



United Nations
Office for South-South Cooperation

South-South Ideas

**Trade Integration and
South-South Cooperation:
How Digitalization
Matters in Africa**

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United Nations Development Programme

304 East 45th Street
New York, NY 10017 USA

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How Digitalization Matters in Africa

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Abbreviations and Acronyms

AfCFTA	African Continental Free Trade Area agreement
B2C	Business to Commerce
COMESA	Common Market for Eastern and Southern Africa
e-commerce	Electronic commerce
ECOWAS	Economic Community of West African States
ICT	Information and communication technology
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SIGMAT	Regional Customs Network for Transit Trade
SIRESS	SADC's Integrated Regional Electronic Settlement System
TFA	Trade Facilitation Agreement
WTO	World Trade Organization

Executive Summary

Digitalization refers to the transition from an industrial age characterized by analogue technologies to a new era in which commerce, innovation, knowledge acquisition, communication and many other aspects of modern life are driven by digital technologies. Digitalization is transforming economies and societies in multiple areas, even influencing cultural, environmental and political spheres. The introduction of digital technologies is considered disruptive to business in the sense that new technologies are rapidly reshaping business models and introducing different ways for businesses to connect with their customers and to deliver their products and services. Businesses need to reconfigure to create new sources of competitive advantages.

Digitalization presents opportunities for businesses to innovate, grow and make gains in efficiency and effectiveness. Risks to be watchful of include operational errors associated with increased automation, regulatory problems related to data privacy and cyber security and organizational risks related to employment displacement and the ability of firms to adapt to such changes.

This paper investigates the importance of digitalization in fostering trade integration among Southern economies with an emphasis on intra-African trade. As the global economy experiences important changes brought about by digital technologies, South-South cooperation in a digitalized world presents new opportunities for—and areas of—cooperation among Southern countries. Many of these new opportunities have the potential to stimulate national and regional efforts to achieve the Sustainable Development Goals by 2030.

The role of digitalization has become more important within the context of the worldwide COVID-19 pandemic. While digitalization was already embedded in many areas before the pandemic outbreak, the latter created what is known as 'new normal' conditions characterized by reduced physical contact, restricted movement and a huge increase in activity, particularly work and schooling, centering around the home. These changes rapidly increased the digitalization of transactions between and among people.

Digitalization is helping African countries with trade integration and is boosting South-South cooperation. Digitalization is impacting trade composition and types of products exchanged and affects the shape of production processes and international trade costs. This affects the insertion of firms in globalized value chains.

Digitalization has also helped widen the scope of traded products in Africa. This is mainly being done by focusing on increased cross-border e-commerce in small parcels, trading in digitally-deliverable services, increasing bundling between trade in goods and services and finally increasing tradable creative industries. This emergence in a new scope of tradable goods and services is fostering new areas of mutual cooperation among Southern economies, not only in terms of trade agreements but also technologically and financially.

Along with the greater opportunities that digitalization can bring to African trade and South-South cooperation come challenges. African economies need to strive to overcome trade barriers that have not been eliminated through digitalization. Mainly this relates to the persistence of non-tariff measures, a deficiency of trade infrastructure, corruption, a lack of new technologies and skills and complicated bureaucratic, administrative and institutional impediments. In addition, African countries must exert greater effort to grasp the opportunities created by a digitalized world to enhance intra-African trade. Fostering regional African trade not only can create its own benefits, but it can also help the continent better position itself within the global trade arena. To achieve this, concerted initiatives are needed in each country and across the continent. Emphasis is simultaneously needed on the role of institutional variables that provide a legal basis for digital trade at the regional and global levels.

Introduction

Global, regional and national economies are experiencing significant changes brought about by digital technologies—an important force driving worldwide economic growth. This paper posits that closer trade integration and more robust South-South cooperation in an increasingly digitalized world can improve African economies and bring additional gains in social, cultural, environmental and political spheres.

Efforts aimed at fostering digitalization and the recognition of its potential benefits are relatively well integrated in the global 2030 agenda of the Sustainable Development Goals (SDGs). This is reflected in SDG 9 (Industry, Innovation, Infrastructure), with its Technology Facilitation Mechanism (TFM) and multi-stakeholder science technology and innovation forum. The ICT goal emphasizes the economic importance of building resilient digital infrastructure and fostering innovation. Information and communication technology (ICT) targets underpin other SDGs related to poverty alleviation, health improvement, educational quality enhancement and climate change action. All these dimensions are directly or indirectly related to digitalization.



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Digitalization refers to the transition from an industrial age characterized by analogue technologies to a new era in which commerce, innovation, knowledge acquisition, communication and many other aspects of modern life are driven by digital technologies. Digitalization is transforming economies and societies in multiple areas, even influencing cultural, environmental and political spheres. The introduction of digital technologies is considered disruptive to business in the sense that new technologies are rapidly reshaping business models and introducing different ways for businesses to connect with their customers and to deliver products and services.

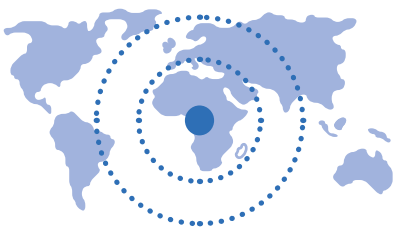
Digitalization is transforming economies and societies to such an extent that the increased use of ICT, and the various applications and services associated with it, have become less of an option and more of a necessity. Digitalization is mainly driven by the unprecedented penetration of ICTs, including radio, television, cellular phones, computers, network hardware and software and satellites. It is also influenced by the services and applications associated with ICTs, such as the mobile internet, the internet of things, artificial intelligence, videoconferencing and electronic commerce platforms (Redwood, 2017). These aspects are influencing many dimensions of the economy, ranging from e-commerce, availability of goods and services and value chains to job creation, thus affecting overall economic growth and welfare.

The global COVID-19 pandemic has brought about profound changes to human societies, accelerating the further penetration of digitalization into societies and economies around the globe. There are no signs of this diffusion slowing down. The pandemic has boosted digital transformations because digitalization provides solutions to contactless transactions between individuals, businesses and governments.

Prior to COVID-19, digitalization was already being integrated into many areas of the global economy, such as supply chains (production, delivery and the purchase of consumer goods), banking and financial services (electronic money transfers via the web or mobile browsers) and other services (like insurance, travel, transportation and health). For example, the number of global digital buyers amounted to 1.66 billion in 2016 and is expected to reach 2.14 billion in 2021 (Statista, online, 2020). Retail e-commerce sales reached US\$3.53 trillion in 2019 (Statista, online, 2020). Global online travel sales totaled \$564.87 billion in 2016 and were projected to reach \$755.94 billion in 2019 (Statista, online, 2020).

Meanwhile, several countries in the global South¹ have been dealing with problems related to inadequate access to the latest technologies, sophisticated and costly digital infrastructure and lower computer literacy rates compared to the global North. Hence, these countries will need to strive harder to become integrated into the digital world and to adapt to new conditions post COVID-19. African countries, in particular, need to improve access to digital technologies and to expand the use of such technologies in all sectors to reap the maximum benefits (Afreximbank, 2019).

The successful and sustainable digitalization of economies and societies requires a combination of the proper use of technologies, boosted connectivity, innovation, skills and above all a culture of acceptance of change. Digitalization in the current era turns out to be more of a positive than a negative disrupter, bringing about gains in efficiency and effectiveness. It is important that the global South is not left behind in a digitalized global economy, especially because such dynamic change can underpin and propel sustainable development (UNOSSC, 2018).



With greater digitalization of economies, cross-border e-commerce has emerged as a significant force in international trade.

A digital economy is defined in two ways. One is a narrow definition, limiting itself to platforms and activities that owe their existence to being online (such as Google, Facebook, Alibaba, etc.) and platform-enabled services (like Airbnb, Uber and booking.com). A second broad definition extends to all economic activities that use digitized data (International Monetary Fund, 2018). With greater digitalization of economies, cross-border e-commerce (transactions that are digitally ordered, platform-enabled or digitally delivered) has emerged as a significant force in international trade. One source calls cross-border e-commerce “essentially digitalized trade” (UNOSSC, 2018).

¹ The term refers to developing countries collectively, i.e. low- and middle-income countries located in Africa, Asia and Latin America and the Caribbean (UNDP, 2004).

This paper mainly focuses on how digitalization affects trade in Africa. Digitalization in the context of this paper is defined by the proliferation of the use of both hard and soft digital infrastructures in economies and societies. Hard digital infrastructures include computers, servers, routers, etc. Soft digital infrastructures include computer services (programming) and software services (such as cloud computing). More specifically, the paper considers cross-border e-commerce as a new business model that is developed by using digital transaction technologies to enhance the tradability of goods and services across borders. The objectives of the paper are threefold. First, to analyze why digitalization matters for trade in Africa and for South-South cooperation. Second, to highlight how the scope or the composition of trade is affected by digitalization. Third, to present the main challenges and opportunities that digitalization could present for South-South integration, with a special emphasis on intra-African trade.

The paper is organized as follows. Section 1 analyzes the channels through which digitalization affects trade. Section 2 presents the composition of trade in light of digitalization. Section 3 compares the main challenges and opportunities facing trade and digitalization for South-South integration. Section 4 provides conclusions and policy recommendations.

1. Why Does Digitalization Matter?



Africa has a comparative advantage in agriculture, and digitalization can help increase their competitive advantage by helping farmers keep an eye on growing conditions and potential diseases, and they can track products along the supply chain from the farm to the fork

It is important to analyze why digitalization matters for trade. Digitalization will significantly shape the structure of international trade through a change in flows composition, flows cost and production processes. The effect of digitalization on trade can be enhanced through several channels, such as new types of trade that have the potential to emerge (such as trade in services, e-commerce and creative industries). Indeed, world trade is already witnessing the emergence of new formats and opportunities for international business, including many transactions of real goods and services moving into the digital space, high-technology intensive products and more diversified services. Second, intensified digitalization of trade in goods can both create new types of trade (e.g. e-commerce) and deepen existing ones (e.g. agriculture) that can increase as trade costs decline. In particular, trade in goods that are time-sensitive can be boosted. Third, since Africa has a comparative advantage in agriculture, digitalization can help increase their competitive advantage by helping farmers keep an eye on growing conditions and potential diseases, and they can track products along the supply chain from the farm to the fork (WTO, 2018). Fourth, for services, digitalization is even more indispensable, since several services become tradable (WTO, 2018) and the manufacturing sector is relying more and more on services (Karam and Zaki, 2020).

At the processes level, global value chains will experience more decentralization, provoking tougher competition. This is chiefly due to a borderless global economic system through which companies, entrepreneurs and households participate in international trade beyond national jurisdictions. Digitalization helps reduce the costs of engaging in international trade and facilitates broader client participation in global value chains. World Trade Organization (2019) data show that previously supply chains were following a linear model in which production instructions went from supplier to producer to distributor to consumer. Currently, global value chains are based on an integrated framework in which information flows in several directions. With this more complicated framework, digitalization may reduce coordination and matching costs and thus help developing countries integrate into global value chains.

