and firm size. This will require the integration of digitalization into policies regulating industry, the development of micro-, small and medium-sized enterprises, and entrepreneurship, as well as within business ecosystems.

African countries will need to address several hurdles to digitalization while concurrently addressing the barriers to formal, opportunity-driven entrepreneurship in the industrial sector.

Such hurdles include increasing investments in hard digital and non-digital infrastructure,[7] investing in reform of the education system in line with the needs of an advancing global digital economy (fostering an education system that emphasizes problem-solving skills, creativity, teamwork and critical thinking), investing in national skills and vocational learning systems that are able to equip a growing young population with the necessary aptitudes to

6 See *The Least Developed Countries Report 2018: Entrepreneurship for Structural Transformation – Beyond Business as Usual* (United Nations publication, Sales No. E.18.II.D.6) for a discussion on the state of entrepreneurship in African least developed countries and an analysis of constraints. Opportunity-driven entrepreneurship refers to entrepreneurship driven by a wish to exploit a business opportunity and is considered as the most productive type of entrepreneurship, while necessity-driven entrepreneurship arises owing to the absence of better alternatives or job opportunities.

7 Digitalization cannot happen in Africa unless basic infrastructure deficits in energy, water, education, etc., are addressed.

exploit the opportunities of digitalization, and using digitalization to address specific barriers to entrepreneurship such as lack of access to finance, business facilitation, networking and training. For example, rural entrepreneurs can be given access to online training that is delivered to them remotely in digital learning centres set up under rural development policies. Digital payment systems can facilitate regional trade in Africa and open up opportunities for local cash-strapped entrepreneurs. Local innovation leading to the creation of digital payment apps and platforms could support trade and entrepreneurship. The digitization of business and customs regulations, as part of business and trade facilitation measures, can help to reduce the costs of doing business incurred by entrepreneurs. Linking national enterprises to international knowledge platforms on which local entrepreneurs can exchange information and seek advice from international entrepreneurs on digitization systems for firms should be encouraged. Easing access to financing for digital entrepreneurs, within acceleration programmes for digital start-ups, must also be considered.

The cost incurred by entrepreneurs to access and use digital technologies in Africa is a subject that merits attention in policymaking. Foreign direct investment promotion packages designed by African governments to attract international investment – for example, within joint venture arrangements between international firms and national small and medium-sized enterprises – should integrate considerations related to the transfer of digital technology and digital knowledge. For instance, tax breaks and non-fiscal incentives provided by governments to international investors should be tied to securing access to digital technologies and knowledge for local firms. The regulatory framework underpinning the governance of national digital service providers such as telecommunications companies should incentivize the provision of national small and medium-sized enterprises with affordable and reliable access to digital services such as Internet connectivity and mobile telephony.

The future of entrepreneurship in Africa in the context of increased digitalization and digital trade

Harnessing digitalization for entrepreneurship matters for inclusiveness in Africa. But this is only one side of the coin. What matters as well are the impacts of digitalization and digital trade on entrepreneurship.

How the advance of digitalization and digital trade can promote or hinder entrepreneurial opportunities in Africa is not clear-cut; uncertainty reigns, and under such conditions, it is best to consider different scenarios. Three potential long-term scenarios are considered below:

(a) First, a scenario of increased digital manufacturing[8] worldwide, including in Africa.

(b) Second, a scenario of increased concentration of powers in the global manufacturing sector, with Africa marginalized.

(c) Third, a scenario of growing e-commerce, both regionally and globally.

These three scenarios are not mutually exclusive, and reality could involve elements of all three.

Scenario 1.
African gains from digital manufacturing

The advance of digital manufacturing and digital trade carries potential implications for

8 Digital manufacturing refers to the digitalization of manufacturing products, processes, supply chains and services (University of Cambridge, Institute for Manufacturing, Digital Manufacturing, "What is digital manufacturing?". Available at www.ifm.eng.cam.ac.uk/).

the "missing middle" phenomenon in Africa, for firm size and survival rates, rates of innovation at the firm and industry levels, and the rate of creation of decent jobs, as well as for internationalization prospects for African small and medium-sized enterprises (including the prospect of insertion in global value chains) and the regional integration process.

The unfolding effects of digital manufacturing (such as additive manufacturing and 3D printing) and digital trade (such as e-commerce) on Africa will depend on a range of factors, which may include the following: how digitalization affects the location of production and innovation, policy responses of developing and developed countries, the extent of relocation and offshoring by global companies, access to financing to support Africa in building its digital soft and hard infrastructure, the governance of technology transfer of digital technologies, rules emerging from the World Trade Organization (WTO) on digital manufacturing and digital trade, and changes in global value chain governance.

Under the first scenario, the advent of 3D printers and additive manufacturing[9] could unleash local manufacturing and entrepreneurship opportunities in Africa and increase survival and expansion prospects for African firms. This has the potential to create more jobs, including more decent ones, by bringing a larger share of productive activity into the formal sphere. It has been argued that 3D printing could boost production of high-volume yet customized products of greater variety at lower costs, bringing production closer to consumers at the local level.[10] If African countries were to develop local capabilities to develop 3D printers and home-grown 3D technology, that could foster the development of small and medium-sized enterprises and family-owned businesses, create jobs and boost local manufacturing in Africa, with firms serving national and regional markets for a range of consumer goods. An increasing number of African small businesses could also participate in Africa-based regional value chains, supplying intermediate goods and parts rapidly, provided the physical and logistics infrastructure is improved. The home-grown development of 3D printers on the continent is not a pipe dream. In 2013, Togolese inventor Afate Gnikou, a member of WoeLab, built a 3D printer entirely from recycled electronic waste after attending a digital fabrication workshop in Lomé and later went on to win an award from the National Aeronautics and Space Administration of the United States of America. The WoeLab in Togo is a digital lab that promotes "low hi-tech", meaning that it promotes the development of high-tech products using what is locally available. Such ingenuity can be cultivated in Africa through the creation of incubators and accelerators that support digital entrepreneurship within national innovation systems and as part of the implementation of national entrepreneurship strategies.

While the effect of the spread of 3D printing and additive technology on the future of global manufacturing is difficult to predict, there are two factors likely to shape its implications for African manufacturing: first, how easily additive technologies pioneered in developed markets can be accessed by African entrepreneurs, and second, the ability of local entrepreneurs to develop home-grown additive technology based on locally available materials. Should the design and production of additive technologies become concentrated in the hands of a few, then international

9 "Additive manufacturing equipment such as 3D printers can manufacture even complex parts by 'printing' solid objects from undifferentiated powders, gels, liquids and metal powders directly from digital design files" (*The "New" Digital Economy and Development*, the United Nations Conference on Trade and Development (UNCTAD) Technical Notes on ICT for Development No. 8 (TN/UNCTAD/ICT4D/08)).

10 TN/UNCTAD/ICT4D/08.

rules regulating the export of 3D files to the developing world, including rules regarding intellectual property rights, will have determinant effects on the state of manufacturing in developing countries in Africa. African entrepreneurs will need to be able to import 3D technology at an affordable cost in order to engage in scaled production close to local markets.[11] In any case, government policy in African countries should, as of now, be geared towards supporting the building of local capacities to invent and design homegrown additive technologies that are based on local materials to satisfy a range of industrial and consumer needs at a high level of customization. Science, technology, engineering and mathematics (STEM) subjects need to be revalorized in African educational curricula at all educational levels and must be backed by appropriate investments and training of academic staff. Cooperation and development assistance arrangements between Africa and its development partners, such as China, India and the European Union (through, for example, the Africa-European Union Strategic Partnership and the Joint Africa-European Union Strategy), should integrate capacity-building assistance for Africans in the areas of digital technology, digital manufacturing and STEM.

Scenario 2.
Africa is on the fringe of the global digital manufacturing factory

Under the second scenario, developing countries may fail to catch up to the more advanced digital economies such that the manufacturing competitiveness gap widens between developed and developing countries, and global manufacturing is relocated closer to developed consumer markets, suppressing opportunities for African countries to participate in global value chains. Competing on the basis of lower labour costs alone will not be a viable industrial strategy for African countries. For African countries to develop their industrial capabilities in a viable and sustainable way, they will need to pursue regionally-oriented growth, tap into intraregional markets and accelerate regional integration in order to develop proximate markets for their products. Other sources of competitive advantage have to be sought, other than labour, and that could include developing niches of industrial excellence based on quality products, investing in branding and tapping into geographical indicators to add value to local products.

The structural transformation from agriculture to manufacturing may prove difficult for some and is likely to result in the service sector increasing its share of African gross domestic product. Digitalization can alter the "normal" stages of structural transformation in the sense that manufacturing may not be the optimal path to the creation of high-value-added activities in some African countries and therefore greater attention should be given to agriculture and services. The net effect is on the sectoral distribution of jobs; entrepreneurial and decent job opportunities are more likely to be developed in the agriculture and service sectors. Thus, entrepreneurship strategies must be complemented with rural and agriculture development policies and the development of high-value-added services. To the extent that a large proportion of women and vulnerable groups are engaged in the rural agricultural sector, such an approach could promote inclusiveness in African societies.

The policy implication of this second scenario is that African countries cannot afford to put all their "development eggs" in the "manufacturing basket" in the long run. Over the last 10 years or so, much of the attention on policy in Africa has been focused on industrialization. It has been argued that developing the

11 For a further discussion on the transfer of digital technology to African countries, see Jean Bertrand Azapmo, Technology transfer-related aspects of the global digital trade regime: implications for the right to development of countries in Africa" in the present publication.

manufacturing sector is a sine qua non condition for structural transformation and that no modern economy can embark on a path to high and sustained economic growth without developing its manufacturing capacity.[12] With the advent of digitalization, the validity of this paradigm has to be questioned. Digitalization can offer substantial opportunities for economies to experience structural change and develop high-value-added activities both in the agriculture and the service sectors; the information and communications technology sector can itself be a stand-alone high-productivity sector. Digitalization also calls into question the viability of labour-intensive manufacturing in Africa, given that other regions can compensate for higher labour costs with digital competitive advantages, as Banga and te Velde argue in this publication. Commodity-based industrialization can offer greater comparative advantages to Africa than labour-based manufacturing, given Africa's rich natural endowments in primary commodities. The potential for harnessing such commodity reserves to develop regional value chains in manufacturing is yet to be fully exploited in Africa.

The potential of agriculture (including fisheries) remains largely untapped in Africa. Recently, the President of the African Development Bank has called for accelerating the application of technologies to agriculture in order to turn Africa into a leading agricultural power. How can digitalization increase agricultural production and productivity, that is, the harnessing of agricultural technology, in Africa? That is a question that needs to be asked more often in the discourse about African development. For instance, digital technologies can aid in monitoring African waters to guard against the pillaging of ocean-based resources such as fisheries; other digital technologies such as precision farming can help farmers to save on input use and improve growing techniques. Drones can assist farmers in monitoring outbreaks of pests and diseases and in mapping their fields. They can also help farmers gather data on land use to facilitate decision-making and enable the delivery of supplies to farmers in remote areas. National regulations may have to be amended to enable the use of certain types of digital technologies. For instance, drone-based precision agriculture requires the lifting of regulations on the use of airspace.

Scenario 3.
Africa becomes ready for e-commerce

Under the third scenario, emerging rules at WTO confer customs duty-free status on all digitally traded goods,[13] and this allows global digital giants to make significant inroads into national and regional African e-commerce markets, on an e-commerce-ready African continent.

This is more likely if African countries fail to build domestic entrepreneurship and productive capacities, fail to adopt and enforce national and regional regulations on the participation of foreign companies in their e-commerce platforms, and fail to enact national laws on the ownership of data by foreign digital companies. Whether e-commerce translates into a development and entrepreneurial opportunity for African countries, rather than serving as an enlarged tool for developed countries to gain access to Africa's soon-to-be-created continental market, crucially depends on Africa's coordinated institutional, regulatory and policy response to the e-commerce phenomenon and on the priority given to strengthening productive capacities

12 Adam Szirmai, *Industrialization as an Engine of Growth in Developing Countries, 1950–2005*, United Nations University-Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT) Working Paper Series, No. 10 (Maastricht, the Netherlands, United Nations University, Maastricht Economic and Social Research Institute on Innovation and Technology, 2009).

13 Representatives of African civil society, along with many least developed countries and developing countries, have raised objections to negotiations on global e-commerce rules.

and domestic entrepreneurship in such a response.

With the advent of ACFTA, e-commerce can only be a development opportunity on the continent if local productive and entrepreneurial capacities are built in a sustained manner to foster trade in goods "Made in Africa" rather than goods "Made in the rest of the world", and if laws and regulations are in place to ensure that African firms can participate in international e-commerce platforms as vendors while, at the same time, access to the African consumer market by international e-commerce platforms is taxed to secure revenues for African governments in need of resources to implement their development strategies. The gains from e-commerce are not automatic. For e-commerce to be a development catalyst in Africa, local productive capacities and entrepreneurship must be developed commensurately through structural transformation policies and entrepreneurship strategies and must be matched by debt management and prudent monetary policies that keep an eye on burgeoning consumer debt incurred in order to finance consumer spending. Failure to do so could further harm Africa's potential for structural transformation through industrialization.

Furthermore, Africa's domestic resource mobilization efforts should be supported by efforts to ensure that e-commerce transactions are taxed in order to allow the transfer of revenue from e-commerce operators, even if foreign-based, to national governments. Such efforts, however, must be undertaken in a manner that does not stifle local entrepreneurship. It calls for explicit, enforceable rules at the international level that allow national Governments to impose taxes on enterprises located outside their national tax jurisdictions, in cases where such enterprises are selling goods and services over the Internet that are delivered within their national territories. As tariff barriers tumble down across Africa with the advent of ACFTA, African Governments are likely to lose tariff revenues derived from conventional physical trade. If an increasing number of African imports take place digitally rather than physically, while, at the same time, no international e-commerce taxation system is in place and WTO rules exist that call for customs duty-free digital trade, such fiscal losses could be significant. The loss by African Governments of revenues derived from trade complicates their ability to finance development efforts. How to tax and regulate e-commerce in Africa as ACFTA gets under way is an issue that merits serious attention and calls for international cooperation involving the leading global e-commerce platforms.

Building statistical capabilities for the monitoring and recording of digital imports (as opposed to physical imports) in Africa is an additional area of policy action. To tax e-commerce transactions, such transactions must be traced, monitored and recorded, which requires the establishment of statistical systems that can measure and generate digital trade statistics. This may need to be facilitated by the issuance of digital identities at the individual (consumer) level and the firm (supplier) level, backed by national laws to protect consumer privacy.

How to ensure the business viability of national e-commerce companies in Africa, relative to large international e-commerce platforms, is yet another area of policy interest. The recent financial difficulties of national e-commerce platforms such as Efritin and Konga in Nigeria point to the necessity for African public policies to create an enabling environment for national e-commerce companies to thrive. Cooperation at the regional level is also needed, as the ACFTA gets under way, to facilitate the rise of continent-wide e-commerce platforms with economies of scale to match those of large-scale international competitors.

Policies for the future of entrepreneurship in Africa in an increasingly digitalized world

The advance of digitalization presents both challenges and opportunities to entrepreneurship in the twenty-first century, in particular in Africa. Many African countries have positioned entrepreneurship as an inclusive development strategy to address poverty reduction, promote job creation, empower women and youth and reduce income inequalities. But how will a growing digital economy and growing digital trade affect the entrepreneurial landscape in Africa? The answer is not clear-cut and depends on different potential scenarios; for instance, whether or not Africans build competitiveness in digital manufacturing and participate in digital trade as vendors rather than as mere consumers. However, irrespective of whichever scenario prevails, policies to support productive entrepreneurship in Africa are needed if digitalization is to be leveraged to promote economic development, inclusiveness and human rights. Such policies must be based on a holistic, strategic and forward-looking approach that takes into account the opportunities and challenges that could arise from digitalization and digital trade. African entrepreneurs should also harness digitalization to strengthen the competitiveness of their enterprises.

On the basis of the above analysis, the following 10-point policy message is proposed:

- Digitalization can be a double-edged sword for inclusiveness and human rights in Africa, but by fostering entrepreneurship and harnessing digitalization for entrepreneurship, African countries can turn digitalization into a force for greater inclusiveness.

- Digital technologies and digital trade will have an impact on inclusiveness on their own, but also through their effects on entrepreneurship.

- To turn it into an effective driver of inclusiveness, entrepreneurship needs to become increasingly formal, opportunity-driven and integrated into the implementation of industrial policies, and African entrepreneurs need to harness digitalization to enhance competitiveness.

- However, digitalization can affect the nature of structural transformation such that entrepreneurship opportunities in the agriculture and service sectors should not be neglected in favour of industry, in particular if African countries fail to break onto the global digital manufacturing stage.

- Government policy in African countries should, as of now, be geared towards supporting the building of local capacities to invent and design home-grown additive technologies that are based on local materials to satisfy a range of industrial and consumer needs at a high level of customization.

- Cooperation and development assistance arrangements between Africa and its development partners should integrate capacity-building assistance for Africans in the areas of digital technology, digital manufacturing and STEM.

- How can digitalization increase agricultural production and productivity in Africa? That is a question that needs to be asked more often in the discourse about African development. National regulations may have to be amended in order to enable the use of certain types of digital technologies.

- Digital trade will shape the entrepreneurial landscape in Africa. The gains from e-commerce are not automatic; they must be secured by building local entrepreneurial and productive capacities.

- The effects of e-commerce on domestic resource mobilization in Africa must be taken into account and an international governance framework, based on international cooperation, must be put in place to facilitate the taxation of international e-commerce transactions involving goods or services destined for Africa.

- Financing to improve access to digital technologies and digital infrastructure should be given greater attention than it has received so far. Mobilizing resources for Africa's digitalization should be on the agenda.

In terms of policy recommendations, the following are proposed:

- A better understanding of the constraints and opportunities of digitalization in relation to African entrepreneurship is needed; for example, overcoming one constraint may involve addressing business facilitation for digital businesses.

- Research on digital technology and its applications should be supported in Africa, and such support could involve the establishment of regional and national digital research and learning centres.

- Forums on digitally-based entrepreneurship should be set up to foster public-private dialogue and collaboration, e-business networks and support groups.

Human rights dimensions of digital trade

Gabriella Razzano

Introduction

Digital trade and the digital economy allude to a digital world – the world that will provide the context for the African Continental Free Trade Area (ACFTA). Such a seemingly new world will need rules and regulations, and human rights are the key kaleidoscope for understanding the parameters of what should or should not be done. And although new contexts may require a degree of uniqueness in terms of the controls chosen, the universality of human rights will continue to offer highly relevant and useful perspectives for digital trade. This is not least of all because of its ability to keep our focus on human-centred and social considerations when addressing economic questions. This is of course predicated on an understanding of human rights that views them not primarily as a juridical matter but as related to the dignity of individuals and the respect and protection necessary for vulnerable individuals.[1] It provides us with normative guidelines that are enforceable.

The greatest commodity of this digital age is data. As data and information become a central mechanism for profit, their already significant social and political value increases as well. This value makes it a significant ground for contestation. Given the information context, how does the right of access to information (and its counterpart and corollary, the right to privacy) provide us with greater insight into digital trade in Africa? Can this framework help us to ensure that new opportunities for growth resulting from trade, including digital trade, do not detract from human development? If common economic goals have the potential to divert us from the ambitions of the 2030 Agenda for Sustainable Development,[2] justiciable human rights may assist in driving us back towards them.

Introductory human rights concepts

The value of human rights discourse as a mechanism for understanding digital trade is both mechanistic and substantive in nature. In other words, understanding the way human rights are implemented provides value for interpreting the digital trade environment, as does the substance of the rights themselves.

The digital world and digital space present complex challenges arising from competing interests and concerns. Human rights discourse provides us with distinct tools in jurisprudence for considering in practical terms how these competing rights and interests can be balanced. There are theoretical debates that underpin much of the work on "competing" rights in jurisprudence.[3] However, at the core of those debates is an understanding

1 Gregory J. Walters, *Human Rights in an Information Age: A Philosophical Analysis* (Toronto, University of Toronto Press, 2001), p. 35.

2 This would, of course, be taking a simplistic view of the economic goal of growth as not being influenced by consideration of policy factors.

3 There is significant jurisprudential debate on the nature of rights as "trumps" and the relevance of balancing, such as in the work of the famous theorists Finnis, Habermas, Raz and Dworkin. The scope of the present think piece does not allow us to acknowledge the interesting particularities of these debates, which is why, for the purposes of this piece, proportionality and balancing are considered as similar concepts rather than competing ones.

that underlying values make perceived conflicts reconcilable. Balancing rights is a more nuanced approach than choosing one right over another, providing a flexibility that is well suited to engaging in the complex questions digital contexts can raise.

In turn, discussions on the obligations between States and citizens often reveal their inadequacy when confronting economic questions, given the increasing social, political and economic power of the private sector. Human rights instruments traditionally see the creation of negative and positive obligations on States in relation to infringements of rights.[4] However, advances in the understanding of human rights soon led to views on the horizontal application of rights between persons and juridical persons, such as:

> [It] can thus be argued that it is the commitment of this legal order to ensure that those rights are effectively protected regardless of whether the source of their violation is private or public conduct.[5]

Human rights discourse allows for consideration of the horizontal application of obligations, the balance of which is pertinent when considering the monopolistic power of large data holders, in particular within the digital economy.[6]

The United Nations, in turn, has tried to more directly strengthen the role of business in the enforcement and protection of human rights through the creation of the Guiding Principles on Business and Human Rights. However, those Principles still focus on the duty of host States to act against human rights violations by companies, rather than being satisfactorily positive.[7] African human rights jurisprudence has widely adopted dictates on the responsibilities of businesses, and in many ways may be able to facilitate implementation of the Principles more directly through the African Union than has been possible otherwise so far.[8]

Furthermore, human rights give us a way to take normative issues to trial. In the face of economic questions, the ability to bring human-centred concerns before the courts is particularly important for attempting to protect citizens from unfair treatment. Human rights oblige not just protection, but promotion as well, thus helping to ensure that new regulations for this new world place human concerns at the centre.9 As both State and private powers are able to intrude further than ever before into the privacy of citizens, increasing the provision of effective remedies to citizens for such violations will become a priority.[10]

A central concern arising from any attempt to regulate the non-physical, digital world is the manner in which jurisdictions are rendered superfluous. Such challenges are born of the nature of the Internet itself, and also of the nature of data flows, but are also due to the extended remit of multinational and transnational corporations and the growing mobility

4 Universal Declaration of Human Rights (General Assembly resolution 217 A (III)).

5 Joanna Krzeminska-Vamvaka, *"Horizontal Effect of Fundamental Rights and Freedoms: Much Ado about Nothing? German, Polish and EU Theories Compared after Viking Line"*, Jean Monnet Working Paper 11/09 (New York, New York University School of Law, 2009).

6 Jennifer M. Paulson, "Cyber insecurity: constitutional rights in the digital era", *Southern Illinois University Law Journal*, vol. 41, No. 2 (2017), p. 262.

7 Council of Europe, Commissioner for Human Rights, *The Rule of Law on the Internet and in the Wider Digital World*, Issue paper (Strasbourg, 2014).

8 Osuntogun Abiodun Jacob, "Global commerce and human rights: towards an African legal framework for corporate human rights responsibility and accountability", PhD thesis, School of Law at the University of Witwatersrand, South Africa, p. 244.

9 Commission on Human and Peoples Rights, *Communication 155/96: Social and Economic Rights Action Centre v. Nigeria (Ogoni case)*, 27 October 2001.

10 Report of the United Nations High Commissioner for Human Rights on the right to privacy in the digital age, (HRC/27/37).

of persons (which is, of course, incredibly pertinent in considering the context of ACFTA). The human rights discourse already addresses the challenges of the universality of normative standards, for instance through multilateral mechanisms such as the United Nations and the African Union. Human rights instruments attempt to encapsulate universal principles aimed at influencing the domestic application of human rights. For example, article 1 of the African Charter on Human and Peoples' Rights holds that:

> The Member States of the Organization of African Unity,[11] parties to the present Charter shall recognize the rights, duties and freedoms enshrined in the Charter and shall undertake to adopt legislative or other measures to give effect to them.