Regarding costs, with a more globalized digital environment, trade costs can significantly decline (Freund and Weinhold, 2004, and Ahn et al., 2011). Literature shows that e-commerce reduces distance-related trade costs by 30 percent (Lendle et al., 2016). In addition, with automated customs, corruption can be reduced and customs efficiency improved (Zaki, 2017). Customs efficiency refers to a quick delivery of imported and exported products to avoid lengthy and bureaucratic procedures. Indeed, thanks to computerized customs, the collection of taxes and the delivery of goods has become more efficient and more transparent, inducing a sharp increase in government revenues. One of the better-known initiatives for digitalized customs is the Automated System for Customs Data (ASYCUDA). This computerized system

designed by the United Nations Conference on Trade and Development (UNCTAD) helps countries to administer their customs systems. The most updated version of this software, ASYCUDAWorld (version 4), uses the latest wireless and internet technologies. Implementing ASYCUDA++ has led to effective systems to clear goods, with around 90 percent of international trade and customs duties being electronically processed. Indeed, Montagnat-Rentier and Parent (2012) showed that Burkina Faso, Mali and Togo developed an interface between customs and companies in charge of inspections and Cameroon and Côte d'Ivoire established a management information system to speed-up the inspection process. While several African countries² have adopted this system, some enforcement and infrastructure problems exist. Reforms are still needed, such as making customs procedures fully paperless, and various changes in customs infrastructure and legislation are required.

Among digitalization initiatives in Africa, an Economic Community of West African States (ECOWAS) interconnectivity project for member states' customs administrations IT systems, the Regional Customs Network for Transit Trade (SIGMAT), was implemented in March 2019. SIGMAT aims to improve the flow in circulation of goods on regional road corridors by making precise information on cargo in transit from one state to another available to customs offices in digital form. Data about consignments are sent in real time to the customs office en route and the customs office of destination. It will be important to assess the effectiveness of SIGMAT and analyze whether customs procedures become less lengthy or not and whether corruption declines.

2 Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Chad, Comoros, Congo, Democratic Republic of the Congo, Ethiopia, Gabon, Gambia, Guinea, Guinea-Bissau, Madagascar, Malawi, Mauritania, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Sudan, Togo, United Republic of Tanzania, Zambia, Zimbabwe.

2. The Scope Of Digital Trade In Africa

Cross-Border E-Commerce

While increasing digitalization does not change “why we trade,” it changes “what we trade,” i.e. the scope of trade. The latter is subject to the typology of e-commerce and its activities. While no final agreement exists on how e-commerce is categorized, both the Organisation for Economic Co-operation and Development and the World Trade Organization (WTO) confirm the electronic basis of the term. As one source wrote, “while all digital trade is enabled digitally, not all digital trade is digitally delivered” (López González and Jouanjean, 2017). It follows that cross-border e-commerce can cover three types of digital trade. The first type is digitally-enabled and digitally-delivered products delivered via digital downloads or web streaming, such as e-books, software, media, cross-border data flows (advertisements) and digitally-delivered architectural plans. The second is digitally enabled but physically delivered goods and services that might include the purchase of goods in online marketplaces, hotel bookings or travel sales through a matching service. The third type of digital trade is digitally enabled purchases of digital services, such as remote computing services that are delivered online.

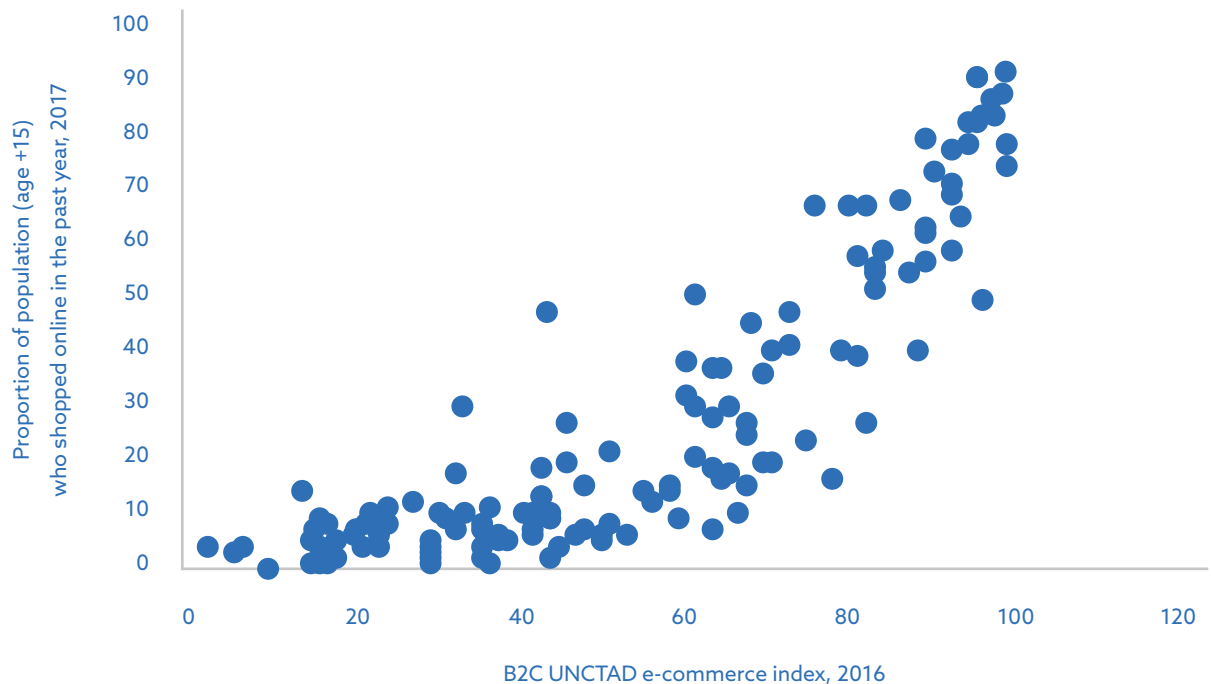
Accordingly, it is expected that cross-border e-commerce involves: (1) trade in larger numbers of smaller and low-value packages of physical goods (parcels ordered online); (2) trade in low-value digital goods and services (e.g. digital music, e-books, internet banking); and (3) increasing tradability of previously non-tradable services (e.g. marketing, design, research and development). Before examining “what Africa trades” in the age of digitalization, a brief review of the status of e-commerce in Africa is presented in the following paragraphs.

The Status of E-Commerce in Africa

While evidence shows that online shopping is one of the most popular online activities worldwide, this is not necessarily the case across much of Africa and the Middle East. Globally, the total number of digital buyers has been 1.32 billion buyers in 2014 and has been estimated to reach 1.92 billion buyers in 2019 (StatInvestor, online, 2020). Yet, based on 2014 actual numbers, there were only 128.1 million buyers in Africa and this number was estimated to have only reached 218 million in 2019 (Statista, online, 2020). In Africa, the use of social media (Facebook, Twitter, WhatsApp and Instagram) are the drivers of internet uptake across the continent. For example, in South Africa, the second best performing among African countries in terms of ‘business to commerce’ (B2C) preparedness, 73 percent of individuals using the internet are social networking, whereas only 14 percent are online shopping (Gillwald et al., 2018; Global Findex database, 2017). While Kenya is the fifth best performer in terms of B2C preparedness (See Figure 2), it comes at the top of African economies in terms of online shopping with 26 percent of the population (age +15) having shopped online during the past year (Global Findex Database, 2017).

As seen in Figure 1, a worldwide belief is that online shopping strongly correlates with the economy's B2C e-commerce index, which measures an economy's preparedness to support online shopping based on four indicators: percentage of population (age +15) with account ownership at a financial institution or with a mobile-money service provider, percentage of population (age +15) using the internet, the post reliability index and the number of internet secure servers.

Figure 1: Relationship between 'business to commerce' (B2C) e-commerce index and online shopping at the global level.



Source: Constructed by the authors using the TCdata360 and the 2017 Global Findex database (World Bank).

Yet, this relationship is less pronounced in the case of Africa. By calculating the correlation coefficient between the B2C e-commerce index and online shopping, the coefficient was found to be equal to 0.86 at the global level and 0.55 for African countries.³ This may be explained by several factors. First, the low reliability of the postal services. In 2019, the integrated index for postal development⁴ is the lowest for Africa (20.6) compared to other Southern economies, such as the Asia-Pacific region (29.5), Latin America and the Caribbean (22.7) and the Arab States (27.29) (Boffa et al., 2019).

3 Based on data availability, the correlation coefficient was calculated for the following African countries: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

4 The Integrated Index for Postal Development (IIPD) ranges from 0 to 100.

Second, a lack of confidence exists among internet users to purchase goods and services through online platforms. Developing countries, including African ones, are characterized by limited regulatory and enforcement capacity. This implies higher exposure of consumers and businesses to fraud, cybercrime and privacy abuse if the use of smart devices continues to proliferate with little planning and oversight. Hence, countries need to build their institutional capacity to counter such threats and crimes and to overcome the lack of trust of the online environment, especially with the limited awareness of consumers about online shopping and online payments. (UNCTAD, 2019).

Third, a digital divide exists between African economies and counterparts from the global North and the global South. African economies are characterized by low levels of ICT penetration compared to the rest of the world. In 2019, fixed broadband subscriptions (per 100 inhabitants) was equal to 0.4 in Africa –low compared to 14.9 globally, 31.9 in Europe, 14.4 in Asia and the Pacific and 8.1 in the Arab States. Also, in Africa, the number of households (per 100 inhabitants) with access to internet at home was equal to 17.8 and the number of households (per 100 inhabitants) using the internet was equal to 28. These figures are quite low compared to the Arab States with figures equal to 57.1 and 51.6, respectively, and compared to Asia and the Pacific with figures equal to 50.9 and 48.4, respectively. Finally, active mobile broadband subscriptions (per 100 inhabitants) was equal to 34 in Africa, whereas the figures was higher in the Americas (104.4), Europe (97.4), Asia and the Pacific (89) and the Arab States (67.3).

In terms of digitalization, Africa is characterized by regional, national, geographic and gender divides. At the regional level, countries from East and North Africa have the highest fixed broadband subscriptions (per 100 inhabitants), such as Mauritius (21.64), Seychelles (20.29), Tunisia (8.77), Algeria (7.26) and Egypt (6.69). By contrast, sub-Saharan African countries are lagging behind, with Cabo Verde (2.88) and Namibia (2.53) having the highest subscriptions. The same finding is confirmed for the number of households (per 100 inhabitants) with access to internet at home, which is higher in East and North African countries compared to sub-Saharan counterparts (International Telecommunication Unit Statistics, online, 2020). At the national level, two digital divides are perceived. The first is the rural/urban divide, in which urban households have better access to ICT. For example, in South Africa, 15 percent of urban household have access to the internet, whereas only four percent of rural households have access (Gillwald et al., 2018). The second is the male/female divide, in which males tend to use the internet more than females in most African countries, especially in Côte d'Ivoire, Egypt and Niger (UNECA et al., 2019).

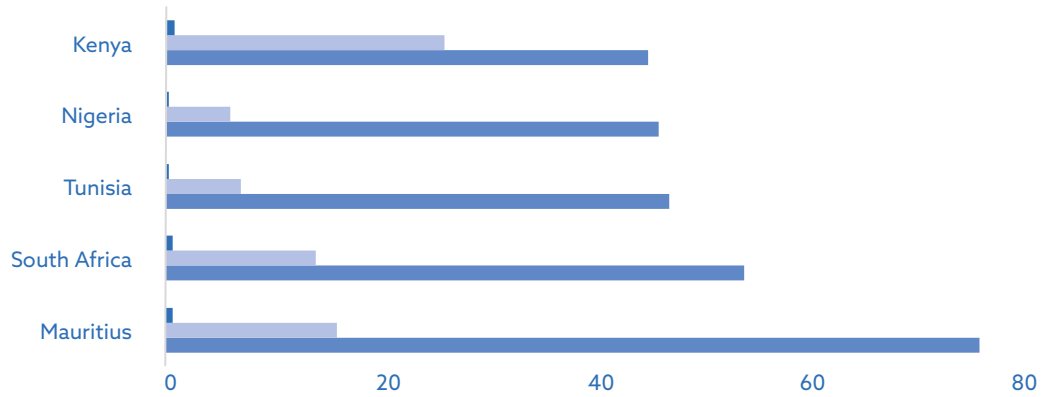
Figure 2 presents the B2C e-commerce index in 2016 for the top and bottom five African economies, as well as the associated percentage of population (age +15) who reported they used the internet to shop online or make or receive digital payments in 2017.⁵ Mauritius had the highest B2C e-commerce index, even though it was not associated with the highest online shopping figures. By contrast, Niger has the lowest figures among the bottom five performing countries.

5 Population (age +15) who in the past 12 months made or received digital payments is the percentage of respondents who reported using mobile money, a debit or credit card or a mobile phone to make a payment from an account or reported using the internet to pay bills or to buy something online. It also includes respondents who in the past 12 months reported paying bills, sending or receiving remittances, receiving payments for agricultural products, receiving government transfers, receiving wages or receiving a public sector pension directly from or into a financial institution account or through a mobile money account.

Figure 2: African countries' B2C e-commerce index.

- Made received digital payments 2017
- Findex2017
- b2cindex2016

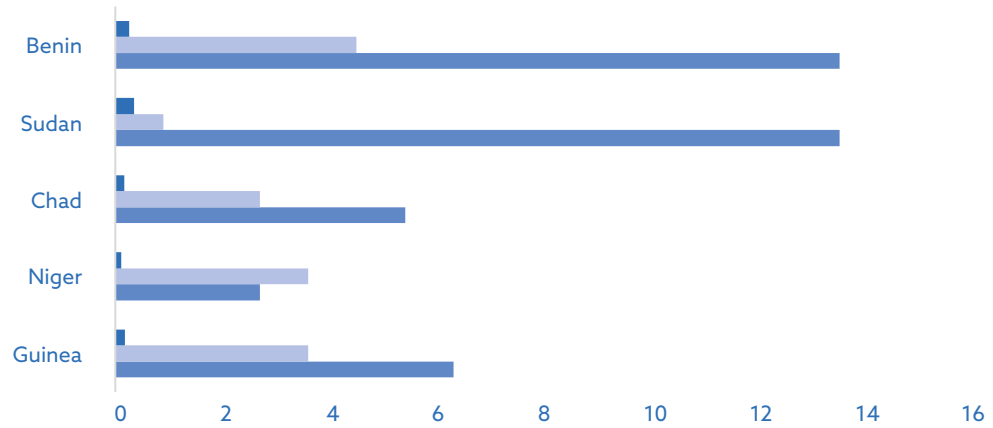
Figure 2a: Top five African countries



Source: Constructed by the authors using the TCdata360 and the 2017 Global Findex database (World Bank).

- Made received digital payments 2017
- Findex2017
- b2cindex2016

Figure 2b: Bottom five African countries.



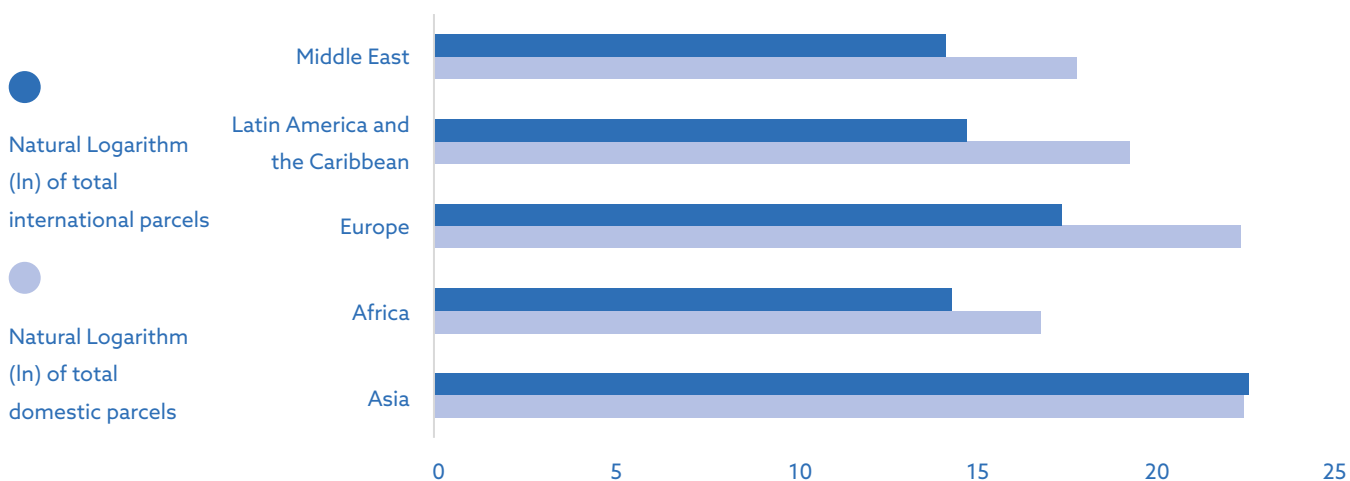
Source: Constructed by the authors using the TCdata360 and the 2017 Global Findex database (World Bank).

What Africa Trades via E-Commerce: Physical Trade

The scope of trade in Africa will be tackled from four dimensions. The first is related to the physical attributes of exchanged products. E-commerce has a major influence on the supply chain design by facilitating the rise of small businesses and individuals as stewards of trade. It also leads to an increased exchange of small, low-value packages of goods (like running shoes). Goods ordered online are delivered in the form of small parcels, as opposed to container loads of shoes shipped in bulk. This implies an increasing interdependence between the boom of e-commerce and the development of postal networks.

At the global level, there has been a dramatic increase in the number of parcels exchanged between buyers and suppliers. The total number of postal parcels internationally dispatched or received reached 51.7 million⁶ in 2018 (Universal Postal Union, online, 2020). Figure 3 presents a better picture of the extent of cross-border trade in parcels by comparing figures for domestic and international trade in parcels in 2018.⁷ On average, the number of domestic parcels is greater than international parcels (received or dispatched), except for Asia. Again, Africa lags behind compared to Asia, Europe and even the Middle East. Yet, several platform companies were initiated in Southern economies, as well as in African ones, to promote cross-border e-commerce. Among Southern companies worth citing are China's Alibaba Group and JD.com, while Jumia in sub-Saharan Africa has become the continent's largest cross-border e-commerce platform covering 23 African countries. Other companies to note in Africa are Killimall in Kenya, Konga in Nigeria and Mall of Africa and Takealot in South Africa (UNOSSC, 2018). Also, the Universal Postal Union e-commerce programme (ECOMPRO) is extending its activities to Southern economies to accelerate the development of e-commerce's international network. Among its initiatives are the Universal Postal Union Doha Postal Strategy (2013-2016), the Istanbul World Postal Strategy (2017-2020) and ECOM@Africa launched in 2016 to establish an integrated, inclusive and innovative e-commerce system for Africa (Universal Postal Union, online, 2020).

Figure 3: Number of domestic and international parcels in 2018.



Source: Constructed by the authors using the Universal Postal Union database (online, 2020).

⁶ This figure has been calculated by the authors using the Universal Postal Union database (online, 2020).

⁷ The natural logarithm of numbers of domestic and international parcels has been calculated to avoid the skewedness due to the extremely large figures of parcels in Europe and Asia compared to the other regions.

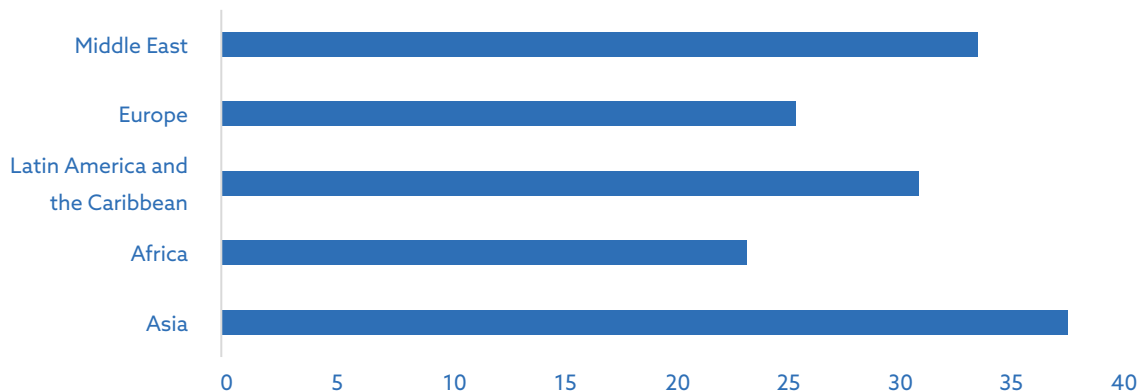
Regional trade agreements provide considerable opportunities to stimulate cross-border e-commerce. This is mainly achieved by including provisions that cover important issues related to digital trade, such as: 1) market access, including customs duties, valuation issues and movement of data; 2) rules and regulations related to intellectual property rights, online consumer protection, liability of intermediary services and access to and use of the internet; and 3) trade facilitation through paperless trade, e-signatures and digital authentications. However, it has been found that while 47 percent of North-South regional trade agreements include such provisions, the figure drops to 33 percent for South-South regional trade agreements. In this context, although the African Continental Free Trade Area agreement (AfCFTA) does not explicitly include a chapter on e-commerce, it could still be used as a platform to advance digital trade in Africa and to enhance intra-African trade. This requires dealing with issues related to tangible digital divides, skills, logistics and trade facilitation. Similar to the East African Community and the Common Market for Eastern and Southern Africa (COMESA), AfCFTA has openings to insert simplified trading regimes related to customs procedures, mainly limited to small parcels not exceeding \$500 (UNECA et al., 2019). At the national level, the Kenyan government created, through a multi-stakeholder committee, a national plan to enable many Kenyan homes without a name or number, a street name and/or a national post or zip code to receive e-commerce deliveries (Suominen, 2019).