Thus, the human rights context provides best practices for developing and applying the legal and policy texts relevant to ACFTA, in particular through the prioritization of multi-stakeholder engagement.

There are also attempts to create, or foster, international regulation and rulemaking. Of relevance for digital trade (outside, of course, the specific sectoral relevance of the World Trade Organization), are multi-stakeholder initiatives such as the World Summit on the Information Society, the Internet Corporation for Assigned Names and Numbers and the Internet Governance Forum.[12] Piecemeal regulation of the Internet is a consequence not only of broader international ad hoc regulation, but also of the rapid developments in technology, which lawmakers struggle to keep up with. An example of a regional response is the multi-stakeholder development of the African Declaration on Internet Rights and Freedoms,[13] which has sought to provide regionally specific principles to guide governance.

Specific rights and digital trade

Right of access to information

The right of access to information, and data, owned or held by the State is central to democracy, but also to the good governance and adequate determination of risk that trade requires. In many jurisdictions, this right also extends, with some limitations, to information held by private sector actors. The Model Law on Access to Information for Africa provides clearly within its general principles that:

> (a) Every person has the right to access information of public bodies and relevant private bodies expeditiously and inexpensively.
>
> (b) Every person has the right to access information of private bodies that may assist in the exercise or protection of any right expeditiously and inexpensively.

In turn, the protection and advancement of access to information is founded on a variety of necessary principles. For instance, the African Union Declaration of Principles on Freedom of Expression in Africa states, in its Principle IV:

> 1. Public bodies hold information not for themselves but as custodians of the public good and everyone has a right to access this information, subject only to clearly defined rules established by law.

11 Now referred to as the African Union.

12 Nicola Lucchi, "Internet content governance and human rights", *Vanderbilt Journal of Entertainment and Technology Law*, vol. 17, No. 4 (2014), p. 851.

13 The African Declaration on Internet Rights and Freedoms is a pan-African initiative to promote human rights standards and principles of openness in Internet policy formulation and implementation on the continent. The Declaration is intended to elaborate on the principles that are necessary to uphold human and individual rights on the Internet, and to cultivate an Internet environment that can best meet Africa's social and economic development needs and goals, while recognizing and leveraging existing African human rights documents. Its development was driven largely by civil society, and it stands as an important advocacy tool.

2. The right to information shall be guaranteed by law in accordance with the following principles:

   - Everyone has the right to access information held by public bodies;
   - Everyone has the right to access information held by private bodies which is necessary for the exercise or protection of any right;
   - Any refusal to disclose information shall be subject to appeal to an independent body and/or the courts;
   - Public bodies shall be required, even in the absence of a request, actively to publish important information of significant public interest;
   - No one shall be subject to any sanction for releasing in good faith information on wrongdoing, or that which would disclose a serious threat to health, safety or the environment, save where the imposition of sanctions serves a legitimate interest and is necessary in a democratic society;
   - Secrecy laws shall be amended as necessary to comply with freedom of information principles.

3. Everyone has the right to access and update or otherwise correct their personal information, whether it is held by public or by private bodies.

The 2030 Agenda for Sustainable Development places access to information and the pursuit of transparency at the centre of many of its Sustainable Development Goals, while also envisioning the Internet as playing a vital role in the achievement of those goals.[14] Within that context, the following has been noted:

> It is self-evident that such access to information is not only a target – an aspiration and an outcome, in other words, an "end" of development. It is also a means towards achieving all the other targets of development, and not least those on justice, health, education, environment and gender.[15]

And because the Internet has become so central to what we consider to be the source of information, and what we consider to be digital, it provides an important context for understanding the modern emergence of the right to access information. In that regard, in 1999, the late Kofi Annan noted the following:

> Three days from now, the world's population will pass the 6 billion mark. Five out of those 6 billion live in developing countries. For many of them, the great scientific and technical achievements of our era might as well be taking place on another planet.
>
> These people lack many things: jobs, shelter, food, health care and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these deprivations, and may indeed reduce the chances of finding remedies to them.
>
> ...

14 These connections were well foreshadowed by the work of the World Summit on the Information Society, held in Geneva from 10 to 12 December 2003 (first phase), for instance in the Declaration of Principles – Building the Information Society: a global challenge in the new Millennium (see A/C.2/59/3, annex).

15 Guy Berger, Director for Freedom of Expression and Media Development at UNESCO, "Anders Chydenius: Press Freedom 250 years", Opening remarks at the 250th anniversary year of Nordic "principle of publicity", 4 December 2015. Available at https://en.unesco.org/.

> ... The capacity to receive, download and share information through electronic networks, the freedom to communicate freely across national boundaries these must become realities for all people.[16]

While there are some justifiable limits to rights, the Joint Declaration on Freedom of Expression and the Internet, importantly endorsed by the special rapporteurs and representatives on freedom of expression of the United Nations, the Organization for Security and Cooperation in Europe, the Organization of American States and the African Commission on Human and Peoples' rights, stated expressly that:

> ... [c]utting off access to the Internet, or parts of the Internet, for whole populations or segments of the public (shutting off the Internet) can never be justified, including on public order or national security grounds. The same applies to slowdowns imposed on the Internet or parts of the Internet.[17]

Internet shutdowns in the African region are not uncommon. The KeepItOn campaign reports that the African region is the second most affected region in terms of Internet shutdowns, with the Government of Sudan shutting down social media access in the country in the face of protests as recently as December 2018. This is estimated to have resulted in an economic cost in that country of $15 million.[18] Considerations of the human rights components of access will have an impact not only on who can engage in digital trade, but also on how that trade will occur. This is because the Internet has become a key facilitator for the transfer of data flows that fundamentally drive trade.[19] Any interference in access directly threatens the foundation of sound trading (in that connection, the centrality of open government data to digital trade is considered in more detail below).

In addition to the challenges to accessing information that stem from physical or infrastructure restrictions are the challenges presented by inequalities in digital literacy, which extend to access, skills, uses and benefits in relation to Internet communication and technology.[20] These areas of expression of the digital divide impact potential broad participation in digital trade opportunities; as research in South Africa has shown, the lack of digital literacy sits alongside the lack of Internet-enabled devices as the key reasons why people are not online.[21] Thus, improving physical access is not enough; interventions must extend to lowering education and literacy barriers that can also impede access.

There are thus two broad components of access to information: preservation and promotion of access mechanisms, and preservation and promotion of the information itself. Immensely important within the above list of principles excerpted from the African Union Declaration of Principles on Freedom of Expression in Africa is the acknowledgment that bodies must actively publish information; this requirement acknowledges that the right to

16 United Nations, "Secretary-General, Kofi Annan, addresses World Telecommunication Exhibition and Forum", press release (SG/SM/7164), October 1999.

17 Frank La Rue and others, "Joint declaration on freedom of expression and the Internet", Article 19, 22 May 2011. Available at www.article19.org/resources.php/resource/3313/en/.

18 Netblocks, "Study shows extent of Sudan Internet disruptions amid demonstrations", 21 December 2018.

19 Joshua Paul Meltzer,"The Internet, cross-border data flows and international trade", *Asia and the Pacific Policy Studies*, vol. 2, No. 1 (January 2015). Available at https://doi.org/10.1002/app5.60 (accessed 11.06.19).

20 Ellen Johanna Helsper, "Inequalities in digital literacy: definitions, measurements, explanations and policy implications", in *ICT Households 2015: Survey on the Use of Information and Communication Technologies in Brazilian Households* (Sao Paulo, Brazilian Internet Steering Committee, 2016).

21 Onkokame Mothobiand and Alison Gillwald, "Lagging ICT adoption in SA reflects social and economic inequalities", Policy Brief No. 2, Research ICT Africa, July 2018.

access information cannot be realized only on request. It is this understanding that gives true substance to the creation of a presumption of openness and that underscores the necessity for the proactive disclosure of information through open data.

The advancement of open government data has a direct bearing on the advancement of digital trade, largely by creating an environment conducive to sound trade and business. Investment (foreign and otherwise) is encouraged by the strength of good governance, to which open government data contributes significantly. It has been shown that more accurate and frequent disclosure of macroeconomic open government data allows countries to enjoy a statistically significant decrease in borrowing costs (on average an 11 per cent reduction in credit spreads).[22]

Much of trade negotiation, and business negotiation, centres on access to accurate information to assess risk. Furthermore, information asymmetry (where one party has greater access to information than another) negatively impacts the fairness of negotiations, which is of particular importance for Africa given historical exploitations in contracting.[23] One conspicuous category of risk that can be mitigated by open government data – thus encouraging trade – is corruption, particularly within the procurement context.[24] By ensuring transparency, individuals and agencies can be held to account for irregular or corrupt expenditures. In turn, this transparency disincentivizes the commission of future acts of corruption (and the attendant direct costs of corruption). Increasing the availability of open government data also facilitates increased access to different procurement systems, which in turn facilitates market entry for a broad range of commercial actors.[25]

Right to privacy

The right to personal privacy provides additional context for understanding the threats and opportunities presented by data. The concept of personal privacy considers an individual's personal life as an area of sanctity, worthy of rights protection. The Universal Declaration of Human Rights states, in its article 12:

> No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.

There is a strong link between the private space and the person. In the digital age, the right to privacy must be extended to include the protection of personal data, which should include biometric data. Interestingly, the right to personal privacy was not expressly included in the African Charter on Human and Peoples' Rights, although it is often protected at the national level. However, several African countries, including Ghana, Nigeria and Tunisia, have specifically recognized United Nations Human Rights Council resolution 28/16, on the right to privacy in the digital age, which, pursuant to General Assembly resolution 68/167 and other related resolutions, provides the Special Rapporteur with the power to monitor and raise awareness of digital privacy issues.[26] The resolution was a response to the perceived increase in use by States of

22 Borce Trenovski, "Fiscal transparency, accountability and institutional performances as a foundation of inclusive and sustainable growth in Macedonia" (2016).

23 Thorhildur Jetzek, Michael Avitaland and Niels Bjorn-Andersen, "Generating value from open government data", in *Reshaping Society Through Information Systems Design: International Conference on Information Systems*, vol. 2, Association for Information Systems (Milano, 2013).

24 Dieter Zinnbauer, "Open government – open for business?, Open Government Partnership, 15 August 2018.

25 Ibid.

26 A/HRC/RES/28/16.

technology for the surveillance of citizens and the interception of personal communications.

The Internet provides the capacity to transfer huge amounts of data, but blanket collection of data also makes the interception of data easier. People also generate significant amounts of personal data, constantly:

> Remember that every transaction you make, every site you visit on the Internet, leaves traces. These "electronic tracks" can be used, without your knowledge, to build a profile of what sort of person you are and your interest.[27]

The term "metadata" has become an important buzzword in the field of information and communications technology; it is probably most easily defined as data about data. Metadata are the packets of information that accompany a piece of data; they can help to identify the source of the data and can thus expose a person's private information if collected. While Edward Snowden alerted the world to the mass surveillance by the United States of civilian data, many other countries also appear to be guilty of such surveillance. Many countries have laws that allow for justifiable surveillance that intrudes on the privacy of citizens; however, domestic regulations on the interception of communications have often been abused beyond the scope of what is considered justifiable. For instance, an American citizen of Ethiopian descent sued the Government of Ethiopia in 2014 for violations after realizing he was being surveilled.[28] African Governments have also participated in mass surveillance, in addition to the United States, with several States cited as having procured mass-surveillance technologies from the popular German producer Trovicor.[29] The Government of Egypt has frequently been outed for carrying out mass surveillance of social media communications through its Social Networks Security Hazard Monitoring Operation.

Balancing the right to personal privacy with the State's pursuit of national security has become a battleground of profound importance for human rights jurisprudence.[30] In spite of the significantly increased capacity of States (and the private sector as willing or unwilling conspirator) to intrude on personal privacy, the Special Rapporteur on the right to privacy has noted that more than 80 per cent of United Nations Member States do not have any law that "... protects privacy by adequately and comprehensively overseeing and regulating the use of domestic surveillance".[31] Not only do we see the importance of balance, but the role and responsibility of private actors again comes to the fore.

Right to equality and non-discrimination

The right to equality can be understood to include the right to net neutrality. Net neutrality is often considered to be a specific threat to a constructive digital trade environment.[32] Net neutrality is a concept which proposes that network owners should treat all data equally.

27 Council of Europe recommendation No. R (99) 5 of the Committee of Ministers to member States for the protection of privacy of individuals on the Internet: Guidelines for the protection of individuals with regard to the collection and processing of personal data on information highways, adopted by the Committee of Ministers on 23 February 1999, appendix, part II, para. 2.

28 Electronic Frontier Foundation, American sues Ethiopian Government for spyware infection: months of electronic espionage put American citizen and family at risk, press release, 18 February 2014.

29 Trevor Timm, "Spy tech companies and their authoritarian customers, part II: Trovicor and Area SpA", Electronic Frontier Foundation, 21 February 2012.

30 Open Society Foundations and Open Society Justice Initiative, *Global Principles on National Security and the Right to Information (Tshwane Principles)* (Tshwane, South Africa, 2003).

31 A/HRC/37/62, para. 22.

32 Dan Ciuriakand and Maria Ptashkina, *The Digital Transformation and the Transformation of International Trade*, RTA Exchange Series Papers (Geneva, International Centre for Trade and Sustainable Development and New York, Inter-American Development Bank, 2018).

In other words, network providers should not interfere with the prioritization of data being transmitted over the Internet. This concept is incredibly significant for the African continent, although it is often spoken about in the context of the United States, owing to the recent controversy over Federal Communications Commission regulations that received significant citizen pushback.[33] This is because one of the areas in which telecommunications companies have a vested interest in limiting data is voice over Internet protocol services, which may compete with their traditional telephone services.[34] In Africa, voice over Internet protocol technology is of increasing relevance to African users who, trying to avoid uncompetitive data pricing, rely on voice over Internet protocol services to communicate more cheaply.[35] Artificial interference by telecommunications companies impacts access to this cheaper communication method, and can also be used to hinder access to a broad range of content, as well as to hinder the development of commercial over-the-top services.

An important aspect of equality is fair competition (admittedly, an issue that is also given substantive strength from notions surrounding access to information). State monopolization of infrastructure can have a real impact on the digital trade environment. This was recognized in the Zimbabwean case of *Retrofit (Private Limited) v. Posts and Telecommunications and Another*,[36] which concerned the State's refusal to issue a licence to a company to operate a mobile cellular telephone service. Although, the Supreme Court of Zimbabwe ruled that the refusal had violated the applicant's freedom of expression, the case illustrates how State monopolies of infrastructure can affect citizens' right to communicate. In the example of Ethiopia, monopolization of the information and communications technology sector, coupled with policies limiting growth, have meant prohibitive costs, limits to access (only 0.5 per cent of the population have access to a fixed broadband connection) and slow connection speeds.[37] In 2008, research carried out in 17 African countries concluded that the almost uniformly high cost of communications services across the continent continued to inhibit the uptake of services and their usage by consumers.[38] Furthermore, the way the market is structured clearly impacts this cost; monopolies, even when permitted in the name of universal access, impact pricing.[39]

There is the right of equal access to the Internet, but in turn, the more substantive right to be treated equally in the context of the digital environment. Although this could be an area of investigation in and of itself, the African Declaration on Internet Rights and Freedoms states, for example, that:

> The rights of all people, without discrimination of any kind, to use the Internet as a vehicle for the exercise and enjoyment of their human rights, and for participation in social and cultural life, should be respected and protected.

The digital space presents particular challenges to substantive equality. For instance, an emerging area of concern is the manner

33 Sanja Kelly and others, Privatizing Censorship, Eroding Privacy: Freedom on the Net 2015 (Washington D.C., Freedom House, 2015), p. 12.

34 Ibid.

35 Research ICT Africa, ("Shift from just-voice services: African markets gearing for Internet", Policy Brief South Africa No. 2 (April 2014).

36 Supreme Court, Harare, *Retrofit (Private Limited) v. Posts and Telecommunications and Another*, Case No. 1995 (2) ZLR 199 (S), Judgment No. S-136-95 of 12 June and 29 August 1995.

37 Kelly and others, *Privatizing Censorship, Eroding Privacy*.

38 Alison Gillwald and Christoph Stork, *Towards Evidence-based ICT Policy and Regulation: ICT Access and Usage in Africa*, vol. 1, Policy Paper 2 (Cape Town, South Africa, Research ICT Africa, 2008), p. 31.

39 Ibid., p. 2.

in which algorithms for interpreting data collected by States to inform decision-making can reflect a bias that tends to punish the poor and oppressed, which is not helped by the fact that such algorithms are not open to view.[40] This opacity of decision-making matters for the lived experience of the vulnerable, but is also a reflection of the state of broader government transparency.[41] Algorithms, as a means of sorting and interpreting big data, will become increasingly relevant to all areas of life, including trade. Opacity will allow bias to thrive. These kinds of seemingly technological challenges actually point to a wider political challenge, which is how to create balance in the intervention of policy and law to protect the vulnerable, because, as Lessig[42] has noted:

> When government steps aside, it is not as if nothing takes its place. When government disappears, it is not as if paradise prevails. It's not as if private interests have no interests; as if private interests don't have ends they will then pursue. To push the anti-government button is not to teleport us to Eden. When the interests of government are gone, other interests take their place. Do we know what those interests are? And are we so certain they are anything better?

Conclusions and recommendations

The right of access to information, the right to privacy and the right to equality provide a profound basis for investigating the nature of digital trade in Africa. In that regard, information studies in particular provide value, as information and data have obviously been profoundly influenced by the Internet and its related infrastructure:

> The Internet has effectively returned more power to individuals with a radical redistribution of control of information flow and a completely new approach to how society operates.[43]

Attempting to delineate rights may be an artificial exercise, given that rights are mutually reinforcing, but each one provides its own set of standards and contexts to help us understand the rights and trade that will form the basis of ACFTA.

Human rights help us to focus on what the human consequences of State and private sector interventions might be in the new pursuits associated with digital trade. In the early utopian days of the Internet, many hoped it would be an unregulated space. But if human rights have shown us anything, it is that, for minorities and the vulnerable to be protected, intervention is inevitable. Digital trade is a new context to which our existing human rights paradigm adds richness and balance. It can benefit from the pre-existing African jurisprudence on access to information, privacy and equality as a source for understanding where balances may lie, and how they might happen.

Human rights discourse, given its ability to focus on the substantive and normative core of rights, allows us flexibility in debating complex social and economic problems. This flexibility creates a justiciable route for individuals, and States, to pursue social ends. As a peculiar space with peculiar vulnerabilities, there is no doubt that regulation of the digital realm will occur. The challenge in the future will be ensuring that sledgehammers are not used for what paintbrushes could deal with.

40 Lisa Wressell and Zobel, "Big data in education" (October 2018).
41 It is worth taking note of civil society interventions such as AlgorithmWatch, which seek to provide transparency on these issues.
42 Lawrence Lessig, *Code and other Laws of Cyberspace* (New York, Basic Books, 1999), p. 220.
43 Lucchi, "Internet content governance and human rights".

Policy recommendations

- Human rights provide both a normative and constructive framework for incorporating policy concerns into economic policies of relevance to ACFTA, as a necessary step in achieving the Sustainable Development Goals.
- The Guiding Principles on Business and Human Rights should be incorporated into and expanded upon by African Union mechanisms in order to impose reasonable obligations on the private actors that are central to facilitating or inhibiting digital trade.
- Multi-stakeholder engagement should be central in attempts to create a regulatory environment that respects human rights and advances ACFTA, and should include the leveraging of relevant pre-existing multi-stakeholder forums.
- Open access to government data should be encouraged and facilitated as a necessary component for a sound trade environment.
- A broad appreciation of the digital divide should ensure that policy interventions consider all sociopolitical and economic aspects that may impede access to digital technologies, digital infrastructure and digital literacy.
- Also in relation to the digital divide, data costs must facilitate broad access to digital technologies and digital infrastructure to encourage economic activity; competition in infrastructure is a necessary prerequisite for fair pricing.
- As an active step towards combating online discrimination that could negatively impact the trade environment, transparency must be encouraged in policy including at the level of algorithms.
- Regulatory or other intrusions into the privacy of individuals must be limited and justifiable in terms of African-driven human rights standards.

Digitalization: opportunities and risks for the workforce in Africa

Karishma Banga and Dirk Willem te Velde

Introduction

In recent years there has been a rapid rise in the use of digital technologies, such as artificial intelligence and robotics, which is significantly changing the landscape of manufacturing. This, in turn, is affecting employment opportunities and wages globally. This think piece explores the implications of digitalization for the right to work, in particular in the manufacturing sector, which has traditionally been used by developing economies for economic transformation and job creation. The piece argues that digitalization will have a significant impact on African labour markets, regardless of whether or not African countries actively engage in the digital economy. Although estimates of job losses in countries are mostly overstated, a persistent digital divide is likely to adversely affect employment in Africa. However, if done right, digitalization can also boost economic growth and offer new employment opportunities to those countries that stand ready to act.

Africa is already facing significant youth unemployment, with 30 million young people expected to enter the African labour market each year until 2030.[1] This problem will only be exacerbated if appropriate policies on digitalization are not developed. Understanding how the digital economy is affecting the right to work is the first step in ensuring that workers remain competitive and are able to find suitable and decent employment opportunities in the changing world of work. According to article 23 (1) of the Universal Declaration of Human Rights, everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment. Whether the digital economy will uphold the right to work forms a key question in the debate surrounding digitalization today.

On the one hand, the rapidly declining cost of capital in developed countries, coupled with rising wages in developing countries, is expected to increase the reshoring of manufacturing jobs from developing economies, while on the other hand, there is likely to be limited offshoring of manufacturing in the future. The production of digitally advanced goods will require good infrastructure, research and development, and skills at all stages of production, contributing to the concentration of future production in developed countries. There are also growing concerns regarding "jobless growth" in the digital era, whereby machines and algorithms generate higher growth but render humans both unemployed and unemployable, while also failing to improve wages, income and living standards. In the changing world of work, the failure of private employers to comply with basic labour standards can also amount to a violation of the right to work or of the right to just and favourable conditions of work.[2]

1 Marleen Dekker and Saskia Hollander, "Boosting youth employment in Africa: what works and why?" (The Hague, INCLUDE Secretariat, 2017).

2 Radhika Balakrishnan and Diane Elson, "Auditing economic policy in the light of obligations on economic and social rights", *Essex Human Rights Review*, vol. 5, No. 1 (July 2008).

If African economies manage to embrace digitalization and upskill their workforces, important employment opportunities can be realized through a virtuous cycle of productivity,export gains and the ability to attract future manufacturing production. Digitalization can lower the barriers to entry into the market, creating new job opportunities for women and small and medium-sized enterprises.

In addition to impacting employment levels, digitalization will also impact the nature of work and wage distribution; there is already evidence of changing occupational structures, a hollowing-out of the middle-skilled labour market, increasing skill mismatches and exploitation of the digital workforce.

In an increasingly digital era, it is therefore important to take urgent steps to safeguard the right to work by developing appropriate policies for education, training and targeted skills development, maximizing employment gains through the productivity benefits of digitalization, ensuring decent and inclusive work, and protecting the digital workforce against the rising precariousness of online work.

The structure of the present think piece is as follows: the following section discusses the pathways through which digitalization can affect the demand for labour in African countries; the third section examines how digitalization is changing the nature of work, affecting both traditional and online employment, including structure and wages; and the fourth section draws conclusions and offers policy suggestions on how African countries can deal with technological change and leverage digitalization to generate more productive jobs and ensure decent work for all.

Digitalization and the demand for workers

A few studies have observed a negative impact of automation on employment, including Frey and Osborne's 2013 study[3] of the United States of America labour market, which analysed the impact of computerization on 702 occupations and found that approximately 47 per cent of the jobs in the United States labour market were at high risk from automation. Across Africa, the peril of jobs becoming automated varies from 65 per cent to almost 85 per cent (in Ethiopia),[4] suggesting that shifting workers from agriculture to higher-paid factory jobs might no longer work in promoting rapid growth, unlike in the case of Asian economies.