As cross-border e-commerce expands as a new trade model between Southern economies, the latter need to cooperate in at least three areas. First, promoting capital cooperation is required, mainly through mergers and acquisitions that have become frequent in Southern economies. Similar to developed countries, several developing countries are demonstrating great interest in entering the cross-border e-commerce platforms of Southern economies by increasing investments and acquiring controlling stakes. For example, Chinese e-commerce companies are actively investing in several Southern e-commerce companies in India (Snapdeal, TicketNew and Zomato), Kenya (Killimall) and Chile (Portal Inmobiliario) (UNOSSC, 2018). The main objective is to levy foreign capital to back their local cross-border e-commerce platforms, allowing them to expand faster and to enhance their competitiveness. For example, in 2013, Jumia received an investment of \$26 million from an American private equity investment firm, Summit Partners. Second, platform technological cooperation is needed, implying that Southern economies with greater technological capacities have the capacity to export relevant technologies to other Southern countries. For example, Killimall in Kenya cooperated with local mobile networks to open efficient payment channels. Third, cooperation is required among Southern economies in standards and regulations to allow smoother performance of cross-border e-commerce platforms. For example, Jumia signed a cooperation agreement with Campost to use its 234 outlets across Cameroon and its express delivery service to expand its sales across the continent (UNOSSC, 2018).

Figure 4 shows that, in Africa in 2018, more than 20 percent of postal income⁸ was linked to parcels and logistic services provided by postal networks.

8 The only available data about the percentage of postal income linked to parcels and logistics include those for domestic and international services. Postal income is related to exchange of parcels, logistic services, financial services and other services presented by postal offices.

Figure 4: Mean of percentage of postal income linked to parcels and logistics in 2018

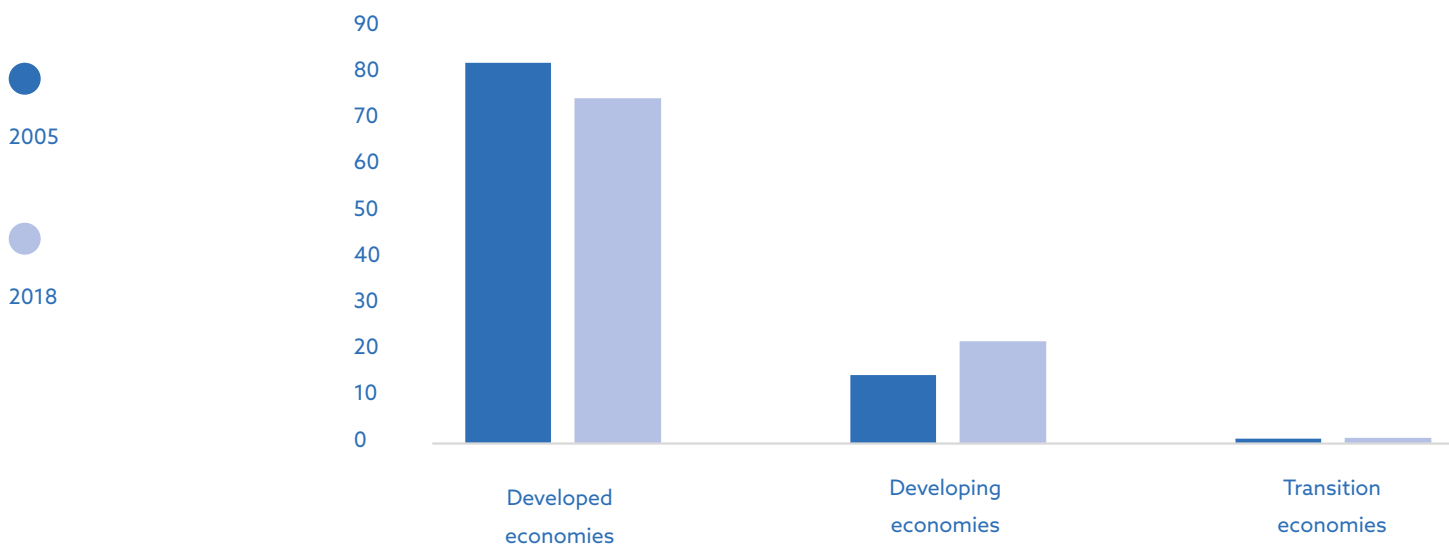


Source: Constructed by the authors using Universal Postal Union database (online, 2020).

What Africa Trades via E-Commerce: Trade in Services

The second dimension is trade in digitally-deliverable services. These are defined as those services that can be provided online, such as insurance, business processes or financial services (UNCTAD, online, 2020). International trade in digitally-deliverable services has been increasing worldwide with a global growth rate of 7.68 percent and a share of 50.15 percent of total trade in services in 2018 (UNCTAD Stat, online, 2020). Figure 5 shows that Southern economies' shares in world trade in digitally-traded services is quite low compared to countries from the North, but it increased slightly from 15.09 percent in 2005 to 22.51 percent in 2018. The latter trend is explained by digitalization of businesses in developing countries that are producing such services. For example, the widespread use of the internet and cloud computing systems enabled Kenyan Lender CBA to extend its mobile banking services to 22 million customers across Kenya, Tanzania and Uganda (Suominen, 2017).

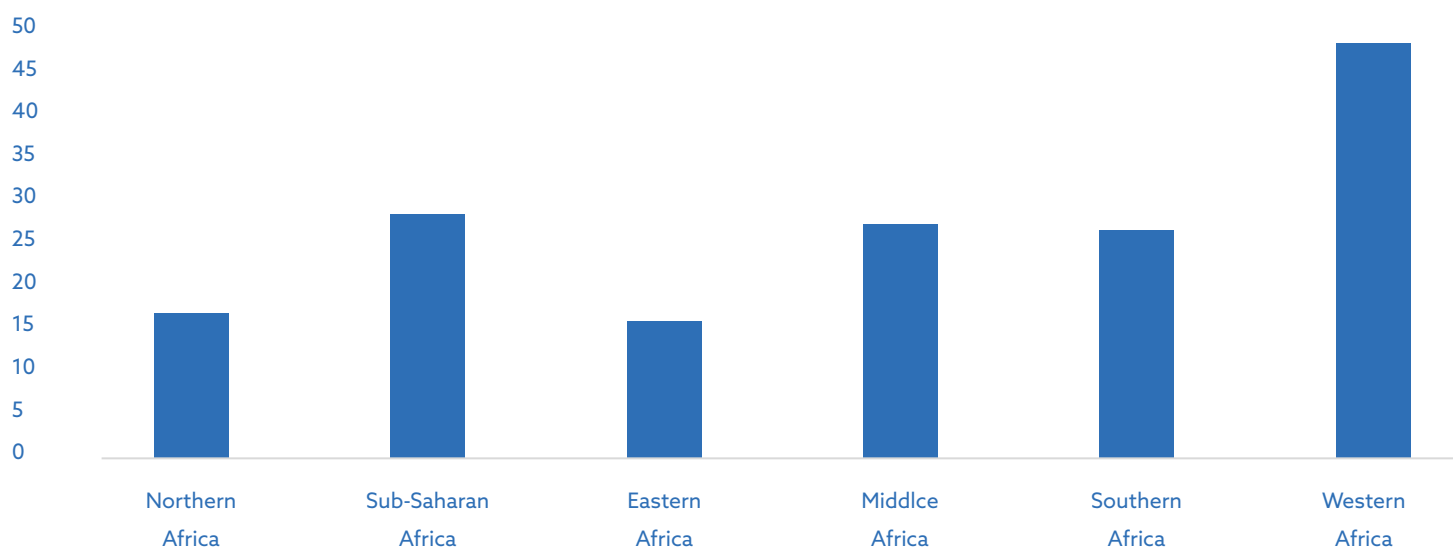
Figure 5: Shares in world exports of digitally-deliverable services in 2005 and 2018.



Source: Constructed by the authors using UNCTAD Stat (online, 2020).

Figure 6 presents the share of digitally-deliverable services in total exports of services in Africa broken down by region. In 2018, on average, digitally-deliverable services grew by 8.19 percent and represented 22.69 percent of total trade in services in Africa, with the highest and lowest shares for Western Africa and Eastern Africa, respectively. This may be explained by the fact that digitalization is associated with increased servicification of the economy, i.e. the increase of purchases, production, sales and exports of services, such as software, financial and entertainment services. This servicification has been coupled by innovation in areas of money transfers, savings, investments, healthcare delivery and insurance services⁹ (Afreximbank, 2019).

Figure 6: Shares of digitally-deliverable services in total trade in services for African regions in 2018.



Source: Constructed by the authors using UNCTAD Stat (online, 2020).

Table 1 presents the top five African exporters of digitally-deliverable services in 2017. Ghana comes at the top with the highest shares of exports of digitally-deliverable services in its total trade in services.

Table 1: Top five African exporters of digitally-deliverable services.

Country	Shares of digitally-deliverable services exports in total trade in services (%)
Ghana	77.97
Algeria	61.46
Eswatini	56.23
South Sudan	55.60
Malawi	55.10

Source: Constructed by the authors using data from UNCTAD Stat (online, 2020).