Such high estimates have, however, been criticized in the literature for assuming that occupations as a whole will be replaced by automation. In reality, occupations comprise smaller tasks that are essentially subunits of work activities that produce output and require the performance of human capabilities and skills.[5] There is great variability among the tasks within each occupation, implying that the impact of technical change on the demand for labour will depend on the type of task content involved.[6] For example, in breaking down occupations into tasks with different levels of automatability, the share of jobs that can be automated in the States members of the Organization for Economic Cooperation and Development falls to between 6 and 12 per cent, with significant differences between countries, while the threat of automation to

3 Carl Benedikt Frey and Michael A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?" (Oxford, Oxford Martin Programme on Technology and Employment, University of Oxford, 2013).

4 Carl Benedikt Frey and Michael A. Osborne, *Technology at Work v2.0: The Future Is Not What It Used to Be*, (Oxford, Citi GPS and Oxford Martin School, University of Oxford, 2016).

5 Enrique Fernandez-Macias, John Hurley and Donald Storrie, eds., *Transformation of the Employment Structure in the EU and USA, 1995–2007* (New York, Palgrave Macmillan, 2012).

6 David H. Autor and Michael J. Handel, "Putting tasks to the test: human capital, job tasks, and wages", *Journal of Labor Economics*, vol. 31, No. 2, part 2 (April 2013), pp. S59–S96.

employment falls to between 2 and 8 per cent in low- and middle-income countries.[7]

It could be argued that, as the level of digitalization in Africa is significantly lower compared with other countries, the significant technological surge that we are witnessing today may not affect least developed countries to the same extent as developed economies. It is, however, important to not underestimate the power of emerging technologies to disrupt the global manufacturing landscape, which can indirectly affect the labour markets in African countries. The cost of capital in developed countries is rapidly declining, changing the very definition of what it means to be an attractive manufacturing location.[8] When the cost of capital for a particular task falls below the cost of labour for that task, producers in developed economies might find it increasingly efficient to reshore production from offshored plants back to their own "smart" factories. For instance, in the case of the furniture manufacturing industry, analysis suggests that operating a robot in the United States will become cheaper than human labour in Kenya (in the formal sector) around 2034.[9]

Although evidence suggests that reshoring has so far occurred on a small scale, some leading firms have already reshored historically labour-intensive manufacturing activities closer to the end market, including the manufacture of Philips shavers in the Netherlands[10] and Adidas shoes in Germany.[11] Other examples include the Ford Motor Company, Whirlpool and Caterpillar. According to the Reshoring Initiative,[12] 250,000 jobs have already been reshored from developing countries to the United States since 2010. Drawing on data from the Reshoring Initiative, Bang and te Velde[9] found that for every single United States company that reshores production from Africa, 126 jobs will be lost.[13] The number of job losses is likely to increase once future production that could have been offshored but instead remains concentrated in developed countries is factored in.

Lin[14] argues that even if manufacturing tasks are reshored to developed countries, there is likely to be increased offshoring from China as Chinese firms respond to rising wages (roughly 85 million manufacturing jobs could potentially be relocated). However, a recent survey by Xu and others[15] indicates that 31 per cent of Chinese light manufacturers prefer upgrading their technology over relocating to destinations with cheaper labour. Both lower- and middle-income African countries have, on average, high manufacturing labour costs relative to gross domestic product, as well as high capital costs relative to their comparators. This calls into question the potential

7 Syud Amer Ahmed and Pinyi Chen, "Emerging technologies, manufacturing, and development: some perspectives for looking forward", unpublished manuscript, Washington, D.C., World Bank, 2017.

8 Mary Hallward-Driemeier and Gaurav Nayyar, *Trouble in the Making? The Future of Manufacturing-led Development* (Washington, D.C., World Bank, International Bank for Reconstruction and Development, 2017).

9 Karishma Banga and Dirk Willem te Velde, *Digitalisation and the Future of Manufacturing in Africa* (London, Overseas Development Institute, 2018).

10 Maaike Noordhuis, "China no match for Dutch plants as Philips shavers come home", Bloomberg Technology, 19 January 2012.

11 The Economist, "3D printers will change manufacturing", 29 June 2017.

12 Reshoring Initiative. Available at www.reshorenow.org/.

13 To further understand the significance of reshoring, it would be useful to examine the share of offshored jobs being re-shored and the number of newly offshored jobs. However, this data is not publicly available yet.

14 Justin Yifu Lin, *From Flying Geese to Leading Dragons: New Opportunities and Strategies for Structural Transformation in Developing Countries*, WIDER Annual Lecture 15 (Helsinki, United Nations University, World Institute for Development Economics and Research, 2011).

15 Jiajun Xu and others, *Adjusting to Rising Costs in Chinese Light Manufacturing: What Opportunities for Developing Countries* (London, Overseas Development Institute, London, 2017). The survey covers more than 100 Chinese firms in four sectors: home appliances, garments, footwear and toys, which together account for 16 million jobs.

of Africa to emerge as an important manufacturing hub.[16]

Recent data suggest that there were 103 million manufacturing jobs in China in 2014, of which 25.4 million jobs were in the manufacture of consumer electronics, household appliances, toys, clothing, footwear, hats and leather goods. According to the Xu and others[16] approximately 10 per cent of Chinese firms are either relocating or considering doing so as their first response to rising wages, which could lead to the relocation (to Asia and Africa) of between 2.5 and 10 million jobs. Even if only a quarter of those 10 million jobs were to end up in Africa (and the rest in Asia, for example) that would amount to 2.5 million new jobs. While that is significantly more than the 17.7 million formal and informal manufacturing jobs in sub-Saharan Africa in 2013,[17] it is still a small proportion (1 per cent) in comparison with the additional 280 million jobs that Africa needs to create by 2030 simply to keep up with demographic challenges.

It is crucial for African countries to not take a passive approach towards digitalization, but rather to take an active approach in closing the digital divide, which exists in regard to both access to and use of technologies. If African countries invest in digitalization, there are several channels through which new employment opportunities can be generated. Firstly, digital technologies such as artificial intelligence, robots, three-dimensional printing and e-commerce have immense potential to impact the overall productivity of firms, leading to increased output and exports, which in turn creates new employment opportunities. Consider A to Z Textile Mills Ltd[18] in Tanzania, which serves as a good example of how digital technologies are being used to create more productive jobs. This textile mill is locally owned and has more than 7,000 employees, supplying a range of light manufacturing goods both domestically and internationally. The mill has recently introduced a modern laser fabric-cutting machine for garment manufacturing that can produce 25,000 to 30,000 pieces in one shift. To produce a similar amount manually requires 25 to 35 people; operation of the laser machine requires 17 people. While initially this appears to be a net job loss, the increased output rate has led to a higher volume of accurately cut fabric, in turn creating more input for the next stage of production – stitching – which is relatively more skilled and pays higher wages.

Other conditions under which jobs can be created include increased demand for existing and new products, reduced production and transaction costs that lead to the lowering of barriers to entry into the export market, thereby allowing new entrants, in particular small and medium-sized enterprises and women, and increased service jobs linked to new technologies and machinery.

However, it is entirely possible that digitalization will raise overall productivity but will not be able to generate large-scale employment gains in developing countries. The productivity premium for deploying digital technologies has been found to be higher in developed countries that are already digitally advanced, compared to the less advanced developing countries. For instance, Booz and Company[19] found that while a 10 per cent increase in digitization leads to a 0.62 per cent increase in per capita gross domestic product in digitally advanced economies, the impact of the same is 0.5 per cent in digitally constrained

16 Alan Gelb and others, *Can Africa Be a Manufacturing Destination? Labor Costs in Comparative Perspective*, Working Paper No. 466 (Washington, D.C., Center for Global Development, 2017).

17 Neil Balchin and others, *Developing Export-based Manufacturing in Sub-Saharan Africa* (London, Overseas Development Institute, 2016).

18 This case study is from Banga and te Velde, *Digitalisation and the Future of Manufacturing in Africa*.

19 Soumitra Dutta and Beñat Osorio, eds., *The Global Information Technology Report 2012: Living in a Hyperconnected World*, chap. 1.11 (Geneva, World Economic Forum and INSEAD, 2012).

economies. In addition, Banga and te Velde[9] found that while a doubling of the Internet penetration rate can boost manufacturing labour productivity in middle-income countries by 11 per cent, the impact of the same on low-income countries is just 3 per cent; this difference in the impact of Internet penetration has also been noted between countries of sub-Saharan Africa and other countries. Such differences in productivity gains can also translate into differences in employment gains between countries.

The key to unlocking employment opportunities through digitalization is therefore to maximize employment gains from the productivity effects of digital technologies. This can be achieved by reinvesting cost savings from productivity gains into new job-creating activities, building the absorptive capacity of the workforce and promoting better domestic linkages between firms and sectors.

Digitalization and the changing nature of work

Digitalization and traditional work

Digitalization has the potential to significantly affect not only the level of employment, but also employment structure and wage distribution. It is well documented in the literature that recent technological progress has caused a skill-biased division in the labour market of developed countries, contributing to growing wage inequality.[20]

Digital technologies such as artificial intelligence and robotics tend to replace labour in the performance of routine tasks, including both cognitive tasks such as bookkeeping and clerical tasks[21] and manual tasks such as operating machinery and assembly. It is mainly the middle-skilled occupations such as clerks, crafts and related workers, and plant and machine operators that are intensive in such routine tasks. In contrast, high-skilled occupations such as legislators, technicians and engineering professionals are intensive in non-routine cognitive tasks, while low-skilled occupations such as sales and services workers are intensive in non-routine manual tasks. On average, the demand for workers in high-skilled, non-routine jobs has increased in advanced economies, accompanied by some increase in the demand for workers in low-skilled, non-routine jobs such as caregiving and other personal services, while middle-skilled jobs have declined. This phenomenon has been referred to as the "jobs polarization" or "hollowing out" of the middle-skilled.[22] In these countries, a decrease in middle-skilled jobs has led to middle-skilled workers moving towards less-skilled jobs, which has consequently increased competition and lowered wages.

In the *World Development Report 2016: Digital Dividends* it was reported that the labour markets in developing countries were also hollowing out, although at a slower pace. Other research has found evidence of hollowing out, including in Chile,[23] Mexico and Brazil.[24] Rapid

20 David H. Autor, Frank Levy and Richard J. Murnane, "The skill content of recent technological change: an empirical exploration", *Quarterly Journal of Economics*, vol. 118, No. 4 (November 2003), pp. 1279–1333; David H. Autor and David Dorn, "The growth of low-skill service jobs and the polarization of the US labor market", *American Economic Review*, vol. 103, No. 5 (August 2013), pp. 1,553–1,597; and Maarten Goos, Alan Manning and Anna Salomons, "Explaining job polarization: routine-based technological change and offshoring", *American Economic Review*, vol. 104, No. 8 (August 2014), pp. 2,509–2,526.

21 Luca Marcolin, Sébastien Miroudot and Mariagrazia Squicciarini, *Routine Jobs, Employment and Technological Innovation in Global Value Chains*, Organization of Economic Cooperation and Development (OECD) Science, Technology and Industry Working Papers 2016/01 (Paris, OECD Publishing, 2016).

22 David Autor, "Why are there still so many jobs? The history and future of workplace automation", *Journal of Economic Perspectives*, vol. 29, No. 3 (2015), pp. 3–30; Thor Berger and Carl Benedikt Frey, "Industrial renewal in the 21st century: evidence from US cities", *Regional Studies*, vol. 51, No. 3 (2017), pp. 404–413.

23 Julian Messina, Ana María Oviedo and Giovanni Pica, "Inequality and polarization in Latin America: patterns and determinants", unpublished paper, Washington, D.C., World Bank, 2016.

24 William F. Maloney and Carlos Molina, "Are automation and trade polarizing developing country labor markets, too?", Policy Research Working Paper No. 7922 (Washington, D.C., World Bank, 2016).

advances in technical feasibility and the falling cost of capital could lead to an increase in polarization in developing economies over time.

Wages in developing countries face a two-pronged threat. Firstly, the falling cost of capital and growing digitalization in developed economies can have a backstopping effect on wages, whereby manufacturing firms in developing economies lower wages to remain competitive. Secondly, while even a small increase in the level of robot productivity can increase output significantly, it will lower wages in the short run over the span of about 20 to 50 years or so.[25] Even in the long run, the labour share declines substantially and inequality rises. In the case of Kenya, Banga and te Velde[9] found that the share of labour compensation relative to manufacturing value added declined from 40 per cent in 2000 to 27 per cent in 2016, over a period which has seen significant improvements in digitalization. While it is widely held that higher-productivity manufacturing can offset the falling share of labour and reduced wages, Turner[26] argues that rapid productivity growth can be driven by a very small number of highly skilled people. Instead of focusing only on skills, attention should be given to lifelong education, learning and citizenship. Rodrik[27] advocates for better domestic integration between high-productivity firms and small, low-productivity firms.

Digitalization and online work.

Along with changes in occupational structure and wages for labour in manufacturing in the digital economy, a new type of labour has emerged, known as "digital labour", or, in other words, performing digital tasks that are outsourced online. Digital platforms, such as Uber and Upwork, have reduced the cost of exchange within the informal economy, thereby raising productivity and connecting the informal segments of the economy with the formal sector. This is particularly useful in African economies, and in some Asian economies, where the informal sector already forms a large share of the economy.[28] Digitalization allows "business to take on formality in small, accessible, low-cost steps that match company needs – more of a ladder to climb than a cliff to scale".[29] It can create new opportunities in the gig economy, including for ridesharing drivers, e-commerce logistics, e-commerce sellers and digital translators. For instance, Nigeria-based Jumia employs 3,000 people throughout Africa but has engaged 100,000 commission-based affiliates to help customers make orders through its online platforms.

Digital labour is increasingly being treated as a commodity, with online work being reoutsourced under worse conditions.[30] Declining barriers to entry continue under digitalization, can result in increasing competition, the rise of precarious work and falling wages; this highlights the importance of strengthening human rights-based social protection of the digital labour force. As stated in article 23, paragraph 3, of the Universal Declaration of Human Rights, "Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented,

25 Andrew Berg, Edward B. Buffie,and Luis-Felipe Zanna, *Should We Fear the Robot Revolution? (The Correct Answer is Yes)*, International Monetary Fund (IMF) Working Paper No. 18/116 (Washington, D.C., IMF, 2018).

26 Aidan Turner, "Capitalism in the age of robots: work, income and wealth in the 21st century", lecture at School Advanced International Studies, John Hopkins University, Washington, D.C., 10 April 2018.

27 Dani Rodrik, "New technologies, global value chains, and developing economies" National Bureau of Economic Research Working Paper No. 25164 (October 2018).

28 Pathways for Prosperity Commission, Charting Pathways for Inclusive Growth: From Paralysis to Preparation (Oxford, Blavatnik School of Government, Oxford University, 2018).

29 Amolo Ng'weno and David Porteous, "Let's be real: the informal sector and the gig economy are the future, and the present, of work in Africa" (Washington, D.C., Center for Global Development, 2018).

30 Mark Graham, "Towards a fairer world of digital work", presentation at the second session of the Intergovernmental Group of Experts on E-commerce and the Digital Economy, Geneva, April 2018.

if necessary, by other means of social protection."

It is also essential to note that the demand for digital labour comes mainly from wealthy countries, with workers around the world competing for work opportunities. This distributed supply and concentrated demand have led to a significant increase in competition, as well as to less desirable or more unfair work along with declining bargaining power of workers. There is a need for African countries to promote freedom of association and the right to form unions that can function freely through the workers' collective bargaining power. As stated in the International Covenant on Economic, Social and Cultural Rights, "everyone has the right to form trade unions and join the trade union of their choice". The importance of having labour unions is highlighted in the example of Uber, as provided by Banga and te Velde.[31] For example, in the current scenario, the introduction of navigation and global navigation satellite systems, as well as platforms such as Uber, has lowered the barriers to entry into the driving workforce, allowing less-skilled workers to work as drivers. In countries without a strong labour union presence in the taxi industry, this can result in falling wages for taxi drivers. But in countries such as Indonesia, the strong labour union presence has prevented taxi-driving wages from dropping, even with the emergence of Uber. In such countries, the existence of a large number of app-based rides can instead create secondary industries or help in shifting informal workers to the formal sector.

Changing landscape of skills

Growing digitalization has not only been characterized by declining prices in information and communications technology (ICT) and shifts in spending from digital assets to services, but also by changing demands in the workforce. The changing occupational structure further highlights the urgent need for African countries to develop effective public-private partnerships to re-equip and reskill the workforce. There is a need to invest in knowledge-based assets, including, for example, intangible capital resulting from firms' investments in research and development, intellectual property and firm-specific training.

Banga and te Velde[31] examined which skills would remain relevant or increase in importance in the digital economy. They found that countries that have experienced a higher rate of growth in robot deployment are also the ones with larger increases in the share of non-routine employment (see figure V). Occupations that are intensive in non-routine manual tasks will require dexterous physical skills (such as for driving trucks) and occupations that are harder to automate, such as nursing and caregiving, will require socioemotional skills. Non-routine cognitive tasks in the digital economy will require job-specific digital skills (for example, computer programming) and job-neutral digital skills (for example, data analysis), as well as soft skills such as management, collaboration, communication and analytical thinking skills.

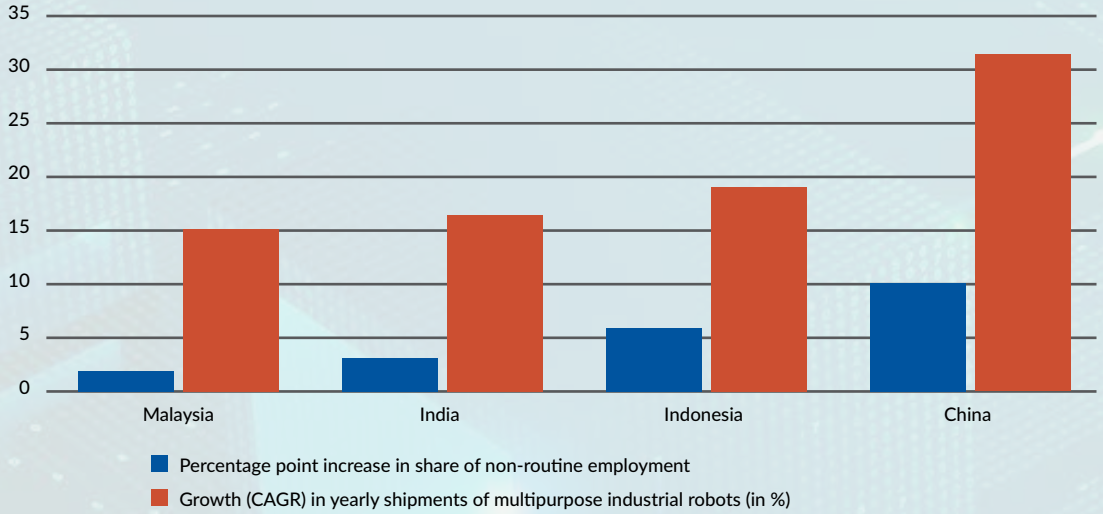
Banga and te Velde also examined skills readiness and found that developing economies were lagging; they had a lower share of tertiary and vocational enrolment, as well as a lower share of employment in the ICT sector. Developing economies were found to rank lower in routine cognitive skills, interpersonal skills and analytical skills but higher in non-routine manual skills. Skill shortages were observed to have increased over time in some African countries, such as Kenya, the United Republic of Tanzania, Ghana and Rwanda.

Recent efforts by Rwanda in the area of skills development include the launch of the Digital

31 Karishma Banga, and Dirk Willem te Velde, "Skill needs for the future", Pathways for Prosperity Commission Background Paper Series, No. 10 (Oxford, Overseas Development Institute, 2018).

Figure V

Relationship between growth in robot deployment and the changing nature of employment



Source: Karishma Banga, and Dirk Willem te Velde, "Skill needs for the future".

Note: Based on data from African Development Bank and others, *The Future of Work: Regional Perspectives* (Washington, D.C., 2018) and International Federation of Robotics, *World Robotics Report 2017*. (Frankfurt am Main, 2017).

Ambassador Programme. The Programme is a public-private partnership aimed at employing 5,000 young Rwandans as digital skills trainers, or "digital ambassadors". After first being trained themselves in ICT and soft skills, they will then provide hands-on training to approximately 5 million Rwandans on the use of the Internet, mobile applications and other ICT technologies.

Conclusions and policy recommendations

This think piece has focused on the opportunities and challenges that digitalization presents in relation to the right to work. By investing in digital technologies, African economies can realize significant employment gains resulting from increased efficiency and increased outputs and exports, as well as from lower barriers to entry into the export market. However, if the digital divide in access to technology persists, African economies will risk eroding their manufacturing base in the face of reshoring of manufacturing tasks and limited offshoring of digitally advanced production in the future. This is particularly worrisome because Africa is already grappling with serious unemployment issues.

It is furthermore essential to note that digitalization will not only impact employment levels, but also the structure of employment, wages and the nature of work. On the one hand, the increasing use of digital technologies is likely to increase the non-routine task content of manufacturing jobs and therefore the demand for skilled workers. On the other hand, lowered barriers to entry resulting from digitalization can lead to increased competition in online work, which can increase the precariousness of employment and lower wages.

To prepare for and leverage the digital economy, African countries can benefit from pursuing a two-pronged approach. Currently, there are lower levels of digitalization in

sub-Saharan Africa compared with the rest of the word and the rate of digitalization varies significantly between industries within the manufacturing sector. This suggests that African industries have not yet been affected by the global technological surge on the same scale as their developed counterparts, which creates a window of opportunity for African countries to move into less-automated sectors in which the installation of technology has been slow, such as food and beverages, basic metals, and paper and paper products, among others. African countries therefore need to continue to mount a targeted effort to promote exports by manufacturing sectors that are less affected by global trends. These sectors still provide important opportunities for Africa to undertake local production and regional trade, and in the process, to develop industrial capabilities which can enable the move into higher-value-added manufacturing and more productive jobs. For this to happen, addressing the standard constraints on manufacturing, such as poor infrastructure, the high cost of electricity and poor access to finance, remains important.

At the same time, it is important for African economies to prepare for the digital future. As noted by the Committee on Economic, Social and Cultural Rights, the International Covenant on Economic, Social and Cultural Rights "... clearly imposes a duty on each State party to take whatever steps are necessary to ensure that everyone is protected from unemployment and insecurity in employment and can enjoy the right to work as soon as possible".[32] To fulfil the right to work in the increasingly digital landscape of manufacturing, it is important for African countries to actively invest in digital technologies and to maximize productivity and employment gains through digitalization. There is a need to: (a) close the digital divide between Africa and the rest of the world, in terms of access to, and affordability and use of, digital technologies; and (b) put in place targeted skills development policies that can increase the ability of the workforce in African countries to acquire, utilize and implement new digital technologies.

To become future-ready, curricula in African educational institutions need to be revised and reoriented around science, technology, engineering and mathematics subjects, with a special focus on technical and vocational education and training. Formal education, national skills development efforts and training strategies in African countries need to focus on boosting job-neutral and job-specific digital skills, as well as job-neutral soft skills such as communication, management and analytical skills, and critical and creative thinking skills.

Developing effective public-private collaborations can be particularly effective in preparing the workforce and increasing its employability in the digital economy. Furthermore, as technology is advancing at a faster rate than the development of relevant skills, it is important to develop complementary skills to avoid skill mismatches, which can be done in collaboration with the private sector through on-the-job and graduate training schemes. Women should be given equal access to technical and vocational education and training, including skills development training. In that connection, the Committee on Economic, Social and Cultural Rights, in its general comment number 18, on article 6 of the International Covenant on Economic, Social and Cultural Rights, noted that "the national employment strategy ... must ensure equal access to economic resources and to technical and vocational training, particularly for women, disadvantaged and marginalized individuals and groups ...".[33]

32 E/C.12/GC/186, para. 37.
33 Ibid., para. 44.

Complementary policies to promote inclusive and decent work are also important; workers will need to be protected against job polarization, increasing competition and pressure on wages, and the rising precariousness of online work. Compensatory mechanisms, strong and free trade unions and social protection efforts can go a long way in protecting the rights of the digital workforce, combating wage inequality and promoting collective bargaining power.