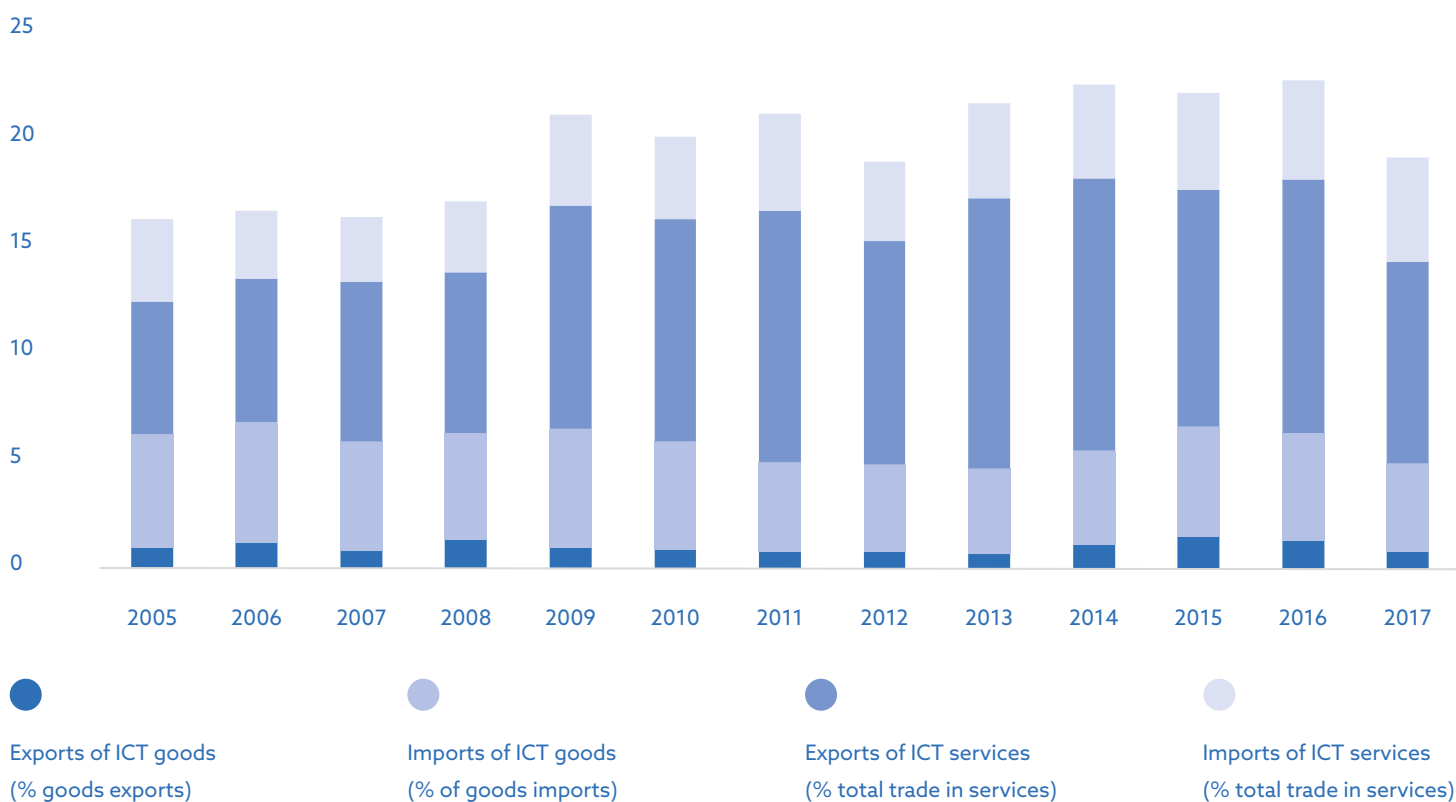
⁹ Among these innovations are the M-Pawa platform for access to micro-loans in The United Republic of Tanzania and BIMA for mobile health delivery and insurance services in Ghana.

What Africa Trades via E-Commerce: Bundling Trade in Goods With Trade in Services

The third dimension of looking at digital trade in Africa involves analyzing whether trade in goods is increasingly bundled with trade in services. Product bundling is a key strategy to boost e-commerce sales, through which customers are given incentives to shop more from a certain seller. One example is the provision of both computer hardware and computer services. Figure 7 shows that bundling between trade in goods and services is not applicable to the case of Africa. During the period 2005-2017, Africa imported more ICT goods than it exported and it exported more ICT services than it imported.¹⁰ This could be explained by the fact that ICT services are easier to deliver remotely.

Also, figures of trade in ICT services are found to be quite modest compared to trade in digitally-deliverable services. Figures of ICT services exports by African countries are quite low compared to their exports of digitally-deliverable services. Trade in ICT services represents only 5.1 percent of total trade in services compared to 22.69 percent for digitally-deliverable services.

Figure 7: Trade in ICT goods and services from 2005 to 2017.



Source: Constructed by the authors using data from UNCTAD Stat and World Bank (online, 2020).

¹⁰ According to the United Nations Conference on Trade and Development (2020), ICT goods include computers and peripheral equipment, communication equipment, consumer electronic equipment, electronic components and other information and technology goods (miscellaneous). ICT service exports include computer and communications services (telecommunications and postal and courier services) and information services (computer data and news-related service transactions).

Table 2 shows that Niger took the lead among the top five African exporters of ICT services in 2017.

Table2: Top five African exporters of ICT services in 2017.

Country	Shares of ICT services exports in total trade in services (%)
Niger	41.35
Mali	40.33
Malawi	28.53
Senegal	14.56
Côte d'Ivoire	14.56

Source: Constructed by the authors using data from UNCTAD Stat (online, 2020).

Hence, it could be argued, from figures related to trade in digital services and ICT services, that African economies are becoming more capable of breaking traditional obstacles to trade and to develop new competitive advantages in service tasks. Online platforms, such as Freelancer and Upwork, are expanding opportunities for web designers, coders, search engine optimizers, designers and others from such developing countries as Argentina, China, India and Kenya to engage in "trade in tasks." Thus, this cadre of IT-related workers would open up new opportunities for small- and medium-sized enterprises to engage in global value chains, diversify their activities and engage in digital trade at the global level.

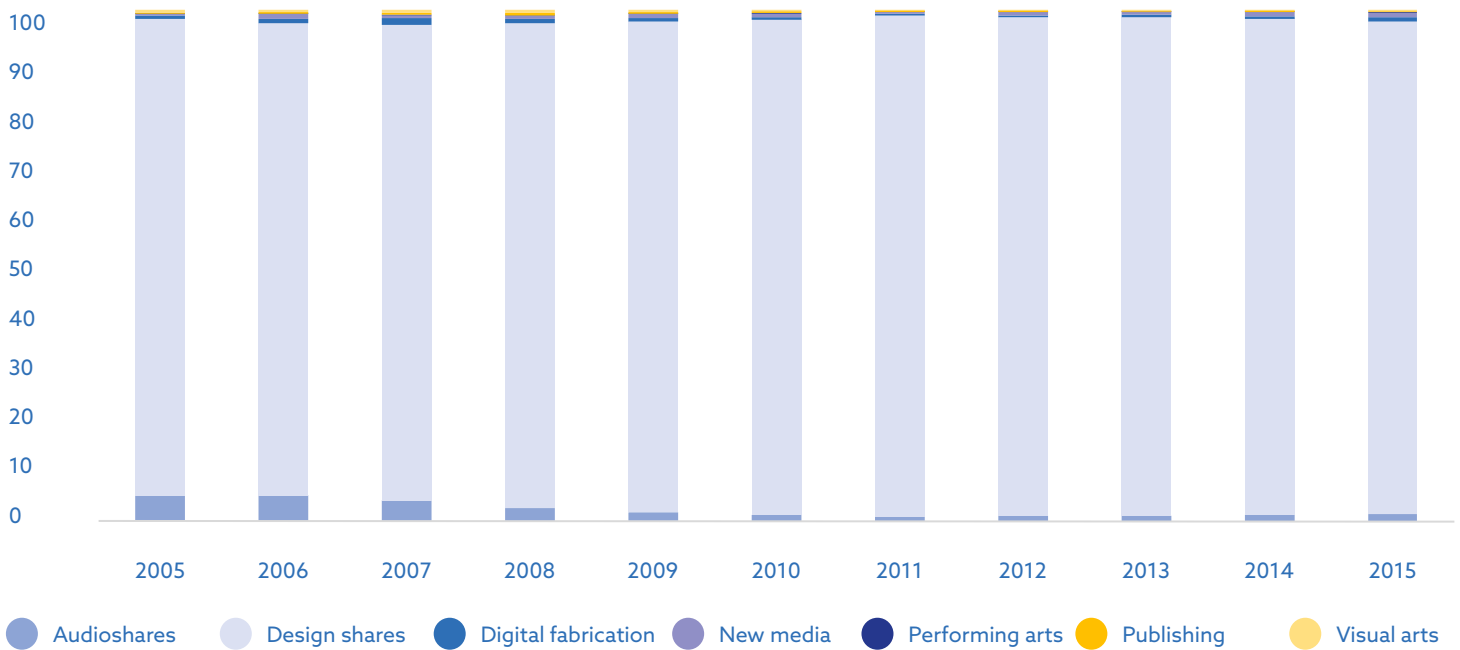
What Africa Trades via E-Commerce: New Creative Industries

The fourth and final dimension of the analysis of Africa's digital trade is its participation in new creative industries that are becoming increasingly tradable. Creative industries combine the creation, production and commercialization of creative content that is intangible and cultural in nature (United Nations, 2008). Creative and cultural industries include firms working in crafts, design, publishing, media, architecture, fashion, advertising, film, music, performing arts, publishing, research and development, software, toys and games, TV and radio and video games. Most of the creative goods and services are delivered either directly to the customers and markets or to traditional e-commerce platforms (such as Etsy or Amazon) and then purchased by the potential consumers (Lin, 2015).

Export of creative goods reached \$8.37 billion in 2015, which represented around five percent of global merchandise exports (UNCTAD Stat, online, 2020). However, data about which of these goods were digitalized creative goods and services are not available globally, let alone broken down for Africa. Yet, giving an overview about the structure of trade in these industries in Africa could provide insight into the role that ICT penetration could play in digitalizing creative goods and services and help increase their tradability. In terms of creative goods traded in Africa, Figure 8 shows that Africa overwhelmingly exports design goods, mainly jewelry. The continent's imports of creative goods are more diversified; it imports high shares of design and design goods (architectural designs) and new media (computer equipment).