Advancing the protection of personal data in the implementation of the African Continental Free Trade Area: a human rights perspective

Ololade Shyllon

Introduction

The digital age has increased the ease and speed with which information can be gathered, stored and shared, bringing numerous advantages for innovation and economic development. At the same time, however, the use of digital technologies by State and private actors has had a profound impact on the promotion and protection of human rights, including the right to privacy. Increasingly, States are seeking to gather the personal data[1] of individuals for a variety of reasons, such as the protection of national security. This comes with human rights consequences. Likewise, private actors are also now faced with the human rights implications of their activities relating to the personal data of individuals to whom they provide services in the digital space.

In Africa, the adoption of the African Union Convention on Cyber Security and Personal Data Protection in 2014 signalled the growing priority accorded to data protection within the African Union. Regional economic communities have also all adopted various data protection instruments in an effort to harmonize the legal framework within their member States. However, the focus of these normative standards has been on information and communications technology (ICT), e-commerce and economic development, with minimal regard to human rights considerations. The absence of provisions on the right to privacy in the regional human rights treaty, the African Charter on Human and Peoples' Rights, has further diminished the ability to adopt a human rights approach to privacy in Africa.

Notwithstanding this normative lacuna, the establishment of the African Continental Free Trade Area brings with it an urgency to assess its implications on the right to privacy in Africa. While there are positive human rights impacts such as the closing of the digital divide and increased enjoyment of socioeconomic rights, the implementation of the African Continental Free Trade Agreement has implications for privacy, to the extent that it involves the processing of sensitive personal data such as biometric data.

The present think piece provides a human rights perspective on the data protection framework in Africa and the normative intricacies related to biometric data processing. Drawing on a South African case study,

1 Article 1 of the African Union Convention on Cyber Security and Personal Data Protection defines personal data as "any information relating to an identified or identifiable natural person by which this person can be identified, directly or indirectly in particular by reference to an identification number or to one or more factors specific to his/her physical, physiological, mental, economic, cultural or social identity".

the piece examines the adequacy of existing frameworks in view of the expected increase in the processing of biometric data for immigration and similar purposes under the African Continental Free Trade Agreement. Finally, multifaceted strategies for the implementation of the Agreement in a manner that is consistent with the human rights obligations of African Union member States are suggested.

Overview of the normative framework on personal data protection in Africa

The African Charter on Human and Peoples' Rights has several unique features that have contributed to framing the international human rights discourse. One is the incorporation of the concept of "peoples' rights", signifying the acceptance of communal or group rights as inherently African. Another is the elaboration of the duties of the individual as a corollary to the individual rights that had hitherto underpinned the traditional conceptualization of human rights. These two unique features undoubtedly influenced the omission of provisions on the right to privacy in the African Charter, a rejection of the perceived individualistic nature of privacy, in an Africa that prides itself on values such as communal living. This omission was, however, based on a misunderstanding of the multidimensional and multifaceted nature of privacy.

The omission notwithstanding, the right to access, update and correct personal information, which has its origins in the right to privacy, has found its way into the normative human rights framework in Africa, through the Declaration of Principles on Freedom of Expression in Africa of the African Commission on Human and Peoples' Rights, which supplements the provision on freedom of expression contained in article 9 of the African Charter.[2] Principle IV (3) of the Declaration states that "everyone has the right to access and update or otherwise correct their personal information, whether it is held by public or by private bodies".[3]

Principle XII (2) of the Declaration also makes reference to privacy, in the context of protecting reputations, stating that "privacy laws shall not inhibit the dissemination of information of public interest".

Outside of the human rights sphere, the absence of provisions on the right to privacy in the African Charter has done little to hinder the adoption of data protection frameworks by regional and subregional institutions in Africa. At the continental level, the African Union Convention on Cyber Security and Personal Data Protection was adopted by the Assembly of Heads of State and Government of the African Union in 2014, cementing data protection as a key issue of concern in the context of information technology and e-commerce in Africa. Though binding, this treaty is yet to come into force, as it has received only four of the 15 required ratifications.[4]

In West Africa, the Economic Community of West African States (ECOWAS) adopted the ECOWAS Supplementary Act on Personal Data Protection in 2010, which is the only binding data protection framework in Africa. For East Africa, two East African Community frameworks for cyberlaw were adopted in 2010 to guide the adoption of cyberlaws by member States. The first of these two frameworks, which was adopted by the Council

2 The African Commission on Human and Peoples' Rights also adopted resolution 362 (LIX), on the right to freedom of information and expression on the Internet in Africa, in November 2016, which recognizes online privacy as "important for the realization of the right to freedom of expression and to hold opinions without interference, and the right to freedom of peaceful assembly and association".

3 Principle IV, para. 3, of the Declaration of Principles on Freedom of Expression in Africa.

4 Only Guinea, Mauritius, Mauritania and Senegal have ratified the African Union Convention on Cyber Security and Personal Data Protection.

of Ministers of the East African Community in 2010, recommended that member States adopt international best practices in data protection, but offered no further guidance on how to embark on the process.[5] As part of a project on the harmonization of policies on ICT in sub-Saharan Africa, in 2013, model laws on data protection were developed for Southern Africa and for the Economic Community of Central African States, along with model laws on e-transactions and cybercrime. In the same year, the Central African Economic and Monetary Community adopted these three model laws as "draft directives".

At the domestic level, the constitutions of all but one African State guarantee the right to privacy, usually in the context of privacy of information or of communications.[6] Algeria, Cabo Verde and Mozambique provide explicitly for the privacy or protection of personal data in their constitutions as a human right, while other constitutions provide for the right to privacy in the context of secrecy of communications. Nevertheless, the protection of personal data could be read into existing constitutional provisions on the right to privacy.

In terms of laws, 18 countries in Africa have data protection laws.[7] These laws are similar in many respects, as their development has been guided by dated European regional frameworks on data protection. As is to be expected, similarities exist among legal systems emanating from common law, on the one hand, and among those of the civil law tradition, on the other hand. Most importantly, there is minimal reference to human rights standards in these laws. Some specific gaps in these regional and national frameworks include the following:

- Most frameworks on data protection have generally been adopted as part of a trio of legal instruments, the other two being on e-transactions and cybersecurity. This reinforces the perception that data protection is merely an e-commerce or ICT issue, and that human rights considerations are peripheral.

- The non-recognition of the right to privacy as a cross-cutting right, and the non-recognition of its special relationship with the two other information-related rights of freedom of expression and access to information, has meant limited incorporation of relevant human rights standards in legal frameworks on data protection. Only South Africa makes a connection between privacy and the right of access to information in terms of normative substance and oversight for implementation.[8]

- Some limitations or "exemptions" in data protection frameworks are vaguely defined and broadly formulated such that important rights are not protected from interference. For example, the right of individuals to access information about their personal

5 Graham Greenleaf and Marie Georges, "African regional privacy instruments: their effect on harmonization", *Privacy and Business Law International Report*, vol. 132 (2014), pp. 19–21.

6 The only State constitution that does not guarantee the right to privacy in Africa is the Constitution of Somalia.

7 These are: Angola, Benin, Burkina Faso, Cabo Verde, Chad, Côte d'Ivoire, Gabon, Ghana, Lesotho, Madagascar, Mali, Mauritius, Morocco, Senegal, Seychelles, South Africa, Tunisia and Uganda. Note that the laws of Seychelles and South Africa are yet to fully come into force.

8 The Protection of Personal Information Act of South Africa, 2013, establishes the Information Regulator as the oversight body for both the Protection of Personal Information Act and the Promotion of Access to Information Act, 2000, thus creating an opportunity for synergy in the implementation of the right of access to information and the right to privacy. Furthermore, the connection between both rights is expressly provided in section 2 (a) (i) of the Protection of Personal Information Act, where reference is made to balancing privacy with other rights, in particular access to information.

data is commonly trumped by national security considerations.[9]

- Oversight of national data protection frameworks is generally left to data protection authorities whose membership largely comprises technocrats with no human rights expertise. More worrisome is the absence of a regional body with human rights expertise under the African Union Convention on Cyber Security and Personal Data Protection to oversee the monitoring and enforcement of data protection laws.

- Closely connected to the deficiencies listed above is the absence of remedies for breaches of data privacy that are grounded in human rights considerations and that reach over and beyond the typical remedies related to ICT and consumer protection.

Within the global human rights system, the right to privacy was first established under article 12 of the Universal Declaration of Human Rights, which provides for protection against arbitrary interference with privacy, family, home or correspondence and attacks against honour and reputation. Article 17 of the International Covenant on Civil and Political Rights[10] guarantees the right to privacy in similar wording. Other treaties, such as the Convention on the Rights of the Child (article 16) and the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (article 14), guarantee the right to privacy for children and migrant workers, respectively, using the exact same wording as the International Covenant on Civil and Political Rights.

The Human Rights Committee, in its general comment number 16 (1988) on the right to privacy,[11] has interpreted article 17 of the International Covenant on Civil and Political Rights as requiring States to adopt legislative and other measures to give effect to the right[12] and to ensure that the gathering and holding of personal information by public authorities or private individuals or bodies is regulated by law.[13] Member States must also take measures to prevent unauthorized processing of personal information or its use for purposes incompatible with article 17.[14]

Privacy implications of the African Continental Free Trade Agreement

The African Continental Free Trade Agreement is an attempt by African States to go beyond "speaking with one voice" to actually "acting with one voice" on inter- and intra-African trade. Some major aspects of the Agreement's objectives that are of relevance to privacy and the protection of personal data include the creation of a single market for goods and services that is facilitated by the movement of persons; the creation of a liberalized market for goods and services; the movement of capital and natural persons; and the promotion of the sustainable and inclusive socioeconomic development, gender equality and structural transformation of African States.[15]

9 For example, section 60 of the Data Protection Act of Ghana, 2012, exempts the provisions of the Act, including the rights guaranteed to data subjects, from applying to issues of national security, and a certificate issued by the Minister is evidence of such exemption. Although a person affected by the issue of the certificate may apply to the High Court for a judicial review, common challenges posed by judicial systems in Africa, such as prohibitive costs and severe time delays, place litigation beyond the reach of the average African. See also section 45 of the Data Protection Act of Mauritius, 2004, and article 8, paragraph 5, of the Data Protection Act of Cabo Verde, 2001.

10 South Sudan is the only African country that has not yet ratified the International Covenant on Civil and Political Rights.

11 General comment No. 16 (1988) on the right to privacy (HRI/GEN/1/Rev.9 (vol. I)), relating to article 17 of the International Covenant on Civil and Political Rights.

12 Ibid.

13 Ibid., para. 10.

14 Ibid.

15 Articles 3 (a)–(c) and (e) of the African Continental Free Trade Agreement.

In essence, the African Continental Free Trade Agreement facilitates trade and the free movement of human and financial capital within Africa with the ultimate aim of improving socioeconomic development. As Africa increasingly relies on ICT to facilitate trade and the movement of persons, the collection, processing and storage of the personal data of individuals is becoming a routine occurrence. Two natural consequences of this trend are the need to protect personal data in the context of e-commerce, in the case of intra-African trade, and the need to protect biometric data, in the case of the movement of persons.

Biometric data processing: some normative intricacies

Biometric systems are typically used for identification, verification or both, and rely on physical and physiological attributes such as fingerprints and picture or facial recognition, as well as behavioural characteristics such as signature and voice recognition, in this process. These types of data are rightly regarded as unique forms of personal data that require an added layer of protection in relation to their processing.

The use of biometrics for purposes of identification and verification is neither a new phenomenon in Africa nor at the global level. However, their increasing use by State and non-State actors, coupled with the complexity of the human rights implications of their use, makes the consideration of biometric identification an important priority. Today, biometrics are used by African States for a variety of purposes, including immigration and border control, national identity management, the operation of social welfare systems, the holding of elections, intelligence-gathering and the protection of State security, as well as by law enforcement authorities for crime prevention.

Some of the complexity arising from the use of biometric data in the human rights context relates to the fact that rapid technological advancements continuously improve the effectiveness and accuracy of such use for legitimate purposes in the public interest such as those highlighted above. Thus, it has become easier to gather intimate information about a person, which can then be used to monitor the person's activities and ultimately restrict the enjoyment of other rights such as freedom of expression and association. Furthermore, biometric data is not always 100 per cent accurate. Mistakes in collection and inherent biases in the development of the technology used for collection and processing could perpetuate existing inequalities, such as in terms of race, gender, religion or social status. Furthermore, in cases where they are accurate, biometric data could create a potentially permanent avenue for the violation of rights by States, owing to its reliance on inherently unique physiological characteristics that cannot be altered, as compared with other types of personal data such as postal addresses or telephone numbers.

Non-State actors such as banks and other financial institutions also underscore the importance of biometric systems in preventing economic fraud, while digital service providers emphasize the importance of biometrics in guaranteeing the safety and security of their services. However, to the extent that they involve the processing of the personal data of individuals, such legitimate aims must conform with relevant human rights standards, including the three-part test of legality, legitimacy and proportionality. However, existing national and regional frameworks in Africa do not expressly incorporate human rights considerations into the processing of personal data, let alone biometric data.

In fact, the African Union Convention on Cyber Security and Personal Data Protection does not explicitly categorize biometric data as "sensitive personal data" that is prohibited from being processed, except in specified

circumstances.[16] Rather, the Convention requires that the processing of biometric data must only occur upon the prior authorization of the relevant data protection authority.[17] This in effect assumes the existence of a data protection law and the establishment of a body to oversee its monitoring and enforcement. However, just over a quarter of all African States have data protection laws, and even where such laws exist, the establishment and proper functioning of the data protection authority is not a uniform occurrence.

In comparison, the European Union General Data Protection Regulation, which came into effect in May 2018, treats biometric data as a special category of personal data, and goes further to prohibit its processing, except in cases where:[18]

- The data subject has given explicit consent to its processing.
- The processing is necessary for effecting the obligations and exercising the rights of the data processor or the data subject in relation to legal requirements on employment and social security and social protection.
- The processing is necessary to protect the vital interest of the data subject.
- The processing is necessary for the establishment and defence of legal claims.
- The processing is necessary for public interest reasons.

In South Africa, the Protection of Personal Information Act of 2013, like the African Union Convention on Cyber Security and Personal Data Protection, does not explicitly recognize biometric data as sensitive or special personal data, nor does it prohibit its processing. Instead, the Act uses the term "unique identifiers" and restricts the processing of data that uniquely identifies an individual by requiring the prior authorization by its data protection authority, the Information Regulator, in cases where:[19]

(a) Processing of the unique identifier is for a purpose other than that for which the identifier was intended at the time of collection.

(b) The processing is carried out with the aim of linking the data with that processed by another data processor.

As demonstrated in the case study presented below, the circumstances envisaged under the Protection of Personal Information Act as requiring the prior authorization of the Information Regulator were exactly what occurred. Unfortunately, the Act is yet to become fully operational, as only the provisions allowing for the operationalization of the office of the Information Regulator have come into force.

Key principles of personal data processing

Generally, legal frameworks on data protection provide for key principles to be observed in the processing of the personal data of individuals. The most fundamental of these principles is the requirement that personal data should only be processed with the consent of the individual concerned. There is no universally accepted definition of consent in the context of the processing of personal data.

16 Article 14, paragraphs 1 and 2, of the African Union Convention on Cyber Security and Personal Data Protection. It is worth mentioning that the exceptions to the general prohibition against the processing of sensitive personal data are so broad as to severely limit the effectiveness of its categorization as such.

17 Article 10, paragraph 4 (d), of the African Union Convention on Cyber Security and Personal Data Protection.

18 Article 9 of the General Data Protection Regulation.

19 Article 57, paragraph 1 (a) (i) and (ii), of the Protection of Personal Information Act, 2013.

The African Union Convention on Cyber Security and Personal Data Protection refers to "any manifestation of express, unequivocal, free, specific and informed will". The European Union General Data Protection Regulation defines consent as "any freely given, specific, informed and unambiguous indication of the data subject's wishes", whether given in the form of a statement or a clear affirmative action, agreeing to the processing of his or her personal data.[20] In South Africa, consent is defined as "any voluntary, specific and informed expression of will in terms of which permission is given for the processing of personal data". It is clear that individuals must be fully aware of the nature and potential impact of the processing of their information in the specific instance before they may be regarded as consenting to such processing. Consent may, however, be dispensed with in certain circumstances.[21]

Beyond consent, there are other interrelated principles that must be observed in the processing of personal data. These include the following:[22]

- Lawfulness and fairness of processing: the processing of personal data must not be undertaken in an unlawful or fraudulent manner.
- Purpose, relevance and storage of processed data: the processing of personal data should be used only for the purpose for which it is collected, and the data should be relevant and not excessive and should be kept only as long as necessary.
- Accuracy: the personal data collected must be accurate and kept up to date, and where the data are inaccurate or incomplete, they should be erased or rectified.
- Transparency: information about the collection and processing of personal data must be disclosed by the body or entity in possession or control of the data.
- Confidentiality and security: the processing of personal data must be undertaken in a confidential and secure manner.

Another key feature of data protection laws is the provision of four distinct rights of individuals in relation to their personal data. These include the right to information about the type and nature of the personal data being held, the right to access such information at reasonable intervals without excessive delay or expense, the right to object to the processing of personal data and the right to rectify and correct such personal data.

The following case study illustrates the importance of the application of these data protection principles and the rights of data subjects with regard to biometric data.

Case study: the use of biometrics for social grant distribution in South Africa

In South Africa, the right of access to social security is guaranteed to everyone, in particular to children, under sections 27 and 28 of the 1996 Constitution. However, the negative effects of historical exclusion, followed by the discriminatory allocation of social assistance to non-whites under apartheid, meant that, for many years thereafter, the implementation of this right was plagued by "budget constraints, the lack of capacity in provinces,

20 Article 1 of the Protection of Personal Information Act, 2013.

21 Under the African Union Convention on Cyber Security and Personal Data Protection, for example, consent is not required where processing is necessary for the fulfilment of a legal obligation by the data controller, the performance of a task in the public interest or the exercise of a public duty of the controller or a third party, the fulfilment of a contract entered into by the data subject or at the request of the data subject prior to entering a contract, or to protect the rights of the data subject.

22 Article 13 of the African Union Convention on Cyber Security and Personal Data Protection. These principles are replicated in all data protection instruments and laws, with minor variations.

infrastructure limitations, poor customer service and backlogs".[23] It was a broken system fraught with duplication of payments, as well as fraudulent and corrupt practices.[24]

To redress this, the South African Social Security Agency was established in 2005 to oversee the administration and payment of social assistance. In 2012, the Agency initiated a tender process for the distribution of social grants, specifically requiring that bidders stipulate measures to facilitate the biometric verification of the identity of grant beneficiaries in the enrolment and payment processes. This culminated in the award of a five-year contract to Cash Paymaster Services (CPS). However, the confusion caused by variations in the bid documents concerning which stages of the payment process required biometric verification, among other things, led the Constitutional Court to declare in 2014 that the contract was illegal and invalid.[25] This was, however, not the full extent of the negative impact of the Agency's insistence on biometric verification.

As required, CPS collected and stored the biometric fingerprints and voiceprints of beneficiaries in South African Social Security Agency smart cards, which were then used to identify and verify beneficiaries. Thus, once the smart card was inserted and the fingerprint of the beneficiary matched that which was stored in the smart card, the social grant amount was loaded directly into the beneficiary's smart card. For beneficiaries who accessed their social grants through automated teller machines and traditional point-of-sale terminals without fingerprint readers, biometric voiceprint verification was performed.

This meant that CPS had access to the biometric data of the 9 million beneficiaries, which it subsequently shared with numerous other subsidiaries of its parent company that offered financial services such as banking, microloans and life insurance.

Investigations conducted into the activities of CPS and its co-subsidiaries revealed the following:[26]

- Approval for loans was dependent on beneficiaries opening an EasyPay Everywhere account and taking up an insurance policy with SmartLife Insurance.
- Beneficiaries were required to provide their fingerprints, which were then matched with the South African Social Security Agency biometric database to identify them as beneficiaries and verify their personal details.
- Beneficiaries "consented" to the transfer of their grant funds to their EasyPay Everywhere account by simply placing their finger on the finger scanner to perform biometric verification.
- Once the loan was approved, loan interest, insurance premiums and even services not provided to beneficiaries were deducted each month before the grant amount was credited, which caused the accounts to be overdrawn.

23 Trusha Reddy and Andile Sokomani, Corruption and Social Grants in South Africa, Monograph No. 154 (Pretoria, Institute for Security Studies, 2008).

24 South Africa: Constitutional Court, *AllPay Consolidated Investment Holdings and Others v. Executive Director of the South African Social Security Agency and Others*, Case CCT 48/13, [2013] ZACC 42, Judgment of 29 November 2013, para. 8.

25 This declaration of invalidity was, however, suspended for the duration of the contract to prevent undue hardship on grant beneficiaries who were at risk of not receiving their grant, should the bid process be started afresh. The Court chose instead to give the South African Social Security Agency the time to take over the payment of grants at the end of the contract in 2017. Unfortunately, the Constitutional Court had to extend its suspension for a year, and then again for six months, as the Agency was eventually only able to take over payment in September 2018.

26 Marianne Thamm, "Sitting bucks: damning survey explains how Net1 benefits from close proximity to social grant recipients", Daily Maverick, 28 February 2018.

Owing to the Protection of Personal Information Act not being in force, this abuse of the biometric data of beneficiaries was not directly addressed by the Constitutional Court in a case brought by the non-governmental organization Black Sash that concerned this issue and other issues related to the contract.[27] In the case, the Court was requested to order that the South African Social Security Agency's contract with CPS:[28]

- Contain adequate safeguards to ensure that personal data obtained in the payment process remained private and could not be used for any purpose other than payment of the grants or any other purpose permitted by law.
- Provide that the personal information of beneficiaries would be the property of the South African Social Security Agency.
- Provide that such personal information should, at the end of the contract, be given to the South African Social Security Agency, and be removed from the possession of CPS, its parent company and all its affiliate companies, except where such a company and a beneficiary had a continuing contractual relationship.
- Preclude a contracting party from inviting beneficiaries to "opt in" to the sharing of their confidential information for the marketing of the contracting party's goods and services.

However, the Information Regulator rightly opposed the declaration of ownership by the South African Social Security Agency, submitting instead that the "personal information of grant beneficiaries is their property and could never vest in a third party".[29]

In the end, the Court ordered that the contract between CPS and the Agency contain adequate safeguards to protect the personal data of beneficiaries and also to protect beneficiaries from "opting in" to the sharing of their personal data for marketing purposes.[30] Although the issue of the transfer of personal data of beneficiaries to the South African Social Security Agency upon the conclusion of the contract went unaddressed, CPS is expected to hand over all information to the Agency.[31]

By making the use of biometric verification a requirement of the tender process, the South African Social Security Agency effectively concluded that such verification was the best mechanism for grant payments, without having undertaken a holistic appraisal of the benefits and risks, including potential privacy violations. However, had the Protection of Personal Information Act been in force, the decision by the Agency to introduce biometric processes would have, in the first place, been subject to the scrutiny of the Information Regulator. Thus, CPS would have required the prior authorization of the Information Regulator to process the information of beneficiaries for reasons other than grant payments. Herein lies the importance of adopting data protection laws that limit the processing of personal data with due regard to the right to privacy and establish a privacy-focused oversight mechanism for their implementation.

27 South Africa: Constitutional Court, *Black Sash Trust v. Minister of Social Development and Others*, Case CCT 48/17 [2017] ZACC 8, Judgment of 17 March 2017.