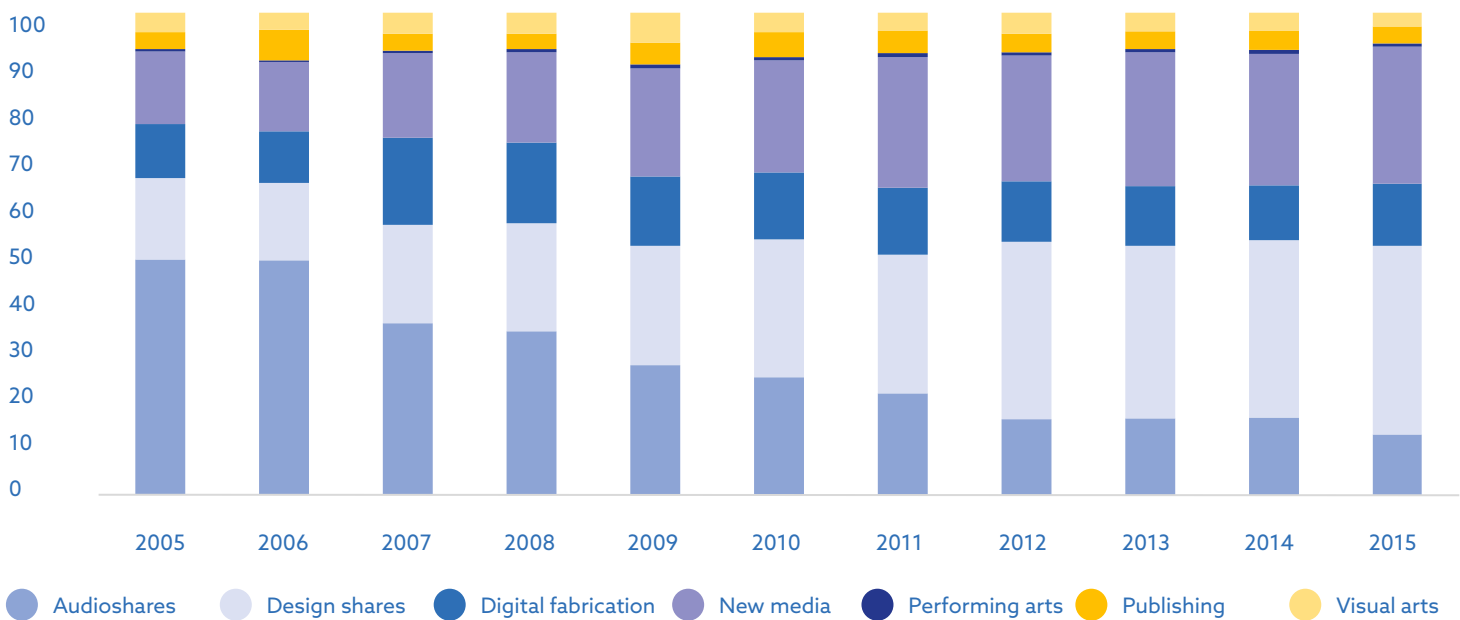
Figure 8: Trade in creative goods in Africa.

Figure 8a: Types of exported creative goods in Africa (% of total exports of creative goods).



Source: Constructed by the authors using data from UNCTAD Stat (online, 2020).

Figure 8b: Types of imported creative goods in Africa (% of total imports of creative goods).

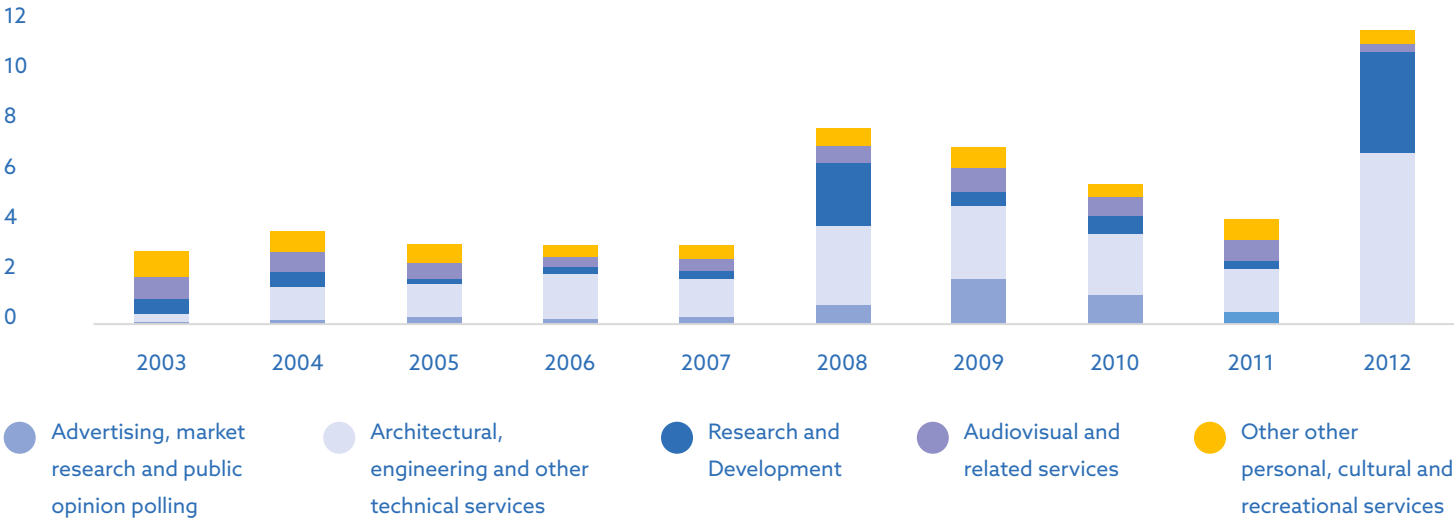


Source: Constructed by the authors using data from UNCTAD Stat (online, 2020).

In terms of traded creative services, Figure 9 shows that African countries are mainly exporting and importing services related to architectural engineering. Again, the continent's imports are more diversified than its exports; Africa tends to import services related to research and development, advertising, marketing and other cultural services.

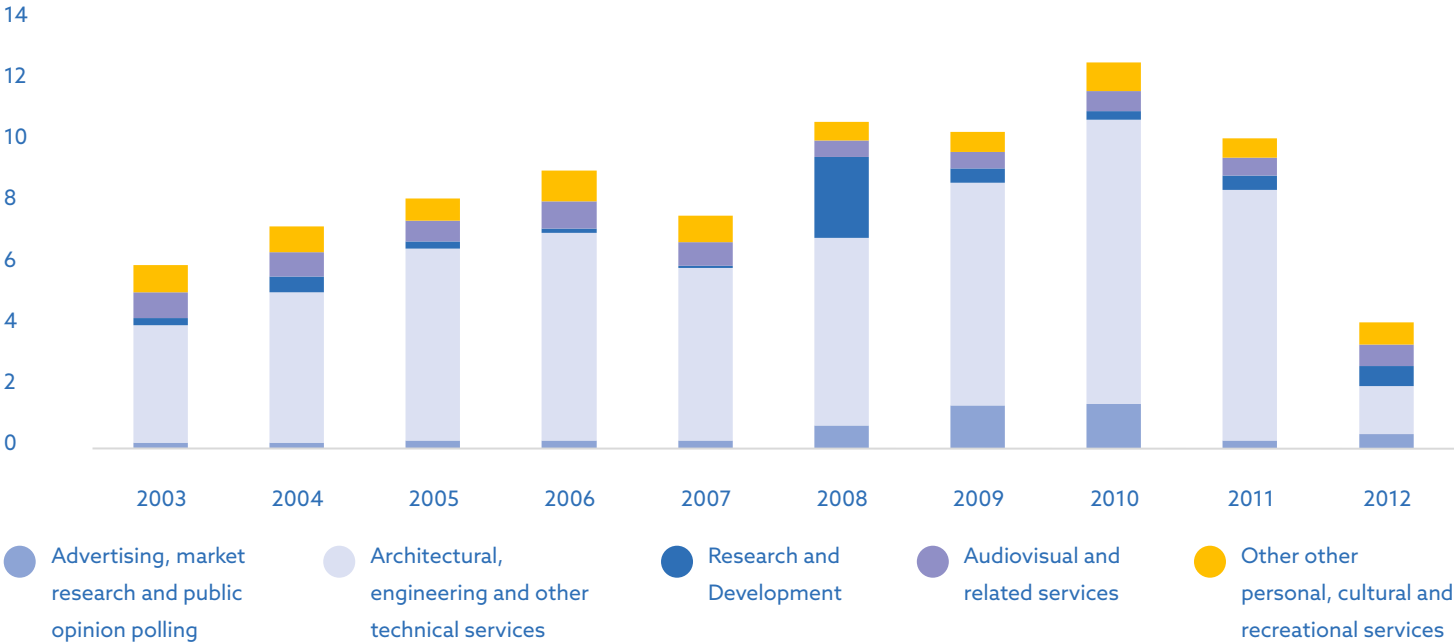
Figure 9: Trade in creative services.

Figure 9a: Types of exported creative services in Africa (% of total trade in services).



Source: Constructed by the authors using data from UNCTAD Stat (online, 2020).

Figure 9b: Types of imported creative services in Africa (% of total trade in services).



Source: Constructed by the authors using data from UNCTAD Stat (online, 2020).

Regarding cultural goods, UNESCO data on trade in cultural goods for African economies found that on average, in 2017, visual arts and craft goods represented the highest share of exports of cultural goods (60.85 percent), whereas books and press goods represented the highest shares of imports (60.31 percent).¹¹

Upward trends in trade in ICT goods and services, digitally-deliverable services and creative goods and services are driven by progress in several frontier technologies, such as software-oriented technologies like blockchain, data analytics and artificial intelligence. Other emerging technologies driving change include user-facing devices (computers and smartphones), 3D printers and wearables, and specialized machine-oriented hardware, such as the internet of things (IoT), automation, robotics and cloud computing. These technologies have primarily boosted trade in services that are delivered digitally (design, health, etc.) as opposed to trade in finished goods. For example, 3D printing has been used for developing designs for medical supplies in Uganda, for filling import gaps in Nigeria, for commercial ventures in South Africa and for renewable energy in Rwanda (UNCTAD, 2019).

New opportunities for South-South cooperation can be further opened up by building regional cloud-computing infrastructure, strengthening regional broadband infrastructure and promoting regional digital payments, especially in Africa (UNOSSC, 2018). The Southern African Development Community (SADC) established the SADC Integrated Regional Electronic Settlement System (SIRESS) to facilitate cross-border trade in the SADC region and allow SIRESS-participating banks to facilitate financial flows and settle regional transactions within SADC countries on a gross basis and in real-time (UNOSSC, 2018).

To conclude this section, four main findings on African e-commerce have been brought out. First, e-commerce is still domestic in nature despite the increase in internationally received and dispatched parcels. This may be due to the high cost of trade in low-value and small physical goods (parcels) and due to the new challenges posed for customs authorities and other agencies in charge of controlling goods at the border. Second, Africa is increasingly competitive and has taken great strides in terms of trade in digital services and is able to grasp the opportunities provided by ICT to integrate into the world trade in services. Third, Africa exports more ICT services than ICT goods. Service tasks present an important advantage for African integration in global value chains. Fourth, data on digitalized creative industries are lacking and an overview on the trade performance of Africa in these industries is needed to reflect a potential area for developing e-commerce. These industries are greatly relying on creativity, technology and knowledge to enhance their tradability.

11 These shares are calculated by the author using data from UNESCO (online, 2020).

3. Challenges and Opportunities for South-South Integration in the Digital Era

Challenges Facing South-South Integration

The digital revolution is not only transforming the substance, patterns and possibilities of international trade but it is also accelerating trade transactions. Indeed, this revolution could unlock new efficiencies and gains for businesses and consumers. Nonetheless, in developing countries, and in particular in Africa, several important challenges remain. These include: (1) inadequate infrastructure, such as limited broadband connectivity;¹² (2) lack of ICT skills; (3) problematic policy and regulatory issues, which represent increasing costs to digital companies, such as onerous legal liability regimes and data privacy rules; (4) limited use and adoption by small businesses of digital technologies, such as e-commerce and online payments; (5) the traditional challenges to cross-border trade, such as complicated customs procedures and expensive logistics; and (6) national digital infrastructure and regulations that are incomplete and do not interact optimally with those of other economies (Suominen, 2017).

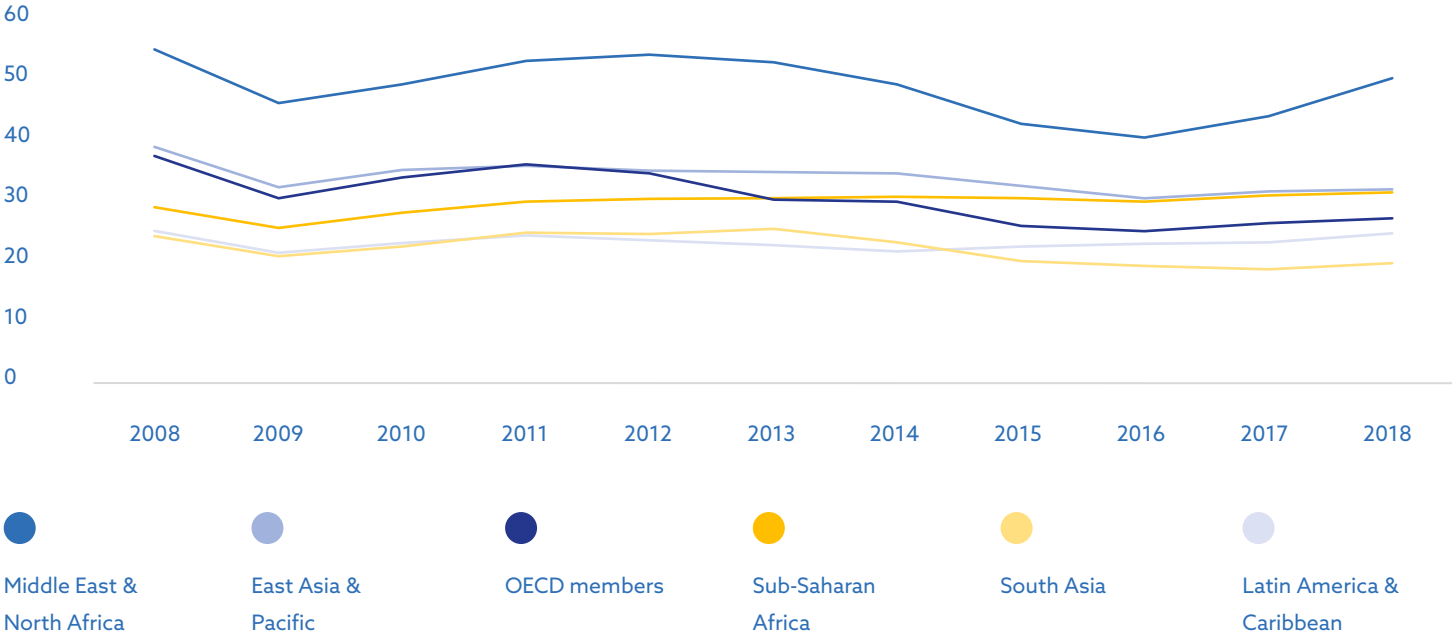
Even if digital infrastructure improves and e-commerce is boosted, the presence of administrative impediments, bureaucracy, a lack of new technologies, corruption and a deficiency of adequate infrastructure in ports as well as in other transports means could reduce trade in general and e-commerce in particular (Zaki, 2017, and Gil-Pareja, et al. 2019). Among initiatives implemented to boost intra-African trade, trade corridors have usually come first. With 17 corridors linking different African economies and 26 one-stop border post facilities, several countries experienced positive outcomes in terms of the value and volume traded through these corridors.

For instance, the Bamako-Dakar corridor that transported more than 50 percent of Mali's traded goods from and to the Port of Dakar led to the diversification of its trading routes and helped bring about a more than 20 percent decline in trade costs. The Nacala Corridor that connects Zambia and Malawi to the Mozambican port of Nacala increased trade by 6.2 percent annually between 2012 and 2016. Finally, the Mombasa - Nairobi - Addis Ababa corridor increased bilateral trade between Ethiopia and Kenya by 400 percent (African Development Bank, 2019).

12 In Africa, according to the World Bank, reaching universal, affordable and good quality internet access by 2030 will require an investment of \$100 billion.

Despite these reforms, market openness needs to be approached more holistically, taking into consideration the full range of tariffs, non-tariff measures and deficient infrastructure that are likely to affect any particular transaction. When Africa is compared to other regions, its trade performance reveals that its exports as a share of GDP is relatively small and decreasing over time, as seen in Figure 10. While this share is slightly higher than that of Latin America and South Asia, it decreased from 34.9 percent in 2008 to 25.4 percent in 2018.

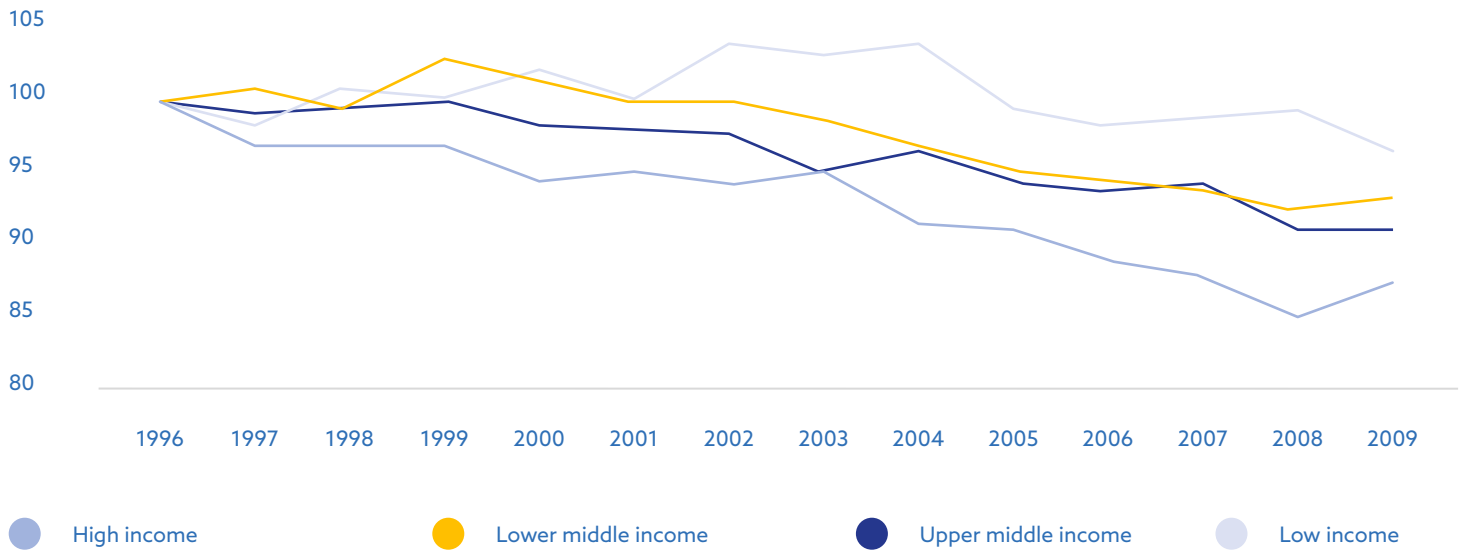
Figure 10: Exports of goods and services (% of GDP).



Source: World Development Indicators.

This decreasing share can be explained by several factors. De Melo and Nicita (2018) showed that trade costs are the highest for low-income and lower middle-income countries that include mainly African countries, as seen in Figure 11. Four main factors explain why trade costs are high: 1) high tariffs; 2) costly non-tariff measures and time to trade; 3) protected services; and 4) poor quality of infrastructure.

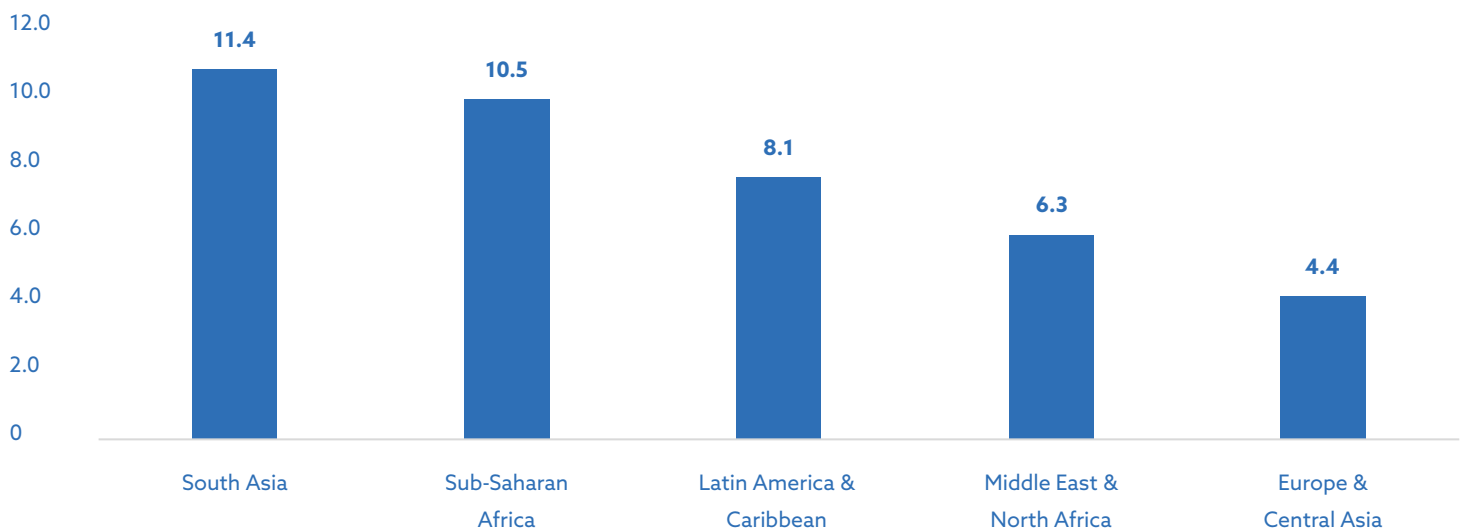
Figure 11: Gravity-simulated trade costs globally (1996–2009).



Source: De Melo and Nicita (2018).