28 Ibid., para. 63.

29 Information Regulator, Press statement, ref. CCT 48/17, 17 March 2017. Available at www.justice.gov.za/.

30 *Black Sash Trust v. Minister of Social Development and Others*, para. 6.

31 Following the end of the contract with CPS in September 2018, the South African Social Security Agency announced that CPS had agreed to hand over all information related to the contract, and also to the appointment of an auditor to verify that the details of grant beneficiaries had been removed from CPS systems (Mayibongwe Maqhina, "MPs delighted to see the back of CPS after Sassa debacle", IOL, 12 October 2018).

Conclusion and recommendations

The core objectives of the African Continental Free Trade Agreement, such as the free movement of persons to facilitate investments, and the promotion of sustainable and inclusive socioeconomic development, can only be attained in a market environment of trust that prioritizes the protection of personal data through the adoption and effective implementation of a human rights-focused legal and policy framework aimed at preventing the unauthorized collection and use of personal data. This is particularly important in the context of the impending roll-out of the African Union passport to facilitate the objectives relating to freedom of movement of the African Continental Free Trade Agreement.

At the regional level, efforts must be made to assist States in adopting and implementing data protection laws that give effect to their regional human rights obligations. The greatest barrier to this, however, is the absence of a normative basis in the African Charter and the corresponding perceived lack of authority of the African Commission to do so. There are, however, promising developments in this regard.[32] The African Commission, as the premier institution for the promotion and protection of human rights in Africa, should ideally mainstream the protection of personal data into its work. Other suggested interventions that could be made by the African Commission include the development and adoption of a model law and the infusion of data protection provisions into the State reporting process, as well as the adoption of soft law, such as a general comment on privacy, and importantly, a resolution on privacy specifically related to the implementation of the African Continental Free Trade Agreement.

Furthermore, given that most African States have ratified the International Covenant on Civil and Political Rights and also guarantee the right to privacy in their constitutions, attempts must be made to compel the adoption of data protection laws that incorporate established human rights principles on privacy, as opposed to the current practice of making cursory reference to privacy in the preambles to such laws. Connected to this is the need to ensure synergy in the development and implementation of data protection laws in relation to the closely connected rights of freedom of expression and access to information. A fundamental issue regarding implementation is the inclusion of human rights and privacy experts in the membership of data protection authorities.

More importantly, the African Union Commission, working with key stakeholders such as the African Governance Architecture,[33] should develop guidelines that address the human rights implications of the African Continental Free Trade Agreement in a holistic manner. The Agreement directly implicates the enjoyment of numerous rights such as freedom of movement, the right to work, as well as cross-cutting rights such as equality and non-discrimination. Irrespective of existing data protection laws or policies, the guidelines should require that States parties to the Agreement guarantee the following:

(a) The use of biometric data for any identification and verification purpose will be based on an objective appraisal of its necessity, taking into account human rights considerations.

32 The African Commission on Human and Peoples' Rights has begun the process of revising the Declaration of Principles on Freedom of Expression in Africa, of which the author is the drafter. It is envisaged that issues such as privacy will be incorporated, thus providing a more concrete normative basis for the promotion and protection of the right to privacy in Africa.

33 The African Governance Architecture is a platform for dialogue between the various African Union stakeholders that are mandated to promote good governance and strengthen democracy in Africa, in addition to translating the objectives of the legal and policy pronouncements in the African Union Shared Values. The African Governance Architecture platform is composed of organs, institutions and regional economic communities of the African Union with a formal mandate to promote democracy, governance and human rights in Africa (http://aga-platform.org/about).

(b) The rights of data subjects, including the right to information about the data held, the right to access that information, the right to object to its processing and the right to have incorrect personal data updated or amended, will be respected.

(c) Effective security measures to prevent violations of the right to privacy through means such as encryption and anonymization will be adopted.

(d) Interference with privacy through the sharing of biometric data of individuals between States or third parties will comply with the human rights requirements of legality, legitimacy, necessity and proportionality.

(e) The implementation of any biometric system will be subject to monitoring by independent data protection authorities or other competent mechanisms comprising experts on privacy and human rights.

(f) Effective remedies that afford redress to victims of violations of the right to privacy brought about through the unlawful processing of biometric data will be adopted.

Lastly, on the basis of elaborations by the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression,[34] it is recommended that private companies involved in the processing of biometric data should be required to undertake due diligence processes, mainstream human rights safeguards into all activities, initiate stakeholder engagements, adopt mitigation strategies to address State restrictions on the right to privacy, ensure transparency in States' requests and provide effective remedies in cases where rights are violated.

34 A/HRC/35/22.

Technology transfer-related aspects of the global digital trade regime: implications for the right to development of countries in Africa

Jean Bertrand Azapmo

A. Introduction

Digital trade has transformed international trade in recent years, driven by the rapid pace of technology change and innovation which has the potential to increase productivity and enable more sustainable economic growth. Unfortunately, the current technological and digital gaps that most developing countries continue to face will leave them at the periphery of the fourth industrial revolution.

The use of international trade law to promote international technology transfer to developing countries remains a challenge. The issue is that recent attempts, in particular through expanded and strengthened protection of licensing and patenting, have proven to be limited in terms of scope and largely ineffective in terms of impact. In addition, a number of submissions – some of which have technology transfer-related aspects – were tabled at the World Trade Organization (WTO) in order to advance the discussion on a global regime to govern digital trade.

The central question explored in the present think piece, therefore, is the following: under which parameters can technology transfer-related aspects of the global digital trade regime help countries in Africa to achieve the Sustainable Development Goals and ultimately realize their right to development?

The research presented here is important for three main reasons. First, given the centrality of technology to development in the digital era, the ability of a country to possess or to acquire and utilize technology determines its economic performance and competitiveness. Technology is essential for the achievement of the Sustainable Development Goals, and, ultimately, the realization of the right to development, which is inextricably linked to other human rights, in particular health, education and a clean environment. Second, the think piece is aimed at providing policy recommendations for a more inclusive international trade system that leaves no country behind. Finally, with the aim of finding solutions for Africa, the think piece contains an exploration of the issues of technology transfer, absorption and development in the context of the Agreement Establishing the African Continental Free Trade Area.

Two main concepts are used in the present think piece. The first is technology transfer, which is the process of transfer of systematic knowledge or methods for the manufacture of a product, the application of a process or the

rendering of a service.[1] Technology transfer was traditionally conceptualized as the transfer of technical machinery and equipment, as well as knowledge, through reverse engineering, the purchase of patents and licences, industrial property rights and other proprietary technology (so-called "hard" technology). However, it has become more complex in the context of the knowledge-based economy. Technology transfer now involves information and data, source code and algorithms – for example, a computer software program or a new idea – also referred to as "soft" technology.

The second concept is the right to development. According to article 1, paragraph 1, of the Declaration on the Right to Development, it is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized.[2] The right to development has individual and collective dimensions. Article 3, paragraph 1, of the Declaration provides that States have the primary responsibility for the creation of national and international conditions favourable to the realization of the right to development. This is reinforced by article 4, paragraph 1, in which it is noted that States have the duty to take steps, individually and collectively, to formulate international development policies with a view to facilitating the full realization of the right to development.

The individual and collective responsibility of States for the realization of the right to development is also articulated in Sustainable Development Goal 17, on revitalizing the Global Partnership for Sustainable Development. With regard to individual responsibility, States are enjoined to respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development (Goal 17, target 15). In terms of collective responsibility, the international community is called upon to promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed (Goal 17, target 7).

Our main hypothesis is as follows: technology transfer-related aspects of the global digital

1 The process of technology transfer includes the assignment, sale and licensing of all forms of industrial property; the provision of professional know-how, and technical and entrepreneurial expertise; the provision of technological knowledge; and the provision of the technological contents of industrial and technical cooperation arrangements.

2 General Assembly resolution 41/128, annex. See also art. 22, para. 1, of the 1981 African Charter on Human and Peoples' Rights.

trade regime that restrict the right of developing countries to freely determine the best mix of policies they can pursue are likely to affect the ability of countries in Africa to achieve the Goals and, ultimately, to realize their right to development in the digital era.

In Section B, we undertake a legal analysis of recent e-commerce proposals for a global digital trade regime at WTO, focusing on their technology transfer-related aspects. Section C includes an examination of some policy recommendations to mitigate the negative impact of current proposals on countries in Africa. It contains a discussion on a comprehensive collaborative approach at the multilateral level, combined with a new model of intraregional technology transfer in the context of the Agreement Establishing the African Continental Free Trade Area.

B. Review of technology transfer-related aspects of current proposals of the global digital trade regime

1. A market-based approach to technology transfer

Two of the current proposals of the global digital trade regime (submissions by Japan and the United States of America)[3] contain elements related to technology transfer. Those elements are as follows:

(a) Digital trade rules should be aimed at barring forced technology transfer (suggestion by the United States).

(b) Digital rules should prevent data localization as a condition of market access (suggestion by Japan and the United States).

(c) Global digital trade rules should not require the transfer of or access to source code of software as conditions of market access (suggestion by Japan and the United States).[4]

Those proposals are similar to provisions adopted in the e-commerce chapter of the Trans-Pacific Partnership Agreement. On the one hand, article 14.13, paragraph 2, of the Agreement states that no party is to require a covered person to use or locate computing facilities in that party's territory as a condition for conducting business in that territory. On the other hand, article 14.17, paragraph 1, provides that no party is to require the transfer of, or access to, source code of software owned by a person of another party, as a condition for the import, distribution, sale or use of such software, or of products containing such software, in its territory.

On the surface, these proposals appear innocent and can be justified as necessary to maintain an open Internet society and prevent countries from erecting new types of non-tariff barriers to cross-border digital trade, which have the potential to increase trade costs, discourage foreign direct investment (FDI), and, ultimately, affect technology transfer. In a communication paper, the United States argued that conditioning market access on forced transfers of technology deterred foreign investment and prevented local firms from accessing world-class digital services.[5] According to the United States, global digital trade rules should ensure that companies are not required to build or employ unique, capital-intensive digital infrastructure in every jurisdiction they serve. Similar to the United States' argument is the justification put forward by Japan, which considers

3 WTO, documents JOB/GC/180 and JOB/GC/177, for Japan; and JOB/GC/178 for the United States. These proposals are being opposed by a number of developing countries on the grounds that there is still no mandate at WTO to negotiate e-commerce disciplines.

4 JOB/GC/178, pp. 2–3, for the communication from the United States and JOB/GC/180, p. 1 and JOB/GC/177, p. 2, for the communication from Japan.

5 JOB/GC/178, pp. 2–3.

that mandatory requirements by a Government to locate servers within its territory would discourage companies from entering into its market, owing to the increased costs and risks associated with such requirements. In addition, the suggestion to prevent countries from requiring the disclosure of source code and trade secrets as a condition of market access, follows a logic that may seem to be acceptable from the perspective of intellectual property rights and international competition. In its submission, the United States indicated that, given that the most innovative participants in the digital economy are in the business of investing in and monetizing proprietary information, any condition on market access that requires the disclosure of such information puts those business models at risk, in particular if such a disclosure results in the transfer of that information or technology to a competitor.[6] On the basis of the above, one can infer that technology transfer-related aspects of the current regional and global digital trade regimes are influenced by a market-approach to technology transfer. Following this approach, international trade laws should not impose obligations to transfer technology.[7] Rather, they should create the conditions for the seamless flow of goods, services and FDI to take place and ensure a strong protection of intellectual property rights,[8,9] which will in return facilitate technology transfer.

However, technology markets are associated with a number of market failures, such as increasing returns, imperfect competition and externalities, which result in a suboptimal amount of international technology diffusion, as is currently the case.[10] A total of 42 countries in Africa are parties to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), by virtue of their membership in WTO. In addition, 53 countries in Africa are members of the World Intellectual Property Organization (WIPO), of which 47 are members of the Patent Cooperation Treaty. Despite these facts, the share of FDI belonging to Africa remains negligible and continues to decline. In 2017, that share totalled $42 billion (down from $53 billion in 2016) and comprised only 2.9 per cent of global FDI (estimated to be $1.43 trillion in 2017).[11] In addition, all countries in Africa are concentrated at the bottom of the Competitive Industrial Performance Index, owing to their low total factor productivity, among other reasons.[12] Many countries in Africa also rank low in the Global Competitiveness Index Ranking: 16 of the 36 countries in Africa surveyed have a score of less than 3.5, which is the average score of the Index. This suggests that the protection of intellectual property rights, which is an important catalyst of technology transfer, does not necessarily translate into FDI flows.

Having reviewed the technology transfer-related aspects of current proposals for the digital trade regime, which follow the traditional market-based approach to technology transfer and do not therefore represent a departure from the current approach, we now examine how they impact the right to development of countries in Africa.

6 JOB/GC/178.

7 Bernard Hoekman and Beata Javorcik, eds., *Global Integration and Technology Transfer* (Washington, D.C., Palgrave Macmillan and the World Bank, 2006).

8 Beata Smarzynska Javorcik, "The composition of foreign direct investment and protection of intellectual property rights: evidence from transition economies", European Economic Review, vol. 48, No. 1 (2004), pp. 39–62.

9 Keith E. Maskus, "Intellectual property rights and foreign direct investment", Centre for International Economic Studies Working Paper No. 22 (Boulder, Colorado, University of Colorado, 2000).

10 Carlos M. Correa, "Review of the TRIPS agreement: fostering the transfer of technology to developing countries", Third World Network Trade and Development Series, No. 13 (Penang, Malaysia, Third World Network, 2001).

11 *World Investment Report 2018: Investment and New Industrial Policies* (United Nations publication, Sales No. E.18.II.D.4), pp. 3 and 38.

12 Economic Commission for Africa (ECA), African Union and African Development Bank, *Assessing Regional integration in Africa (ARIA) VII: Innovation, Competitiveness and Regional Integration* (Addis Ababa, 2017).

2. A "disguised barrier" to technology transfer with the potential to undermine the right to development of countries in Africa

Two aspects of the right to development will be examined. The first is the duty of States acting individually to formulate appropriate national development policies for the realization of the right to development.[13] From a technology transfer standpoint, this implies the flexibility that individual countries have to self-determine the types of policies they wish to pursue in order to achieve technology transfer. In practice, that approach may include the use of technology transfer, data localization or disclosure of source code as a requirement for market access. At present, that flexibility is guaranteed in several WTO agreements. For example, article XIX (2) of the General Agreement on Trade in Services allows developing countries to impose requirements when granting market access to foreign suppliers of services, including for commercial presence and movement of natural persons, which intersects with technology transfer, with a view to achieving the objectives set out in article IV of the General Agreement.

By proposing that global digital trade rules should bar the use of technology transfer as a market access requirement, current proposals appear as a "disguised barrier" to technology transfer in the sense that they restrict the policy space of countries in Africa and will affect the flexibility recognized under existing agreements, such as article XIX (2) of the General Agreement on Trade in Services, to self-determine the types of market access conditions they want to set up for commercial presence and movement of natural persons. The implication is that countries in Africa will be deprived of a policy instrument that several countries have previously used to achieve their current performance. The policy of China requiring that foreign investors in certain industries form a joint venture with a partner in China has been successful in encouraging technology transfer from foreign investors to domestic operations.[14] At the moment, a small number of developing countries, including some countries in Africa such as Nigeria,[15] have legislation that requires technology transfer or data localization for economic development purposes (see box 1). Those countries will therefore be affected by current global digital trade rules.

The second dimension of the right to development that is likely to be affected by technology transfer-related aspects of the current global digital trade rules is the collective dimension.

The proposals to prohibit the use of certain policies to achieve technology transfer is likely to have negative impacts on the policy space and the right of developing countries to self-determination under articles 3.3 and 4.1 of the Declaration on the Right to Development. Under these articles, States have the primary responsibility, acting together in global and regional partnerships, to create international conditions favourable for the realization of the right to development.

By prohibiting countries from resorting to certain types of policies to facilitate technology transfer – for example, the use of technology transfer, data localization and disclosure of source code as a market access condition – the current proposals are more restrictive and less ambitious in this regard. First, despite the weaknesses of the TRIPS Agreement with regard to technology transfer, it does not contain

13 Declaration on the Right to Development, art. 3, para. 2; art. 4, para. 1; art. 6, para. 2; and art. 8, para. 1.

14 Kun Jiang and others, "Joint ventures and technology transfer: new evidence from China", 15 April 2018.

15 Federal Ministry of Communication Technology and Nigerian Communications Commission, "Guidelines for Nigerian content development in information and communications technology (ICT)" (Abuja, National Information Technology Development Agency, 2013).

Box 1

Data localization legal framework in Nigeria

In 2014, Nigeria enacted the "Guidelines for Nigerian Content Development in Information and Communications Technology". The Guidelines require that all subscriber, government and consumer data should be stored locally, and one of the strategic goals is to support technology transfer, indigenous participation and the survival of local players in the sector.

such prohibitive language. On the contrary, article 66.2 of the TRIPS Agreement provides that developed country members should provide incentives to enterprises and institutions for the purpose of promoting and encouraging technology transfer to least developed country members in order to enable them to create a sound and vital technological base.

In addition, technology transfer-related aspects of current proposals of the digital trade regime also go against similar aspects of other international laws, which recognize that the development, transfer, adaptation and diffusion of technology and the building of related capacity are crucial for bridging technology gaps, with a view to realizing the right to development that is inextricably related to other social and economic rights. Examples include the following: article 16, paragraph 2, of the Convention on Biodiversity; article 4, paragraph 1(c), of the United Nations Framework Convention on Climate Change; and article 18, paragraph 1, of the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa.

Most importantly, current proposals go against the efforts of the international community to ensure that technology transfer happens so as to enable developing countries to achieve the Sustainable Development Goals and, ultimately, to realize their right to development. In effect, targets 6 and 7 of Goal 17 call for the enhancement of the North-South, South-South and triangular regional and international cooperation in science and technology, in addition to the promotion of the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.

Having reviewed technology transfer-related provisions of the global digital trade regime and how they will impact the ability of countries in Africa to achieve the Goals and realize the right to development, we will now examine how to mitigate that impact.

C. Policy recommendations to mitigate the potential negative impact of technology transfer-related aspects of current proposals of the global digital trade regime on the right of countries in Africa to development

With regard to policy recommendations to mitigate potential negative impacts of current proposals, a dualistic approach centred on two pillars is recommended.

1. A comprehensive collaborative approach to technology transfer at the multilateral level

The point of departure in this regard is that, at present, countries are at different levels of technological development. While progress has continued to be made in access and use of information and communications technology (ICT) in almost all countries, according to the 2017 ICT Development Index, there are still great disparities in ICT development between more and less connected countries. In addition, the state of science, technology

and innovation in most countries in Africa remains poor, owing to a number of factors, including limited expenditure in research and development, which in turn affects the capacity to generate, access and utilize scientific and technological knowledge. In this context, there is a need for a collaborative and consensus-based approach at the multilateral level to arrive at improved technology transfer-related provisions that address the unique situation of the least technologically advanced countries, which are latecomers. That approach is based on three elements.

The first element is differentiation. Rather than a blank prohibition of barring technology transfer and the use of data localization and disclosure of data source code as a condition for market access, under the global digital trade regime the least technologically advanced countries should be granted the flexibilities and exemptions necessary to enable them to achieve the Sustainable Development Goals and realize their right to development. This approach would recognize that the right to development integrates economic, social and cultural rights with civil and political rights, which are all interrelated and interdependent, and that one cannot enjoy one group or class of right at the expense of others.[16] The determination of the least technologically advanced countries category would be informed by a number of indicators developed by relevant bodies of the United Nations, such as the ICT Development Index. The merit of using a new category rather than the traditional "special and differential treatment" concept at WTO is that the new category would be based on objective criteria that relate to the technological capacities of countries (for example, current digital performance and readiness). In addition, those countries that reach an agreed level of the Index will graduate from their status of least technologically advanced and cease to benefit from the flexibilities offered. Finally, the new category will help avoid the current debate at WTO regarding the reform of the special and differential treatment concept.

The second element is the need for mandatory language for technology transfer-related provisions under a global digital trade regime, borrowing from the language of paragraph 12 of the *Decision on Implementation-Related Issues and Concerns*. The language in that paragraph provides that the provisions of article 66.2 of the TRIPS Agreement, which encourage technology transfer to least developed countries, are mandatory. In addition, another source of language for the provisions is the Doha Declaration on the TRIPS Agreement and Public Health of 14 November 2001. This will help address the inefficiency of current technology transfer-related provisions, which is attributed to the "best endeavour" language of existing provisions.

The third element relates to the need for a comprehensive aid-for-digital-technology programme to facilitate digital technology transfer and enhance the absorptive and adaptation capacities of least technologically advanced countries. In order to avoid duplication, it would be necessary to consolidate the fragmented programmes under existing international and regional mechanisms, which include the following: the Technology Facilitation Mechanism; the Technology Bank; and the science, technology and innovation capacity-building mechanism for least developed countries envisaged under Sustainable Development Goal 17 and WIPO GREEN. In order to enhance the effectiveness of the aid-for-digital-technology programme, there would also be the need for a monitoring mechanism to ensure that technologically advanced countries live up to their commitments.

16 This approach is used in the context of climate change, where it is acknowledged that there is a need to relax the strong patent protection for developing countries.

2. Promoting a new model of intraregional provisions related to technology transfer under the African Continental Free Trade Area

The African Continental Free Trade Area creates an attractive continental market of 1.2 billion consumers with a combined gross domestic product of more than $3 trillion. Currently, the Area covers trade in goods, trade in services and dispute settlement. While it is envisaged that investment, intellectual property rights and competition policy will be covered under phase II of the negotiations, countries in Africa have not yet decided on whether to expand the scope of the Area to include rules for digital trade.

Given the strong linkages between technology transfer on the one hand, and intellectual property rights, investment and competition on the other, it appears that phase II of the negotiations represents an opportunity for countries in Africa to promote a new model of intraregional technology transfer-related provisions. This policy recommendation builds on an earlier approach to technology transfer, contained in the treaties of several existing continental regional integration organizations within Africa.[17] However, unlike the traditional approach relating to intraregional technology transfer and development, which only emphasizes the promotion of regional cooperation and the establishment of regional multinational enterprises to develop and transfer technology among participating countries, this new model recommends that the requirement to transfer technology should also apply to foreign companies, since they access the lucrative African market. In addition, considering the strategic importance of data and algorithms, the requirement to disclose and facilitate the transfer of and access to non-personal data, source code and algorithms could also become a market access condition to the Area market.

Two options for the operationalization of the new approach would be available to countries in Africa: the first would be to include a "traditional" clause on technology transfer in the Agreement Protocols on Investment and Intellectual Property Rights. The second would be a more corporate approach, whereby all companies (both those in Africa and foreign companies) doing business in the Area market would commit, under a code of conduct of guidelines for doing business under the Area, to transfer technology. In this regard, the "Guidelines for good business practice by South African companies operating in the rest of Africa" could serve as a model. According to Principle 10 of the Guidelines, companies should strive to employ local labour, and undertake appropriate skills and technology transfers to help build human capital in accordance with South Africa and the host country's developmental objectives. In order to ensure the effectiveness of this new approach, there would be a reporting and monitoring mechanism that technology companies would use to report periodically on concrete measures undertaken.

D. Conclusion: beyond technology transfer

The purpose of the present think piece was to determine the parameters within which technology transfer-related aspects of the global digital trade regime could facilitate technology transfer, thereby enabling countries to achieve the Sustainable Development Goals and realize their right to development. An analysis of the current proposals shows that they have the potential to undermine the right and policy space of countries in Africa to self-determine the types of policies they

17 Examples include the following: art. 4, para. 2 (e), and art. 49 (h), of the Treaty Establishing the African Economic Community; art. 26, para. 3 (i), of the Revised Treaty of the Economic Community of West African States of 1993; art. 100 (d), and art. 103, para. 2, of the Treaty Establishing the Common Market for Eastern and Southern Africa of 1993; arts. 80, 102 and 103 of the Treaty Establishing East African Community; and art. 5, para. 2 (f), of the Treaty of the South African Development Community.

implement to facilitate technology transfer. In addition, those proposals could undermine the efforts of the international community to facilitate the transfer of technology to countries in Africa, and other developing countries. Going forward, we recommend a comprehensive and collaborative approach at the multilateral level, based on the concept of least technologically advanced countries and the promotion of a new model of intraregional technology transfer-related provisions under the African Continental Free Trade Area.

Beyond technology transfer, there is a need to also focus on the types of policies needed to enhance the capacity of countries in Africa to absorb the technologies imported and, most importantly, to produce the endogenous technology necessary to address their unique developmental challenges. This is critical in enhancing the participation of countries in Africa in South-South and triangular cooperation on access to science, technology and innovation, as well as in knowledge sharing, as envisaged in target 6 of Sustainable Development Goal 17.

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Digital work, young people and informal employment in Africa

Ify Ogo

"Youth" (as a stage or phase of existence) and "young people" are defined by the African Youth Charter as individuals between the ages of 15 and 35.[1] The potential of young people in Africa, if effectively harnessed, can derive a demographic dividend. They represent assets that are the energetic driving force capable of achieving the continent's aspirations of economic development, as expressed in Agenda 2063: The Africa We Want of the African Union.

The large population of young people is considered potentially beneficial and advantageous in the context of the sizeable older demographic of other regions.[2] However, it should be noted that young people do not constitute a homogenous grouping. They vary markedly in both their characteristics – including gender; location (for example, rural, semi-urban or urban); literacy, education and skill levels; and occupations – and their in culture and notions of identity. These differences notwithstanding, Africa's population of young people is well-positioned to drive the approaches to innovation and implement the strategies that will be decisive in achieving the economic aspirations of the continent as recognized in Agenda 2063 (see the table below).

On this basis, it can be argued that the achievement of the economic aspirations of the African continent are closely intertwined with the economic prospects and potential of its young people. Their numerical advantage notwithstanding, there have been strong sentiments expressed that young people do not fully and effectively participate in the decision-making systems that shape their lives. Exclusion, as framed within the political sphere, has been highlighted by movements and initiatives including Not too Young to Run in Nigeria, and Y'en a Marre in Senegal. In the economic context, the African Development Bank has noted that the youth unemployment rate is likely to be twice as high as it is for adults, and has observed that it is

Elements contained in Goals 54, 57 and 58 under Aspiration 6 of Agenda 2063 of the African Union

Goal 54	The youth of Africa shall be socially, economically and politically empowered through the full implementation of the African Youth Charter.
Contained in Goal 57	Youth unemployment will be eliminated, and Africa's youth guaranteed full access to jobs and economic opportunities.
Contained in Goal 58	The creativity, energy and innovation of Africa's youth shall be the driving force behind the continent's political, social, cultural and economic transformation.

Source: Agenda 2063.

1 African Union, *AU Roadmap on Harnessing the Demographic Dividend Through Investments in Youth* (Addis Ababa, 2017).

2 See Eurostat Statistics Explained, "Population structure and ageing", 4 February 2013, and Asian Development Bank, "Population and aging in Asia: the growing elderly population", 18 January 2017.

harder for young women to obtain jobs than it is for young men. A total of 60 per cent of unemployed persons in Africa are categorized as young people.[3] Importantly, a significant proportion of young people in employment are considered to be underemployed and informally employed.[4] As a result, many young people, although ostensibly employed, can be considered to be working poor.[5]

In the digital age, the prospects of young people in Africa are buoyed by platforms that aggregate and enable engagement with work opportunities within and across national borders. In addition, the entry barriers to digital work are often lower than those to traditional forms of employment. Furthermore, digital platforms ostensibly enable autonomy for workers through flexibility in working arrangements as the type and frequency of engagements are determined by workers themselves. In the following sections, the two main categories of digital platforms for trade in services are explored, after which the challenges associated with informality in digital work are discussed. Finally, potential policy responses are considered in relation to two continental instruments: the African Youth Charter and the African Continental Free Trade Area.

A. *Digital platforms for work*

The last decade has witnessed a rapid increase in digital work. This is associated with increasing penetration and adoption of technologies, including the use of mobile devices and the Internet, on the continent.[6] Technologies and digital platforms have significantly contributed to the creation of new forms of employment and work opportunities as outlined below:

- Social media platforms or e-commerce marketplaces through which young people connect with potential clients. While these platforms are not explicitly established for the purpose of promoting employment, they are often used to source work opportunities. For example, entrepreneurs and businesses advertise through social media platforms, including Facebook, Instagram, WhatsApp, LinkedIn and other country- or industry-specific platforms. In these cases, there is a direct relationship between consumers and service providers, because the platform does not participate in the negotiation of terms or delivery of service.

- Digital employment agencies are platforms are built on business models of "matching", that is, connecting users and service providers. Examples of these types of platforms are Uber, Tuteria and Freelancer.com. Increasingly, digital platforms are the media through which young people source opportunities, deliver services, receive remuneration, and build work portfolios and professional reputations. While there is not a formal contract of employment between the service provider and the platform, they must accept the terms and conditions of use set by the digital employment agency. In this case, agencies catalogue and aggregate opportunities for workers and clients, even as they establish the terms of engagement and service delivery. Typically, workers are independent contractors who operate through agency channels which receive a portion of their earnings. In addition, they serve as the interface for payments, complaints, redress and resolution. In effect, these platforms are gatekeepers which determine levels of access to, and reward from, work opportunities.

3 Kingsley Ighobor, "Africa's jobless youth cast a shadow over economic growth", *Africa Renewal*, Special edition on youth (2017).

4 See International Labour Organization (ILO), Africa, "Youth employment in Africa", Available at www.ilo.org. and Stephen Hunt, Stacie Irwin and Philip Mader, "Africa's youth employment challenge: what's youth got to do with it?", Institute of Development Studies, 9 July 2018.

5 See ILO, "Youth unemployment challenge worsening in Africa", press release, 24 August 2016.

6 GSMA, *The Mobile Economy 2018* (London, 2018).

A further distinction can be made between "crowdwork", in which assignments are delivered virtually, and on-demand work that is app-based and through which traditional tasks, for example cleaning or driving, are conducted.[7] Digital platforms serve as enablers for employment since they facilitate engagement with work opportunities. In addition, they have been associated with flexibility in that workers are able to determine the frequency of work, thus allowing them higher levels of autonomy than in traditional employment. Nonetheless, it is important to locate the benefits of these within the broader contexts of national economic policies and development agendas. There have also been questions concerning the behaviour of digital platforms with regard to tax avoidance,[8] and issues of undue influence in policy and governance systems.[9] For African economies, the advent of digital work presents an additional challenge wherein digital platforms create opportunities, but may propagate high levels of informality. It has been estimated that over 60 per cent of work in Africa occurs within the informal sector.[10] Some of the challenges associated with informality in employment, in particular those challenges that arise from digital work, are discussed in the next section.

B. *Digital work and informal employment: issues to consider*

Informal work poses challenges to workers, businesses, consumers and Governments, including the following:

- Workers under informal contracts of engagement are unlikely to access rights, protections and benefits provided by law, for example, pensions, paid leave, dispute resolution and insurance. In addition, there is the possibility of illegality or unfairness in contractual terms, especially where the greater share of bargaining power lies with the client or the matching agency.

- Consumers are exposed to risks arising from work that may be uncertified and unregulated, especially on social media platforms where the quality and delivery of work is negotiated directly with the service provider, and avenues for complaints and redress are limited since these platforms do not necessarily offer guarantees or warranties.

- Governments are deprived of tax revenues when transactions and services are unregulated and unobserved. In addition, fulfilment of the responsibility to protect consumers is inhibited, even as data for economic planning are largely unavailable. Importantly, Governments are constrained in the protection and enforcement of labour rights.

Digital work can be said to be pursued on the basis of unequal negotiating and bargaining power, which is manifested in the following ways:

- Access to marketplaces is conditional upon acceptance of the terms set by platforms; users accept terms of use and policies at the time of account creation. Through technology (mobile and Internet), personal information, including identity, location and preferences are provided to platforms in exchange for access. In addition, where the platform determines that the user has violated or breached the terms of use, it may choose to unilaterally suspend or disable accounts.

7 Valerio De Stefano, "The rise of the 'just-in-time workforce': on-demand work, crowdwork and labour protection in the 'gig-economy'", Conditions of work and employment series; No. 71 (Geneva, ILO, 2016).

8 Financial Times, "The global hunt to tax Big Tech", 2 November 2018.

9 Carole Cadwalladr and Emma Graham-Harrison, "Revealed 50 million Facebook profiles harvested for Cambridge Analytica in major data breach", *The Guardian*, 17 March 2018.

10 ILO, "Five facts about informal economy in Africa", press release, 18 June 2015.

- Intellectual property is not particularly well-protected by some digital platforms, especially social media platforms. For example, to use Facebook and Instagram, users assign an intellectual property licence, which is "non-exclusive, transferable, sublicensable, royalty-free and worldwide to host, use, distribute, modify, run, copy, publicly perform or display, translate and create derivative works of content".[11] While it can be argued that a trade-off is necessary, digital platforms do provide access to markets across borders at a significantly reduced cost when compared with traditional channels for marketing. However, the disparity and imbalance in the rights of platforms versus the rights of workers point to the inequality of bargaining power. The ability of platforms to sell or otherwise transfer rights relating to identity and personal information without the knowledge of the user, as well as the rights conferred upon platforms to monetize the data and content provided – in particular the royalty-free and transferable elements – are contentious. The licence that is provided allows platforms to monetize that content without conferring rights to that revenue to the users or content providers. In addition, although subject to the privacy and application settings adopted by the user, the agreement is non-negotiable and can be withdrawn only upon deletion of the user account. Conversely, there are strict limitations on the use of intellectual property rights on these platforms, in that they retain the rights to their intellectual property and content.

- Disputes involving workers and users of digital platforms can usually rely upon the laws in their jurisdiction of residence.[12] Otherwise, any claims are likely to be subject to the jurisdiction of the courts where the digital platform is legally incorporated. In addition, digital platforms, whether social media platforms or digital employment agencies, will often disclaim or limit liability for the actions or inactions of third parties. This renders it difficult for users to bring claims against them for injury, loss or damage arising from their use.

Furthermore, digital employment agencies engage workers as individual contractors and determine the type of, and remuneration for, services offered to clients.. These agencies retain significant control over the process of contracting and service delivery. Nonetheless, the terms of use typically disclaim liability for injuries arising from delivery of services undertaken by contracted individual contractors.[13] Social media and e-commerce marketplaces assign the same type of licence to different types of users, that is, potential workers and clients or consumers all engage with platforms on the same terms and conditions. These platforms are used for a variety of purposes. They do not explicitly or implicitly claim to provide employment or agency services, and they do not participate in the process of negotiation, contracting or service delivery. As a result, work-related rights are not specifically protected or enforced through platform terms of use. While there are measures to protect the misuse of data by third parties,[14] such measures are limited and are generally enforced by the platform upon request or a claim made by a user. In effect, social media platforms are marketplaces where users assume risk and responsibility for work-related activities.

Both social media and digital employment agencies are likely to disclaim liabilities arising

11 Facebook, "Terms of service". Available at www.facebook.com/terms.php.

12 See policies of digital platforms (Facebook, Instagram, Twitter, LinkedIn, LittleCab, Tuteria).

13 See terms of use for Uber and Tuteria.

14 Users agree not to misuse personal and property rights of third parties and platforms can remove content which is reported as misused. See Facebook and Instagram policies.

from the behaviour of third parties. In the case of digital employment agencies, this is especially problematic since the clients are sourced through them and they receive a percentage of remuneration that they collect on behalf of young workers. The platforms set the standards for their use, as well as the ratings systems for service providers. In this way, the policies of the platforms determine the levels of access and opportunity to work.

These issues show that there is an urgent need for greater dialogue and policy intervention in the area of digital work. Debate is growing as to the nature of work in the digital era, and questions persist as to the legality of contracts offered by digital employment platforms, as well as whether the terms and conditions of the work acquired are decent or not.[15] Typically, digital workers are essentially freelancers or individuals obliged to satisfy the terms and standards instituted by digital platforms or virtual employers, working without the protections and benefits offered in regular employment contracts and mandated by law in many jurisdictions such as a minimum wage, health and occupational insurance, paid leave and pensions. The current structure of digital work suggests that there is a significant risk that the existing levels of informality will be maintained or exacerbated, together with the associated impacts on working conditions and livelihoods. Recent attempts by digital workers to organize collective strike action and to unionize – for example, Uber driver strikes in Kenya and Nigeria[16] – highlight both the importance of these issues for digital workers and the necessity of policy intervention. As such it is necessary to consider possible policy responses, some of which are discussed in the section below.

C. *Addressing informality in digital work through continental policy frameworks*

The large segment of the African population made up of young people naturally forms the bulk of the workforce on the continent, and it is this group that is more likely to be engaged in informal employment within traditional sectors. Digital work may be more appealing to young people, especially because the entry barriers are often lower for digital work than for other types of work.[17] It follows that young people will be disproportionately affected by informality and associated issues surrounding digital work.

As stated above, young people are expected to be the driving force towards the realization of Agenda 2063. There is a continental instrument – the African Youth Charter – which encapsulates the role of young people in the development of Africa. The Charter stipulates 25 distinct rights to be protected and enforced by African Union member States. These rights can be organized into political, social and economic rights. The Charter was adopted in July 2006, and entered into force in August 2009. To date, a total of 42 countries in Africa have signed this instrument, and 38 countries have deposited instruments of ratification with the African Union Commission.[18]

Article 1 of the Charter stipulates the responsibilities and obligations of State parties to recognize the rights, freedoms and duties enshrined in the Charter. It also mandates States to domesticate the Charter, thus rendering it applicable within national legal systems. The right to work is protected in article 11, paragraph 1, which states that every young person shall have the right to participate in all

15 Sangeet Paul Choudary, *The Architecture of Digital Labour Platforms: Policy Recommendations on Platform Design for Worker Well-Being*, ILO Future of Work Research Paper Series, No. 3 (Geneva, ILO, 2018).

16 See Njeri Mbugua and Carol Kubwa, "Uber, Taxify drivers plan Tuesday strike to press for higher fare rates", *Star*, 14 September 2018; and "Why we went on strike, Abuja Uber drivers", Premium Times (Abuja), 4 February 2019.

17 Gavin Michael and Scott Armstrong, "How innovation and technology lowered the barrier to entry like never before", Forbes, 3 November 2015.

18 African Union, "List of countries which have signed, ratified/acceded to the African Youth Charter", 15 June 2017.

spheres of society. Article 13 articulates the obligation of State parties to provide opportunities and resources for education and skills acquisition. Specifically, article 13, paragraph 5, notes the commitment of youth to transform the continent in the fields of science and technology. Article 14, paragraph 1, recognizes the right of young people to a standard of living adequate for their holistic development, and article 14, paragraph 3, stipulates rights to social security.

The purpose and nature of employment is expressed in article 15, paragraph 1, as gainful employment. State parties are mandated by article 15, paragraph 2, to ensure protection from economic exploitation and work which has the potential to interfere with education, or pose harm to their health and holistic development. These rights are to be protected by State parties in order to ensure equal access to employment and equal pay for equal work. State parties should also develop measures to regulate the informal economy to prevent unfair labour practices where the majority of young people work (article 15, paragraph 4).

The African Youth Charter is itself underpinned by the African Charter on Human and Peoples' Rights, which establishes obligations on African Union member States, as well as safeguards and enforcement mechanisms through the African Commission on Human and Peoples' Rights, which can impose penalties on States that violate the rights of citizens. The economic rights identified in the African Charter on Human and Peoples' Rights include the right to work (article 15), the right to education (article 17) and the right to free disposal of wealth and natural resources (article 21).

The African Youth Charter and the African Charter on Human and Peoples' Rights are both signed and ratified by Governments, which assume the responsibility for the protection of rights and enforcement. However, the rise of the digital economy in Africa, and especially the advent of digital platforms through which young people find and pursue work opportunities, has transformed orthodox notions of contractual obligations, responsibilities, benefits and enforcement. While it would be difficult for Governments to supervise the terms of work sourced through digital marketplaces, there is an obligation arising from the African Youth Charter for Governments to protect and enforce the rights of young people. The typical approach for governmental regulation is to assess the extent to which the policies and practices of those agencies are compatible with national legal and regulatory frameworks that govern employment and work, in order to determine the appropriate classification of businesses and to prescribe the standards and requirements of policies that would enable the proper treatment of digital workers. However, in practical terms, there are limitations on the extent to which individual Governments may negotiate terms with, or apply legal or regulatory provisions on, digital platforms. This is true irrespective of whether these are social media platforms or digital employment agencies; the majority of digital employment agencies are not incorporated within all countries operation nor do they necessarily maintain country offices. In addition, attempts to apply digital regulations may be of limited effect, and may only serve to diminish work opportunities.

It can be argued that globally, regional groupings have proven more effective than individual countries in the regulation of technology giants.[19] In this regard, it is useful to consider regional approaches to regulation of the digital economy, as seen through instruments such as the General Data and Privacy Regulations of the European Union, which clearly sets out the rules applicable to the storage and use of

19 See Mark Scott, "E.U. fines Facebook $122 million over disclosures in WhatsApp deal", *New York Times*, 18 May 2017.

data within the European Union. Similarly, regional economic communities in Africa have introduced strategic instruments to govern aspects of the digital economy and ensure coherence in the policies of their member States as these pertain to the digital economy.[20] It is important to note that these challenges associated with informality and digital work exist in the build-up to a continental market. The Agreement Establishing the African Continental Free Trade Area, which is expected to enter into force in 2019, is intended to reduce the fractures that inhibit intra-African trade by consolidating the national markets into a single continental market. The Agreement also has the potential to enable regulatory convergence and coherence on trade issues. This could potentially incorporate digital work and digital trade in services, since there have been calls for phase II of negotiations to be extended to include the digital economy, and specifically a protocol on e-commerce.[21] Similarly, in accordance with a 2019 decision of the Executive Council of the African Union, the African Union Commission, in collaboration with the Economic Commission for Africa and member States of the African Union, will look towards the formulation of a strategy for Africa on digital trade and the digital economy which will also provide a platform for the consideration of the issues surrounding digital work. Digital trade regulations formulated within these frameworks are likely to cover trade in services, and could institute necessary obligations on digital platforms – regardless of whether these are domiciled within or outside Africa – and specify the mechanisms for the monitoring and enforcement of rights of digital workers on the continent. A continental regulatory framework would provide countries in Africa with the negotiating power of a single large bloc, and common rules can ensure that digital platforms of all sizes will be bound by the same standards.

D. Conclusions

Young people are considered to be the driving force for the achievement of continental aspirations. In the area of work, the African Youth Charter stipulates the rights of young people as related to the conditions and outcomes of employment, and places upon Governments the responsibility of enforcement. While the digital economy provides opportunities for work, there are important questions to be answered surrounding the protection of rights, especially when one takes into consideration the tendency of digital work to feature informal characteristics. Digital work generates a range of concerns; the virtual nature and identity of firms hinders attempts by Governments to apply national regulations on digital workers and digital employers. Similarly, the contracts of use issued by digital employment agencies are suggestive of employment relationships articulated as contractor arrangements. There are also issues concerning taxation and consumer protection in the digital space. These issues are of particular concern for young people, since it is this group that is more likely to be unemployed and informally employed.

These concerns are relevant to and should be integrated into policy discourse on the digital economy in Africa. With regard to digital work, guidelines or principles that emanate from continental or regional policy systems would be useful in framing the obligations of digital platforms and the rights of digital workers. In addition, a continental approach would enable cooperation and coherence to reduce the opportunity for forum shopping, or for digital firms to undermine or side-step obligations.

This sort of continental initiative will need to be preceded by a rigorous and informed analysis, which will generate a proper categorization of digital firms and present the

20 See Digital Free Trade Area of the Common Market for Eastern and Southern Africa, Economic Community of West African States (ECOWAS) and Southern African Development Community digital policies.

21 See the report of the Africa Trade Forum 2018, held in Lagos, Nigeria, on 2 and 3 November 2018.

dynamics and patterns of digital work in Africa. That analysis should also dissect issues such as terms of engagement, account for the differences between marketplaces and digital employment agencies, and consider collective subjectivities (for example, those of different regions and industries). Furthermore, it will be necessary to closely review the compatibility of regulations at the national and regional levels with the terms and conditions of digital work, in order to develop useful approaches and to ensure that the digital economy yields benefits for workers, and especially for young people.

Making digital trade work for rights and development in Africa

Anita Gurumurthy and Nandini Chami

As new global norms concerning the future of digital trade, championed primarily by China and the United States of America, are taking shape across multilateral and plurilateral policy spaces, most developing countries are not fully seized of the issues at stake. Against this backdrop, the present think-piece contains an outline of the key considerations for a digital trade policy road map for the African continent. It does this by considering two questions:

- What are the implications of dominant global digital trade policy trends for a rights-based agenda of development agenda?
- How can countries in Africa develop a concerted plan of action to effectively tackle these concerns and unlock the transformative opportunities of the digital economy?

A. Rights-based analysis of digital trade policy trends

As observed in the note by the Secretariat on the report of the Independent Expert on the promotion of a democratic and equitable international order (A/HRC/33/40), the myth of trade policy as a stand-alone regime that is an end unto itself has been successfully challenged in mainstream global policy debates on human rights and development.

In 2015, a collective statement by the United Nations Human Rights Council mandate holders warned that trade agreements were likely to have a number of retrogressive effects on the protection and promotion of human rights.[1] Similarly, in 2016, the United Nations Independent Expert on the promotion of a democratic and equitable international order drew attention to the growing negative impacts of trade agreements and the arbitration mechanisms of investor-State dispute settlement mechanisms on a wide range of basic rights: self-determination over natural wealth and resources, health, humane working conditions, peaceful assembly and association, and civic participation. In that connection, in paragraph 30 of the 2030 Agenda for Sustainable Development, Member States were strongly urged to refrain from promulgating and applying any unilateral economic, financial or trade measures not in accordance with international law and the Charter of the United Nations that impeded the full achievement of economic and social development, particularly in developing countries. Digital trade policy trends need to be examined, keeping in mind these concerns about the rights of people and of the countries in the global South.

B. Impediments to the progressive realization of economic, social and cultural rights

The International Covenant on Economic, Social and Cultural Rights places a constant and continuing obligation on States to move towards full realization of those rights as expeditiously and effectively as possible.[2] Non-discrimination and equality are cornerstones of

1 Kate Lappin, "Free trade or women's rights?", Stratfor Worldview, 4 January 2018.

2 Radhika Balakrishnan and Diane Elson, "Auditing economic policy in the light of obligations on economic and social rights", *Essex Human Rights Review*, vol. 5, No. 1 (July 2008).

that obligation for progressive realization. In effect, that means that if a State adopts economic policy measures that lead to high inequality, thereby worsening the economic and social status of groups that are already disadvantaged, the obligation for progressive realization is being violated. The ongoing push for deregulation of digital services is a threat to progressive realization. Such deregulation reduces the capacity for policy negotiation that is available to developing country Governments for managing the adverse impacts of market liberalization measures on economic rights and well-being. For example, consider the understanding on computer and related services that the European Union has made mandatory in all its free trade agreements.[3] The States adopting this understanding are forced to commit to the unrestricted cross-border provision of all digitally enabled services, with no policy space for the introduction of any future regulation of those services to correct potential market distortions. Similarly, the services chapter of the Regional Comprehensive Economic Partnership, a proposed free trade agreement currently being negotiated among States in the Asia-Pacific region, would make it mandatory for State parties to extend national treatment to all foreign service suppliers, including suppliers of digital services (that is, to treat them as they would domestic suppliers). Such conditions would make it impossible for Governments to introduce any conditional access clauses to protect domestic markets from the shocks of such unrestricted liberalization.[4] Digital and data-enabled restructuring of global value networks enables the splintering of agriculture and manufacturing sectors into chains of discrete service activities spread across the globe.[5] This emerging context is likely to result in grave consequences for the livelihood rights of the majority of the population in developing countries, as illustrated below, using ongoing developments in the Asia-Pacific region (see box 2).

C. *Mobilizing maximum available resources for the fulfilment of obligations related to economic, social and cultural rights*

States have a duty to deploy taxation and tariff regimes effectively, with a view to raising the requisite fiscal resources to build the welfare and social security net that is essential to fulfilling their economic, social and cultural rights obligations. The existing global tax regime encourages base erosion and profit-shifting strategies[6] of transnational corporations, abetting and aiding their tax avoidance strategies.[7] Developing countries are the worst affected, with corporate malpractice estimated to be responsible for up to $114 billion in lost annual tax revenues.[8] In order for developing countries with limited structural capacity to build an efficient corporate tax base, tariffs have historically been a significant source of revenue for their public investment needs.9 Neither digital trade policy proposals that call

3 Jane Kelsey, "The risks for ASEAN of new mega-agreements that promote the wrong model of e-commerce", Economic Research Institute for ASEAN and East Asia Discussion Paper Series, 3 October 2017.

4 GRAIN, "How RCEP affects food and farmers", 14 June 2017.

5 Jane Kelsey, "TiSA: Not our future! When everything is a service, a Trade in Services Agreement affects everyone – Report of the International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations [IUF]" (Auckland, New Zealand, University of Auckland, 2018).

6 Base erosion and profit shifting refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations. See www.oecd.org/tax/beps/.

7 European Parliament Think Tank, "Understanding the OECD tax plan to address 'base erosion and profit shifting' (BEPS)", 29 June 2017.

8 Roselina Press, "Developing nations lose $100bn in tax revenue each year: will G20 reforms help?", *The Guardian*, 3 November 2014.

9 Przemyslaw Kowalski, *Impact of Changes in Tariffs on Developing Countries' Government Revenue*, Organization for Economic Co-operation and Development (OECD) Trade Policy Papers, No. 18 (Paris, OECD Publishing, 2005).

Box 2

Deregulation of digital services and livelihood rights of small and marginal farmers: insights from the Asia-Pacific region

In the Asia-Pacific region, the e-commerce giant Alibaba has been using ET Agricultural Brain – its cloud-based artificial intelligence analytics platform for precision agriculture – to onboard small farmers in China, enticing them with bundled input advisories, credit, financial advisories and retail market linkage services. It is now expanding to dairy farmers in Australia and New Zealand, and is exploring forays into the Indian market. Even as it is consolidating its hold over the agro-input services market, it is entering the commodity retail market by acquiring food delivery apps.

Kartini Samon, an activist from Indonesia who works for GRAIN, an international non-profit organization that supports small farmers, reflects upon the transformation of the agriculture sector into a more service-driven industry and the impact of the same on community-controlled food systems:

> "Alibaba's business practices are symptomatic of the new business model of e-commerce companies. They are interested in 'farm-to-fork' consolidation and building cross-border supply chains of agricultural commodities. Such end-to-end control enables them to set prices in different markets, completely on their terms. Independent farmers end up losing their bargaining power. Also, in this process, when the entire agriculture sector becomes consumer-driven, marginal farmers tend to be edged out as there is no room for small-scale operations."

The Asia-Pacific region is home to 420 million small family farms that produce over 80 per cent of the food. The restructuring of the agriculture supply chain by means of the trends described above requires countries in the region to adopt new policies to protect the livelihoods of those working in the agricultural sector. Such policies could include the following measures: local sourcing quotas; the staggering of market access for transnational giants; and restricting transnational agri-platforms and e-commerce companies from owning farmland for service-related purposes. These policies are intended to maintain a level playing field for smallholder farmers and agricultural micro-, small and medium-sized enterprises. It is this space that is undermined by the proposed provisions in the Regional Comprehensive Economic Partnership for enhanced market access without any associated proscriptions, and national treatment of foreign service suppliers. This means that if a country signs on to the Partnership in its current form, it will be unable to institute policy measures for platformized agricultural services in the future.

for an increase in *de minimis* thresholds on cross-border digital trade in goods nor a permanent ban on customs duties on electronic transmissions in digital trade proposals acknowledge the reality that developing countries cannot alter their existing tariff-dependent fiscal strategies overnight. In addition, considering that the majority of developing countries are in the position of net importers in the global cross-border e-commerce market that is dominated by China, the United Kingdom of Great Britain and Northern Ireland, and the United States,[10] accepting the demand to raise *de minimis* thresholds would not be in their strategic interest. Similarly, agreeing to the permanent ban on customs duties on electronic transmissions would foreclose a future source of public revenue for economies of the global South, as the share of electronically transmitted additive manufacturing products[11] in global trade increases over time.[12]

10 Between them, China, the United Kingdom, and the United States control about 70 per cent of the global cross-border e-commerce market (Rashmi Banga, "Rising product digitalisation and losing trade competitiveness" (UNCTAD/GDS/ECIDC/2017/3)).

11 Additive manufacturing is a technique that enables the creation of complex three-dimensional (3D) products using computer designs. The Internet has enabled the rapid growth of additive manufacturing as it allows for the remote transmission of computer-aided design files to remote locations where they can be printed out on 3D printers.

12 Rashmi Banga, "Rising product digitalisation and losing trade competitiveness" (UNCTAD/GDS/ECIDC/2017/3).

D. Duty to prevent the violation of economic, social and cultural rights by business entities

The Committee on Economic, Social and Cultural Rights, in its general comment number 24 (2017), observed that States have a positive duty to adopt a legal framework that prevents and mitigates violations of the rights (specified in the International Covenant on Economic, Social and Cultural Rights) by business entities. Unfortunately, the digital trade policy proposals proposed by some countries, including the United States, contain a number of elements that compromise that duty. Some of those elements are a carry-over from pre-digital trade policy proposals, such as a ban on mandatory local presence requirements that restrict the ability of States to take actions against the violations of labour and environmental standards by transnational corporations. But a new element that becomes extremely critical to examine in that regard is the proposal for a total ban on requirements for the transfer of, access to or disclosure of source code, which has been doing the rounds at the World Trade Organization (WTO).[13] This proposal is fundamentally problematic, owing to the implied requirement of technology transfer, which is discussed by Azapmo in the present volume. The prohibition of access and disclosure requirements in relation to source code can also severely impede the ability of Governments to inspect regulatory compliance by companies, especially those offering digital services. Consider Kenya, for example, which is increasingly becoming the test case for agricultural and financial technology services. Research reveals that venture capital is enabling the proliferation of integrated farm advisory and credit service models directed at farmers, which rely on algorithmic profiling for targeting loans.[14] If there is an allegation of reverse redlining[15] in the future against one of these firms, how will the Government take action if it has signed away its rights to access source code?

E. Self-determination of right to development pathways

As recognized in the Declaration on the Right to Development, the right to development is an essential facet of the right to self-determination that is guaranteed in the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. Today, developing countries increasingly find themselves locked into the low value parts of the global digital economy.[16] Their policy frameworks in the digital context are not geared to encourage innovation that can open up new possibilities for local value creation and equitable value distribution. Developing countries need to recognize the ways in which the digital economy presents much more than an incremental change. The fact that digital intelligence obtained from big data is now a significant factor of production, enabling the complete reorganization of all economic activity, implies the urgent need for a new economic policy approach. A clear vision and road map for making good the economic advantage of data-based digital intelligence will need to include: (a) strategic management of cross-border data flows; (b) data localization measures to support the domestic digital industry, including artificial intelligence start-ups; (c) public digital and data infrastructure to

13 Sanya Reid Smith, "Some preliminary implications of WTO source code proposal", Third World Network Briefing Paper, No. 4, for the WTO Eleventh Ministerial Conference, held in Buenos Aires from 10 to 13 December 2017.

14 Laura Mann and Gianluca Iazzolino, "See, nudge, control and profit: digital platforms as privatized epistemic infrastructures" (IT for Change, 2019).

15 A discriminatory lending practice whereby financial service providers use credit scoring techniques to charge a higher rate of interest when granting loans to borrowers from poorer and minority communities who have limited credit options to begin with.

16 United Nations Conference on Trade and Development (UNCTAD), "Workshop on digital trade and industrialization: perspectives from the South", held in Colombo, 8–9 March 2018.

promote data innovation by domestic firms; (d) public interest regulation of digital monopolies;[17] and (e) protection measures for the infant digital industry, including caps on foreign ownership and joint ventures that can grow the local digital industry more quickly. Many member States of the Organization for Economic Cooperation and Development (OECD) place limits on foreign ownership in certain sectors.[18] National data governance strategies will be critical to building an enabling environment for the domestic digital industry and safeguard it from complete decimation by platform and data monopolies. However, the digital trade policy proposals from advanced economies (including those proposed in WTO and in plurilateral agreements), which call for the total removal of all restrictions on cross-border data flows, pose a major impediment to the adoption of such strategies in the countries of the global South. The blanket ban on data localization promoted in these proposals limits the ability of developing countries to selectively and gradually open up data flows, based on a robust evaluation of the relative advantages and disadvantages of their specific geo-economic locations.[19]

By rejecting the proposal for unrestricted cross-border data flows at the Eleventh WTO Ministerial Conference, the African Group has made a good start as far as policymaking in this domain is concerned. Recent developments in Rwanda and South Africa are testimony to the existence of cutting-edge thinking within the continent on national data governance strategies. However, for that promise to materialize, it is vital that the Governments pursuing those strategies fully appreciate the interconnections between data governance frameworks and policy choices in other areas, such as the regulation of e-commerce markets; linkages of micro-, small and medium-sized enterprises to digital marketplaces; and protection measures for the key digital sectors of the infant industry. Doing so would ensure that they all coalesce into a cohesive road map for economic development (see box 3).

F. Conclusions: towards a digital trade policy road map for Africa

In multilateral and plurilateral negotiations, countries in Africa need to evolve positions on digital trade that enable them to claim the data paradigm's leapfrogging opportunity. The digital economy is poised at a crossroads, with gains currently accruing to big players and advanced economies. It can and must be engineered through human intent, to serve the development needs of countries and people who have been left behind. Otherwise, we are bound to face a greater disparity between the North and the South in the distribution of wealth and in human well-being. To further the agenda of human rights and development, countries in Africa need to preserve their domestic policy space for evolving data governance frameworks for the digital economy, regulation of digital transnational corporations, emerging e-commerce marketplaces, and protection measures for the infant digital industry. They must also evolve dedicated strategies to take advantage of the growth

17 In areas such as prevention of business practices that lead to market distortion and corporate tax evasion.

18 For example, in July 2017, Germany (an OECD member country) passed an amendment to the German Foreign Trade Law Ordinance, restricting foreign takeovers of businesses pertaining to "critical infrastructures" and extending review periods of such proposals. Even in cases where stakes being acquired were less than the cap specified in the legislation, the Government of Germany has intervened in cases where there was a fear of drain of cutting-edge technology. See Klaus W. Riehmer and Stefan Glasmacher, "Germany: under review – German Ministry activates the foreign investment regime", Mayer Brown, 24 August 2018; and Anita Gurumurthy and others, "Policies for the platform economy: current trends and future directions" (IT for Change and International Development Research Centre, 2018).

19 South Centre and the Economic Commission for Africa, African Trade Policy Centre, "Analytical note on the WTO's discussions on electronic commerce" (Geneva, 2017); Rishab Bailey and Smriti Parsheera, *Data Localisation in India: Questioning the Means and Ends*, Working Paper Series, No. 242 (New Delhi, National Institute of Public Finance and Policy, 2018).

Box 3

Assessing the pros and cons of the Electronic World Trade Platform

The Electronic World Trade Platform (eWTP) is an initiative led by Alibaba to bring together different stakeholders to assess existing regulations and best practices, and to incubate and advocate rules to foster eTrade. It provides services to small and medium-sized enterprises (SMEs), which it onboards with cloud computing, mobile payments and logistics services, to facilitate their connections to the global digital marketplace. Rwanda became the first country in Africa to join the platform in 2018.

The immediate benefits of the initiative for its SMEs notwithstanding, it is necessary for a developing country like Rwanda to also consider the long-term implications of such platform ecosystems. In fact, through its Data Revolution Policy, Rwanda has sought to unlock the transformative potential of data innovation by 2022. Through a five-year road map, it hopes to develop an institutional governance framework for data; address privacy, security and data sovereignty concerns; promote domestic data innovation through a national data warehouse portal and strategic public-private partnerships; and invest in the data capabilities of the workforce. How does the decision to join eWTP sit with this larger ambition of the country to unlock the data revolution for local innovation?

Building a domestic data infrastructure is critical for value creation and appropriation in the digital economy. The approach of China – with its simultaneous investment in a twin strategy of "informatization and industrialization" and the State-led shepherding of domestic digital industry to help companies from China to beat competition from digital transnational corporations – offers one such policy model. To a large extent, this was rendered possible because of the decision by China to de-link from the global Internet; this is an option that may not be desirable for other countries in the global South. Even without Internet controls, the rest of the China model may be difficult to follow as other countries (especially those with smaller domestic markets) may not be viewed as attractive destinations by venture capital. The *Trade and Development Report 2018* suggests that non-traditional options such as finance from development banks can be very useful in building national capabilities for the digital economy.

While private-led initiatives such as eWTP may provide SMEs with access to the global marketplace, they also bring the risk of what has been described as "data colonialism".[a] In the platform economy, companies such as Alibaba are able to build monopolistic control based on their access to vast amounts of data, which they gather to build the digital intelligence and which, in turn, fuels such control.

[a] Nick Couldry and Ulises A. Mejias, "Data colonialism: rethinking big data's relation to the contemporary subject", Television and New Media, vol. 20, No. 4 (September 2018).

opportunities offered by Industry 4.0 in the context of premature de-industrialization.[20]

Prudence is necessary to balance short-term and long-term interests, as digital trade policy assumes increasing centrality in trade negotiations. This will be especially critical for the future of the continent's trade and investment relations with the European Union[21] and with China. Although not all countries in Africa are currently on the same side of the table with respect to the adoption of negotiating positions, in the long term, strategic gains may be better served if all 55 members of the African Union act as a unified bloc.

Before signing on to any trade agreement, it is essential that a systematic audit of all its provisions, including those pertaining to digital trade policy, be undertaken, in order to discern the implications for human rights and development. Countries in Africa must also apply themselves to a regional road map that can help them move out of the low value parts of the digital economy. Akin to the European Union, the African Union must adopt a digital single

20 Africa Kiiza, "Daring to think different: why e-Commerce won't work for Africa's development", *Rosa Luxemburg Stiftung*, 20 December 2018.

21 Benjamin Fox, "Junker offers EU-Africa trade deal in new 'partnership of equals'". Euractiv, 12 September 2018.

market strategy as part of the African Continental Free Trade Area that is currently being set up. This can give a boost to regional trade through a unified, regional market for trade in digital goods and services. Cross-border data flows between parties to the Agreement Establishing the African Continental Free Trade Area may be advantageous, with due protections in place for privacy and data security.

At the national level, all member States of the African Union must take stock of their specific geo-economic strengths and weaknesses in order to determine their national digital and data strategies. These strategies should not just be focused on how to build the next unicorn; they must pay equal attention to the ways in which new digital and data innovation opportunities can be leveraged for equitable value distribution in the economy. Policy and legal frameworks that speak the language of rights are vital in this regard, in order to ensure that road maps to build future economies are well grounded in normative principles. Such frameworks must consider questions such as the following:

- How can innovation for the local economies be strengthened?
- What alternative economic models in the platform marketplace can support the livelihoods of small farmers and entrepreneurs?
- How can the power of data and artificial intelligence be unlocked to further sustainable human development?

Unless the digital economy can make a place for fairness in the way global wealth is shared, and support planetary health rather than threatening it, the digital revolution will be rendered as yet another instance of global injustice.

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Harnessing e-commerce in Africa and women's human rights

Nadira Bayat

A. Introduction

Digital trade and e-commerce are profoundly transforming the world of work and production, with e-commerce emerging as a powerful tool for women's economic empowerment in developing countries. Enshrined in human rights law through women's rights to work and at work, as well as through the right to education, women's economic empowerment is central to the achievement of gender equality and transformative economic growth. E-commerce can help to promote inclusion and drive women's economic empowerment, but the benefits are not automatic, since women, mainly from developing countries, are being left behind in an increasingly connected world. Africa is the region with the lowest rate of Internet penetration and the widest digital gender gap. While connectivity is vital, it is not enough. Women who are entrepreneurs need targeted digital skills and digital entrepreneurship skills development and training to ensure their equal participation in e-commerce.

Countries throughout Africa are in the process of developing national e-commerce strategies. The African Union is also deliberating on an African e-commerce strategy. This chapter contains an examination of the challenge that is presented by the gender digital divide in Africa and highlights the human rights implications of the divide. It is argued that ensuring the economic empowerment and equal participation of all women in the development of Africa requires bridging the digital gender divide and affirming the centrality of a targeted gender-responsive digital skills and digital entrepreneurship skills development and training strategy in e-commerce strategies, based on human rights, as part of the national development agenda of countries in Africa.

In prioritizing interventions aimed at addressing limited digital literacy and a lack of digital, business and entrepreneurial skills, Governments in Africa will accelerate the achievement of gender equality and women's economic empowerment on the continent. They will also be taking concrete steps towards the full and effective participation of women in civil, political, economic, social and cultural life. The present chapter concludes by providing concrete recommendations to policymakers in Africa on what should be taken into consideration in the design and implementation of a gender-responsive digital skills and digital entrepreneurship skills development and training strategy, as part of national e-commerce strategies.

B. Confronting the challenge in Africa

1. A widening gender digital divide

The digital economy is an increasingly important driver of inclusive economic growth and plays a significant role in accelerating the productivity of existing industries, opening up markets and contributing to global development and job opportunities.[1] Together with the Internet, new and emerging technologies including artificial intelligence, robotics, autonomous vehicles, the "Internet of things" and three-dimensional (3D) printing, are driving the

1 G20 Digital Economy Ministerial Declaration, adopted at the G20 Digital Economy Ministerial meeting held in Salta, Argentina, 23–24 August 2018.

rapid digital transformation of the global economy. The Internet has emerged as a powerful force in advancing the ongoing transformation of economies and societies. It has increased the capacity of individuals to enjoy their right to freedom of opinion and expression, including the right to access to information. This in turn facilitates the exercise of other human rights, such as the right to education and the right to development.[2] In addition, the rapid growth of the Internet and other digital technologies presents significant opportunities for the expansion of e-commerce, with the potential to provide equality of opportunity for women as entrepreneurs and traders. Access to information and services further improves learning outcomes and advances opportunities for affordable and inclusive education.

The vast opportunities provided by the Internet and other emerging technologies, however, are not being enjoyed by everyone equally. While advanced economies continue to invest in and benefit from the transformative impact of new information and communication technologies (ICT), developing and least developed countries are being left further behind in the face of a widening digital divide. In this piece, the term "digital divide" refers to the gap between individuals, households, businesses and geographic areas at different socioeconomic levels with regard to their opportunities to access ICTs and to their use of the Internet for a wide variety of activities.[3] Despite the rapid global growth in Internet access and use, nearly 4 billion people remain offline. Of these, over 2 billion are women.[4] A widening gap persists among countries, regions, subregions and socioeconomic groups.[5] In Africa, only about 20 per cent of the population has regular access to the Internet;[6] this represents a challenge with significant implications for the ability of economies in Africa to transition to a fourth industrial revolution economy.

One of the most striking aspects of the global digital divide is a widening gender digital divide. A study by the Organization for Economic Cooperation and Development confirms that while the global digital gender divide in Internet usage remained almost unchanged between 2013 and 2017, at about 11 per cent, the gap between developed and developing countries increased. This has been driven by an increase in the Internet usage gender gap by three percentage points in least developed countries and four percentage points in Africa.[7] The International Telecommunication Union noted in 2017 that the proportion of women using the Internet on the continent was 25 per cent lower than the proportion of men.[8] The gender digital divide is higher than the systematic gender gaps in agriculture and financial inclusion. It is worth noting in this regard that only 10 to 20 per cent of all agricultural landholders in developing countries are women,[9] while the gender gap in account ownership in developing countries is approximately 7 per cent (67 per cent of men compared with 59 per

2 Frank La Rue, Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, in *Global Information Society Watch 2011*, (APC and Humanist Institute for Cooperation with Developing Countries, 2011), Preface.

3 Organization for Economic Cooperation and Development (OECD), "Understanding the digital divide" (Paris, OECD Publishing, 2001).

4 Dhanaraj Thakur and Lauran Potter, "Universal service and access funds: an untapped resource to close the gender digital divide" (Washington D.C., World Wide Web Foundation, 2018), p. 5.

5 ITU and United Nations Educational, Scientific and Cultural Organization (UNESCO) Broadband Commission for Sustainable Development, *The State of Broadband 2017: Broadband Catalyzing Sustainable Development* (Geneva, 2017), p. 8.

6 African Development Bank, World Economic Forum and World Bank, *The Africa Competitiveness Report 2017: Addressing Africa's Demographic Dividend* (Washington D.C., 2017), p. 18.

7 OECD, "Bridging the digital gender divide: include, upskill, innovate" (Paris, 2018), p. 6.

8 ITU, "ICT facts and figures 2017" (Geneva, 2017).

9 Food and Agricultural Organization of the United Nations (FAO), *The State of Food and Agriculture 2010–11: Women in Agriculture–closing the Gender Gap for Development* (Rome, 2011), pp. 36–37.

cent of women have an account).[10] Women are also less likely than men to own or use a mobile telephone, which is the most common means of accessing the Internet in developing countries. Notwithstanding the significant increase in mobile telephone usage across the continent, sub-Saharan Africa has the second largest average gender gap, both in mobile telephone ownership and in mobile Internet use, followed by South Asia.[11] A general lack of systematized gender-disaggregated data and insights on Internet access and use masks the true extent of the gender digital divide.[12] There is limited official data on how many women-owned businesses access and use the Internet and the extent to which they participate in e-commerce, pointing to the need for more and better-quality gender disaggregated data. Addressing the gender digital divide in Internet access and use requires sound qualitative and quantitative gender-disaggregated data to identify the nature of women's digital exclusion, and to shape policies to boost their participation in the digital economy.

2. Drivers of the gender digital divide

In addition to gathering more qualitative and quantitative gender-disaggregated data, it is essential to address a wide range of drivers at the root of the gender digital divide. Women face a complex set of social, economic and cultural barriers that inhibit Internet access and use. These barriers include:[13] availability of relevant infrastructure; affordability of devices and data; lack of awareness and understanding of the Internet; lack of education; low level of confidence; lack of digital skills; poor literacy; lack of relevant content applications and services; and concerns surrounding safety and security.[14] Simply bringing women online, however, will not necessarily open up access to economic opportunities. Research findings suggest that even where women have access, they are less likely than men to use the Internet to seek information, search for jobs, or engage in civic or political spaces.[15] Limited digital skills and know-how, the high cost of data and Internet-enabled devices, and a lack of relevant online content – contributing to a perceived low value in using their precious and limited resources available to connect to the Internet – have been identified as the most significant barriers to online access.[16] Similarly, affordability, low levels of literacy and digital skills, and safety and security concerns were identified as leading barriers to mobile telephone ownership.[17]

Limited digital literacy and poor digital skills have been identified among the main drivers of the gender digital divide. According to the World Wide Web Foundation, women are 1.6 times more likely than men to report lack of skills as a barrier to Internet use.[18] Research

10 Demirgüç-Kunt and others, *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution* (Washington D.C., World Bank, 2017), chap. 1, p. 23.

11 Oliver Rowntree, "Connected women: the mobile gender gap report" (London, GMSA, 2018), p. 14.

12 GSMA, "A toolkit for researching women's Internet access and use" (London, 2018), p. 3.

13 For a more detailed analysis on the barriers to Internet access and use, see Broadband Commission for Sustainable Development, Working Group on the Digital Gender Divide, "Recommendations for action: bridging the gender gap in Internet and broadband access and use" (March 2017), pp. 29–38. See also Women 20, "Digital inclusion: concept note".

14 Safety and security concerns pose less of a threat in the labour market, since women would usually access the Internet in the workplace. Women living in poor and remote areas are more likely to access the Internet at public access facilities, which may be unsafe or inaccessible. Online abuse poses a threat globally. Women across the world continue to experience online abuse, ranging from petty harassment and trolling to stalking and sexual intimidation. Recent events have highlighted concerns over the illegal or unethical use of personal data (Women 20, "Digital inclusion: concept note").

15 World Wide Web Foundation and Alliance for Affordable Internet, "REACT with gender responsive ICT policy: the key to connecting the next 4 Billion" (2018), p. 5.

16 Ibid.

17 "REACT with gender responsive ICT policy", p. 3.

18 World Wide Web Foundation, *Women's Rights Online: Translating Access into Empowerment* (2015), p. 10.

suggests that countries with high rates of illiteracy also have weak digital skills levels.[19] The United Nations Educational, Scientific and Cultural Organization notes that despite the rising global literacy rates, women still make up the majority of illiterate adults in every region, accounting for 473 million or two-thirds of the global adult illiterate population. The largest gender gaps in male and female adult literacy rates are found in South Asia (77 per cent male versus 58 per cent female), sub-Saharan Africa (69 per cent male versus 53 per cent female) and North Africa and Western Asia (82 per cent male versus 66 per cent female).[20]

An analysis of the difference between male and female literacy rates reveals that the female literacy rate is approximately 20 to 25 per cent lower than the male literacy rate in these regions.[21] That figure is comparable to the gender digital divide in Africa. As noted above, the proportion of women using the Internet is 25 per cent lower than the proportion of men who use it. A strong association may be observed between the gender digital divide in Internet access and use on the continent, and the gender literacy divide, indicating that digital literacy and skills could be a driving factor in the gender digital divide. Closing the digital literacy gap is therefore critical to closing the gender digital divide, and essential for the realization of women's human rights.

3. Human rights implications of the gender digital divide

The gender digital divide is both a consequence and cause of violations of women's human rights, as noted by the United Nations High Commissioner for Human Rights.[22] It is a consequence, in that disparities in ICT access and use reflect discrimination faced by women in society, and it is also a cause of violations of women's human rights in that women without meaningful ICT access are less equipped to exercise their human rights and to participate in public life, the economy and society.[23] There are a range of human rights – civil and political, as well as economic, social and cultural – that are directly impacted by the gender digital divide.

Human rights form the bedrock of human development. Gender equality and economic empowerment lie at the core of the human rights and global sustainable development agenda. Women's economic empowerment is central to the achievement of gender equality and transformative economic growth. It is also fundamental to the ability of women to enjoy all other human rights. The 2030 Agenda for Sustainable Development and the Sustainable Development Goals contained therein reinforce the existing human rights obligations of States to advance gender equality and women's empowerment;[24] the principles of non-discrimination and equality are firmly entrenched in international and regional human rights law. Similarly, women's economic empowerment is anchored in women's rights to work and at work, as enshrined in several universal and human rights instruments. As a human right, education builds upon and enhances the skills, knowledge, expertise and confidence required for women to seek out

19 Simon Fau and Yasmeen Moreau, "Building tomorrow's digital skills: what conclusions can we draw from international comparative indicators?", Education Policy Working Papers Series, No. 6, document ED-2018/WS/7 (Paris, UNESCO, 2018), p.10.

20 UNESCO, UNESCO eAtlas of Literacy, "Gender disparities in literacy rates". Available at https://tellmaps.com/uis/literacy/#!/tellmap/-1082895961. See also UNESCO Institute for Statistics, "Literacy rates continue to rise from one generation to the next", Fact Sheet No. 45 (September 2017), highlighting that in South Asia and sub-Saharan Africa, women aged 15 years and older are one-fifth less likely to be literate than men in the same age group.

21 The female literacy rate is 25 per cent lower in South Asia; 23 per cent lower in sub-Saharan Africa and 20 per cent lower in North Africa and Western Asia.

22 A/HRC/35/9, para. 17.

23 Ibid.

24 See Goal 5 (Achieve gender equality and empower all women and girls), Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all) and Goal 1 (End poverty in all its forms everywhere).

economic opportunities. As such, education remains one of the most powerful tools for women's economic empowerment. Recognizing the significance of gender equality and women's economic empowerment to development in Africa has led to a decision by the African Union to identify full gender equality in all spheres of life as a priority goal towards achieving an Africa whose development is people-driven, relying on the potential of African people – especially its women and youth – and caring for children.[25]

Human rights are universal, indivisible and interdependent, and must be viewed holistically. Addressing the gender digital divide in Africa is critical to ensuring women's meaningful participation in the digital society and digital economy, in particular in overcoming gender inequalities and in advancing women's economic empowerment. While gender equality is a human rights issue, it is also an economic issue. In that regard, the African Development Bank points out that eliminating gender inequality and empowering women on the continent could raise the productive potential of 1 billion Africans, delivering a huge boost to the continent's development potential.[26] If left unattended, the widening gender digital divide in Africa will continue to disproportionately affect women, with rising implications for their effective participation in civil, political, economic, social and cultural life, as well as their full and equal participation in the development of the continent.

C. *Advancing gender equality and women's economic empowerment in Africa through e-commerce*

1. E-commerce: opportunities and challenges

A widening gender digital divide has significant implications for expanding economic participation and opportunities for women through digital trade and e-commerce. As a rapidly growing force in global trade, e-commerce has the potential to provide equality of opportunity for women as entrepreneurs and traders. E-commerce supports the creation of decent jobs[27] and can serve as a springboard to overcoming some of the traditional gender trade barriers, including access to trade financing, trade costs associated with physical distance and male-dominated distribution networks. E-commerce provides women who are required, or who choose to stay at home, with the option of balancing their business and domestic obligations. Small and micro women-owned businesses may also gain from business-to-business, business-to-consumer and consumer-to-consumer transactions that use e-commerce platforms to reach domestic and foreign markets. Meanwhile, women entrepreneurs, who are often restricted in their access to capital, can benefit from the ability of e-commerce to increase efficiencies and profitability with limited investment.[28]

E-commerce further encourages the formalization and growth of micro-, small and medium-sized enterprises (MSMEs) in developing countries, including through access to ICT-enabled financial services such as online and

25 African Union Commission, *Agenda 2063: The Africa We Want – The First Ten Year Implementation Plan* (Addis Ababa, 2015), p. 1.

26 African Development Bank, "Empowering African women: an agenda for action–Africa Gender Equality Index 2015" (Abidjan, Côte d'Ivoire, 2015), p. 5.

27 Creation of decent jobs, however, is not guaranteed by a shift to e-commerce. In this regard, the International Labour Organization (ILO) notes that while platform work provides significant income and employment opportunities for a growing number of workers, concerns remain over the conditions of work, providing the necessary levels of protection for workers and regulating this form of work. For a more detailed explanation of these and other associated digital platform challenges, see ILO, Global Commission on the Future of Work, "Job quality in the platform economy", Issue Brief No. 5 (2018), pp. 3 and 5.

28 Information Economy Report 2015: Unlocking the Potential of E-commerce for Developing Countries (United Nations publication, Sales No. E.15.II.D.1), p. 87. See also see UNCTAD, "Harnessing e-commerce for sustainable development", in *Aid for Trade at a Glance 2017: Promoting Trade, Inclusiveness and Connectivity for Sustainable Development* (Geneva, WTO and Paris, OECD Publishing, 2017), p. 211.

mobile payments.[29] It enables access to an international customer base and can promote the integration of MSMEs into global value chains and markets.[30] Moreover, e-commerce has the potential to develop small-scale businesses – in particular small-scale businesses on the continent owned by women – into stronger growth-oriented businesses, with explicit implications for inclusive and sustainable long-term economic growth.

E-commerce can advance gender equality and women's economic empowerment in Africa, but the benefits do not accrue automatically and will be dependent on the ability of countries in Africa to adapt to the digital economy. It is worth noting that a lack of access to ICT expertise explains in part why smaller firms in low- and middle-income countries are lagging behind in the uptake and integration of ICT, and why many firms do not participate in business-to-business e-commerce despite the potential for access to an international customer base.[31] Similarly, an International Trade Centre study on the challenges faced by small and medium-sized enterprises in Africa in harnessing the opportunities of e-commerce found that many such enterprises lacked the required digital literacy to use ICTs for productive purposes, including e-commerce.[32] The need for more skills development also emerged from the findings of a joint United Nations Conference on Trade and Development (UNCTAD)/ International Labour Organization (ILO) survey of women entrepreneurs in the United Republic of Tanzania, which showed that 97 per cent of the female entrepreneurs surveyed used mobile telephones. However, the survey also found that only 10 per cent used websites for business and only 16 per cent had sold products online.[33]

Advancing gender equality and women's economic empowerment in Africa through e-commerce requires bridging the gender digital divide as a matter of priority and addressing poor digital literacy and a lack of digital skills as one of the main drivers of the gender digital divide, and as a particular constraint to women's participation in e-commerce. Digital skills development is crucial for supporting women to shift from being passive receivers of technology to becoming active and innovative upgraders, placing them on a more equal footing in the digital age. Digital skills also underpin the use of digital trade and e-commerce platforms, which enable businesses owned by women to export industrial goods and access larger or new markets, thereby increasing their participation in domestic and global trade. Female entrepreneurs, however, need business development and digital entrepreneurship skills in order to apply their digital literacy and digital skills. In prioritizing these actions, Governments in Africa would be empowering female entrepreneurs with the skills needed to thrive in the connected digital economy, and opportunities to seize the benefits of e-commerce, to advance progress towards achieving gender equality and women's economic empowerment.

2. Digital skills and digital entrepreneurship skills development and training: targeted policy measures and interventions in national e-commerce strategies

A targeted gender-responsive digital skills and digital entrepreneurship skills development and training strategy, based on human rights, should lie at the core of e-commerce strategies as part of the national development agenda. As countries in Africa prepare to implement the Agreement Establishing

29 Ibid., p. 202.

30 Ibid. See also UNCTAD, *ICT Policy Review: National E-commerce Strategy for Egypt* (UNCTAD/DTL/STICT/2017/3), p. 26.

31 Solutions for Youth Employment and others, *Digital Jobs for Youth: Young Women in the Digital Economy* (Washington D.C., World Bank, 2018), p. 21.

32 International Trade Centre, International E-commerce in Africa: The Way Forward (Geneva, 2015), p. 38.

33 UNCTAD, "ICTs crucial for women entrepreneurs in Tanzania", 10 December 2014.

the African Continental Free Trade Area, an e-commerce digital skills and digital entrepreneurship skills development and training strategy could serve to inform and link to the digital dimension of the national strategies with regard to the Agreement. In devising a strategy, policymakers will need to define a critical set of digital skills as well as digital entrepreneurial and business skills and competencies that meet the needs of female entrepreneurs in Africa, and support their equal participation in e-commerce. Attention must be paid to the classification of these skills, from basic to mid-level digital skills, to the prioritization of transformative digital technologies at the advanced end of the digital skills continuum.[34]

Data analytics, artificial intelligence and the utilization of other intelligent data extraction tools are key for women-owned businesses to be able to compete in higher value-added industries, and are examples of transformative digital technologies that will impact skills development for the twenty-first century. Business and digital entrepreneurship – that is, digital skills required by entrepreneurs, including online market research, strategic planning and business analysis, online marketing, website design, online networking and establishing mentoring relationships – should complement digital skills development opportunities.[35] Technical skills development and training should be provided in combination with soft skills, including leadership, communication, teamwork and client focus. Fostering an environment that supports the use and growth of online payment solutions, and creating opportunities for women to learn how best to leverage their use of the Internet and mobile telephones to access e-finance and other ICT-enabled financial services, is a critical part of the strategy.

Women in Africa are disproportionately affected by poverty, social inequalities, discrimination and a lack of opportunities. Given the historical and structural socioeconomic disadvantages that continue to confront the majority of women small-scale entrepreneurs, in particular those in the informal sector, consideration should be given to the introduction of special measures. These measures should respond to the specific barriers and challenges that female traders in the informal sector face – in particular in accessing new trade opportunities and growing their businesses – and should be introduced in addition to the targeted digital skills and digital entrepreneurship skills development policy measures and interventions in national e-commerce strategies.

An integrated approach that prioritizes gender and empowers female small-scale entrepreneurs in Africa with the necessary skills and sustained support can help them make the shift from nominal income generation to profitable business. Public sector and private sector initiatives should be pursued to provide capacity-building, mentorship and internship opportunities for women to obtain practical, hands-on experience on the effective use of e-commerce as a tool to promote, market and sell their products in domestic and international markets. Those initiatives need to be sustained long after the short-term training programmes have concluded. It is of vital importance that female entrepreneurs in Africa, especially those who continue to be marginalized, are provided with systematic and sustained support on their journey towards developing their businesses into productive enterprises.

34 For a more detailed information on the classification of digital skills, see UNESCO and ITU, "Skills for a connected world: concept note – Mobile Learning Week 2018" (Paris, 2018), p. 6. See also Decent Jobs for Youth, Digital Skills campaign, "Digital skills: preparing young people for the future world of work in the digital economy" (2017), p. 5, and Report of the Secretary-General on building digital competencies to benefit from existing and emerging technologies, with a special focus on gender and youth dimensions (E/CN.16/2018/3), pp. 4–5.

35 For an explanation of specific skills required under for entrepreneurship, see Decent Jobs for Youth, "Digital skills", p. 5.

D. *Expanding the digital capabilities of women*

Fostering gender inclusion in the digital economy: best practice

Recognizing the critical importance of digital skills training to reducing the digital gender divide, and increasing the economic empowerment of women in the digital economy, has led to the implementation of a number of initiatives by countries in Africa that have aimed at expanding the digital capabilities of women. While those interventions are not targeted specifically at female entrepreneurs, they provide a useful indication of best practice in digital literacy and digital skills and training, and may be further developed and adapted to meet the needs and priorities of individual countries for e-commerce.

Examples of the initiatives undertaken by Governments in Africa to expand the digital capabilities of women include:

- **Egypt:** Online education and education e-marketplaces are emerging as effective ways to support digital literacy and the education system in Egypt. The establishment of a network of Internet technology clubs across the country is another Government initiative to promote digital literacy and foster e-commerce. The Government of Egypt provides significant support for such clubs in order to boost e-commerce within governorates, and 88 per cent of Internet technology club services target women. The provision of training to rural micro- and small enterprises on how to start or improve online selling, in close collaboration with the new e-commerce hub of Egypt, is central to the country's rural e-commerce development initiative.[36]

- **eRwanda:** The country has implemented campaigns for enhancing digital literacy in ICT skills. The eRwanda project trained more than 2,000 citizens and focused on having a minimum of 30 per cent female students in each of the classes it offered to young citizens of Rwanda to obtain the ICT driving licence.[37]

- **Digital Ambassador Programme:** Training will be provided to 5,000 youth who will be posted to all 30 districts in the country with the aim of providing digital skills training to 5 million nationals of Rwanda over a four-year period.[38]

- **eGhana:** eGhana is credited with employing women in the Internet technology industry and helping create strong ICT skills among women and young girls employed through the project. eTransform Ghana includes an electronic identification component that, for the first time, allows women to be included in processes related to digital identity, the obtainment of credentials and authentication; all of these are essential elements to online service delivery, financial inclusion and social protection.[39]

- **Nigeria:** The National Broadband Plan of Nigeria requires the Federal Ministry of Communications Technology to monitor the number of women without access to the Internet and provide incentives for private

36 UNCTAD, *ICT Policy Review: National E-commerce Strategy for Egypt*, pp. 27 and 57. While not targeted at female entrepreneurs specifically, it is worth noting the skills development key performance indicators identified in the *National E-commerce Strategy for Egypt* include: student enrolment in programmes offering Internet-assisted instruction; total number of teachers teaching basic computer skills or computing; number of micro- and small enterprises in the handicraft sector who have received ICT training; existence of a vocational and accreditation system for e-commerce sector professionals; number of business development support services for businesses on e-commerce; number of education or massive open online course e-marketplaces and e-platforms.

37 Solutions for Youth Employment and others, *Digital Jobs for Youth*, p. 85.

38 Broadband Commission for Sustainable Development, *Working Group on Broadband for the Most Vulnerable Countries: Broadband for National Development in four LDCS: Cambodia, Rwanda, Senegal and Vanuatu* (July 2018), p. 28.

39 Solutions for Youth Employment and others, *Digital Jobs for Youth*, p. 85.

educational centres and civil society organizations to train more women to use the Internet. The Ministry has partnered with a number of private groups to develop ICT building initiatives for women and girls in Nigeria.[40]

E. *Advancing women's human rights in e-commerce through a gender-responsive digital and entrepreneurial skills development strategy*

1. Women's rights under human rights law

A gender-responsive digital and entrepreneurial skills development strategy as part of national e-commerce strategies, and the integration of corresponding interventions, will address limited digital literacy and poor digital skills as one of the main drivers of the digital gender divide. It will further address the lack of business and digital entrepreneurial skills of female entrepreneurs in Africa as a major barrier to harnessing the benefits of e-commerce. In prioritizing such interventions, Governments in Africa will accelerate the achievement of gender equality and women's economic empowerment on the continent. They will also be taking concrete steps towards the full and effective participation of women in civil, political, economic, social and cultural life.

The principles of non-discrimination and equality are firmly entrenched in international and regional human rights law, while women's economic empowerment is anchored in women's rights to work and at work. Those rights are recognized in several universal and regional human rights instruments, including the International Covenant on Economic, Social and Cultural Rights,[41] the Convention on the Elimination of All Forms of Discrimination against Women,[42] the African Charter on Human and Peoples' Rights,[43] the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa[44] and several ILO conventions. Women's economic empowerment and the realization of women's rights to work and rights at work are essential for the achievement of the Beijing Declaration and Platform for Action.[45] Education[46] remains one of the most powerful tools for women's economic empowerment. As an empowerment right, education is the primary vehicle by which economically and socially marginalized adults and children can lift themselves out of poverty and obtain the means to participate fully in their communities.[47]

2. Implementation of measures to advance women's human rights

By becoming parties to international treaties, States assume obligations and duties under international law to respect, to protect and to fulfil human rights. Policy interventions, and support for digital skills and entrepreneurship development and training, will foster gender inclusion in the digital economy and empower female entrepreneurs in Africa to effectively engage in e-commerce. As noted above, e-commerce can support creation of decent jobs and promote equality of access to employment opportunities for women as entrepreneurs and traders. E-commerce also has the potential to develop small-scale businesses, particularly women-owned small-scale

40 World Wide Web Foundation and Alliance for Affordable Internet, "REACT with gender responsive ICT policy", p. 9.
41 Articles 6 and 7.
42 Article 11, para. 1 (a).
43 Article 15.
44 Article 13.
45 Report of the Secretary-General on the review and appraisal of the implementation of the Beijing Declaration and Platform for Action and the outcomes of the twenty-third special session of the General Assembly (E/CN.6/2015/3).
46 Articles 13 and 14 of the International Covenant on Economic, Social and Cultural Rights and article 12 of the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa.
47 General comment No. 13 (1999) on the right to education (E/C.12/1999/10).

businesses on the continent, into stronger growth-oriented businesses, with significant benefits for faster job creation.

In adopting positive measures aimed at building the digital, business and entrepreneurial skills of female entrepreneurs, Governments in Africa would be effecting a targeted and deliberate approach to eliminating discrimination in access to employment and training. Those measures would further expand and promote decent job opportunities for women who are most vulnerable to poverty and unemployment. In so doing, Governments in Africa would be taking positive steps towards the full realization of the right to work.[48] It is worth noting that the right to work contained in article 6, paragraph 1, of the International Covenant on Economic, Social and Cultural Rights is not an absolute and unconditional right to obtain employment, but includes the right of every human being to decide freely to accept or choose work.[49] Work, as specified in article 6 of the Covenant must be "decent work". That is, State parties are bound by the obligation to respect the right of women to have access to decent work.[50] The introduction of digital skills and entrepreneurship development and training is an example of a positive measure to combat discrimination and to promote opportunity and equal access to decent work for women. In addition, Governments in Africa will be facilitating the creation of conditions to promote and support the occupations and economic activities of women, in particular within the informal sector, in line with article 13 (e) of the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa.

Female entrepreneurs who will be directly affected by specific policy measures and actions should participate in the formulation of those measures. According to the Human Rights Council, participation enables the advancement of all human rights and plays a crucial role in the promotion of democracy, the rule of law, social inclusion and economic development.[51] It is important to note in that regard that a targeted gender-responsive digital skills and digital entrepreneurship skills development and training strategy, and the identification of corresponding gender-targeted interventions in national e-commerce strategies – both of which are aimed at closing the digital gender divide and ensuring the equal participation of women in e-commerce – will be incomplete if there is a failure to involve those women who will be affected by key decisions at stake. While the responsibility for the development and implementation of policy measures and action lies with Governments, it should be emphasized that government efforts would be enhanced considerably if the views and perspectives of women's groups and grass-roots organizations – who best understand the priority concerns, opportunities and barriers faced by female entrepreneurs in Africa – were taken into account in the design of those measures.

F. *Recommendations for policymakers*

Policymakers should develop and put in place a targeted gender-responsive digital skills and digital entrepreneurship skills development and training strategy, based on human rights at the core of e-commerce strategies, as part of the national development agendas of African countries. This can be accomplished by:

48 In article 6, para. 2, of the International Covenant on Economic, Social and Cultural Rights, States parties recognize that to achieve the full realization of the right to work, the steps to be taken need to include technical and vocational guidance and training programmes; policies and techniques to achieve steady economic, social and cultural development and full and productive employment, under conditions safeguarding fundamental political and economic freedoms to the individual.

49 General comment No. 18 (2005) on the right to work (E/C.12/GC/18), para. 6.

50 Ibid.

51 Draft guidelines for States on the effective implementation of the right to participate in public affairs (A/HRC/39/28), p. 2.

(a) Defining a critical set of digital skills and digital entrepreneurial skills and competencies that meets the needs of African female entrepreneurs, and supports their equal participation in e-commerce. Attention must be paid to the classification of those skills, from basic to mid-level digital skills, to the prioritization of transformative digital technologies at the advanced end of the digital skills continuum. This includes data analytics, artificial intelligence and the utilization of other intelligent data extraction tools that are key for women-owned businesses to be able to compete in higher value-added industries. Business and digital entrepreneurship – including online market research, strategic planning and business analysis, online marketing, website design, online networking and establishing mentoring relationships – should complement digital skills development opportunities. Technical skills development and training should be provided in combination with soft skills, including leadership, communication, teamwork and client focus.

(b) Fostering an environment that supports the use and growth of online payment solutions and creating opportunities for women to learn how best to leverage their use of the Internet and mobile telephones to access e-finance and other ICT-enabled financial services.

(c) Introducing special measures that respond to the specific challenges that female traders in the informal sector face, in particular in participating in new trade opportunities and in developing their microenterprises into more productive enterprises.

(d) Forging collaborative partnerships with a broad range of stakeholders – including chambers of commerce, business and trade associations, Internet technology companies, international organizations, and other professional institutions – to provide capacity-building, male and female mentors and internship opportunities for women to obtain practical, hands-on experience on the effective use of e-commerce as a tool to promote, market and sell their products in domestic and international markets. Such efforts should ensure the longevity of these initiatives, which need to be sustained after short-term training programmes have concluded.

(e) Ensuring meaningful dialogue in engagement processes on the design of a gender-responsive digital skills and digital entrepreneurship skills development and training strategy, and engaging with women-led groups and grass-roots organizations who work closely with, and who understand the priority needs, interests and challenges of, female entrepreneurs and traders in Africa.

(f) Prioritizing the collection of qualitative and quantitative gender-disaggregated data on women's participation in the digital economy to inform meaningful dialogue and policymaking, including on digital skills and digital entrepreneurship skills development.