Figure 12 shows, first, that in Africa tariffs are in general higher than other emerging or developed countries with an average of 10.5 percent compared to Latin America or the Middle East and North Africa, whose averages are 8.4 percent and 6.3 percent respectively. Figure 13 shows that non-tariff measures are in general higher in Africa, which erodes competitiveness. These non-tariff measures range from sanitary and phyto-sanitary measures, to technical barriers to trade, export-related measures and administrative barriers to trade.

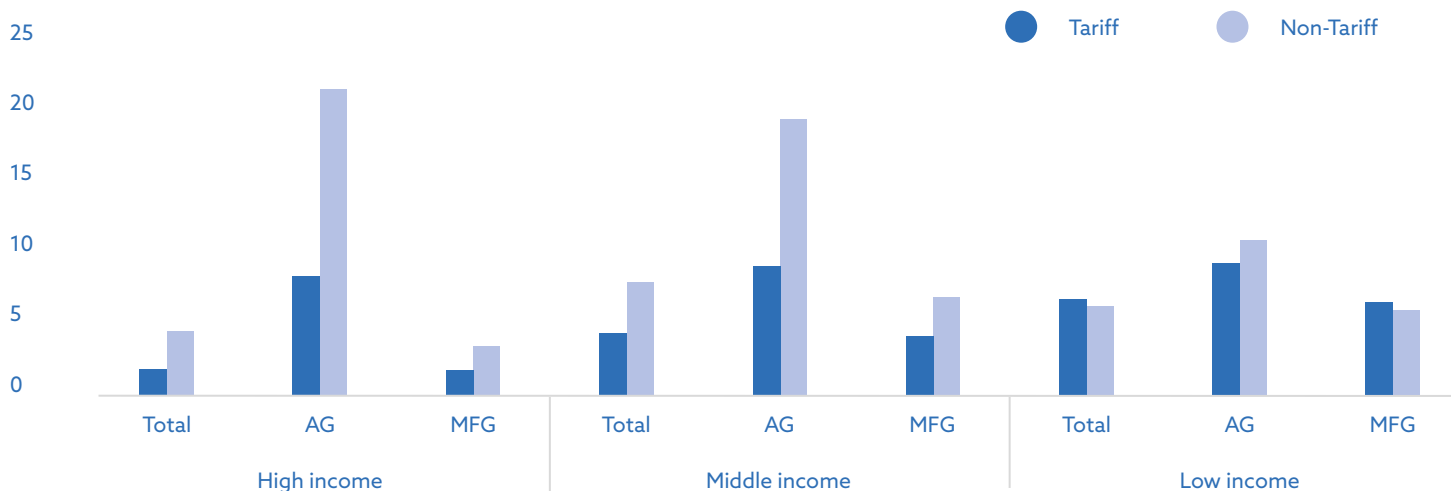
Figure 12: Tariff rate, applied, simple mean, all products (%).



Source: World Development Indicators.

Along with high tariffs and costly non-tariff measures, services are relatively regulated in African countries. Yet, while most of the services are weakly protected compared to other regions (see Figure 14), telecom services are the least protected with a Service Trade Restrictiveness Index less than 10 percent. This number ranges from 20 percent to 50 percent in both developing and developed regions.

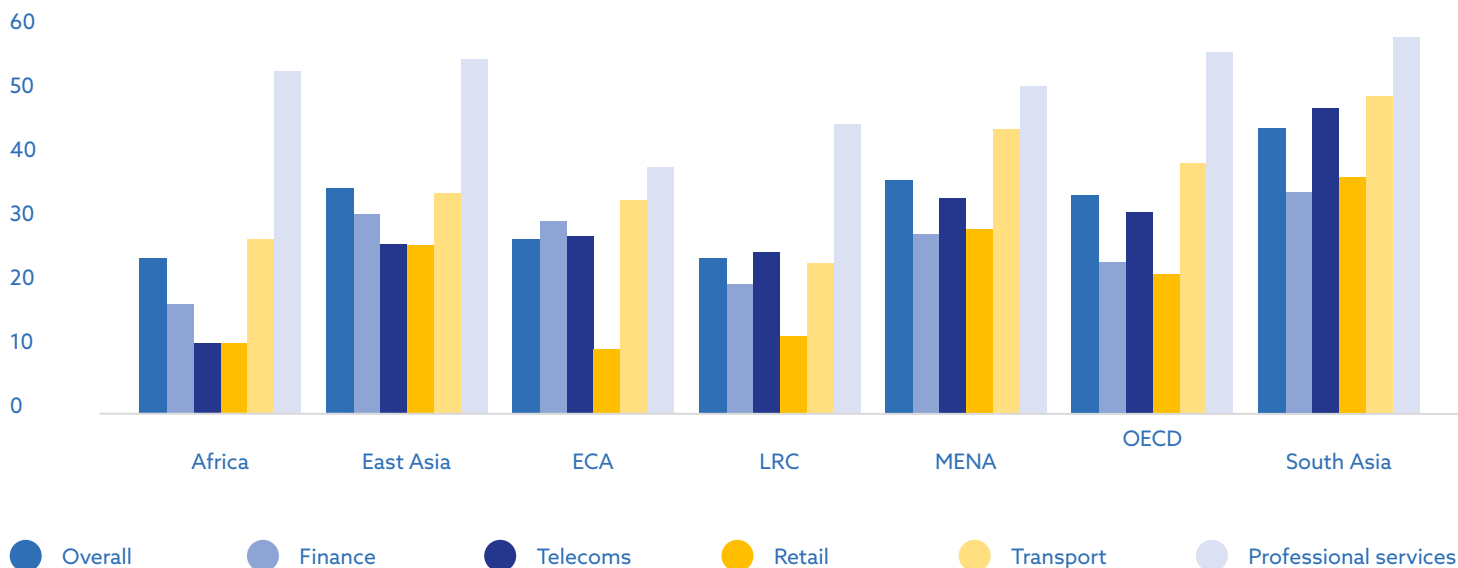
Figure 13: Overall restrictiveness index – by income level.



Source: Kee et al. (2009).

Note: AG stands for agriculture, MFG stands for manufacturing. Income levels are taken from the World Bank classification.

Figure 14: Regional average Service Trade Restrictiveness Index by sector, 2010.

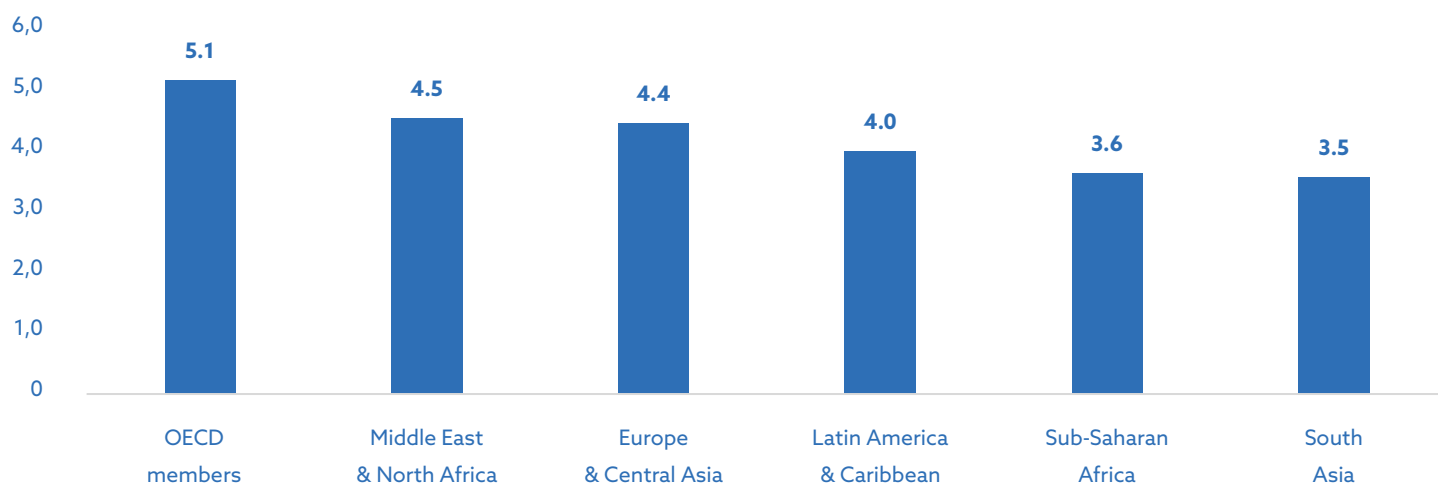


Source: Hoekman (2016).

Note: Indices range from 0 to 100, with 100 being completely closed to foreign competition. Data are only available for 2010.

In addition to these policy variables, infrastructure adds another layer to the trade cost in Africa. Figure 15 and 16 present the quality of port- and trade-related infrastructure. While Africa's index is the lowest for transport-related infrastructure, its index is slightly higher than that of South Asia for the quality of port infrastructure.

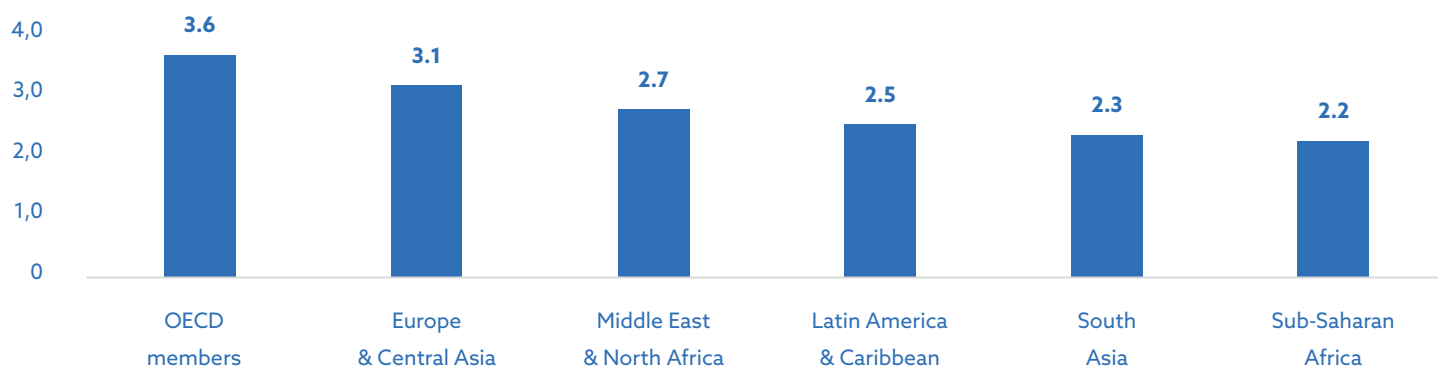
Figure 15: Quality of port infrastructure, 2018.



Source: World Economic Forum.

Note: 1=extremely underdeveloped to 7=well developed and efficient by international standards.

Figure 16: Quality of trade and transport-related infrastructure, 2018.

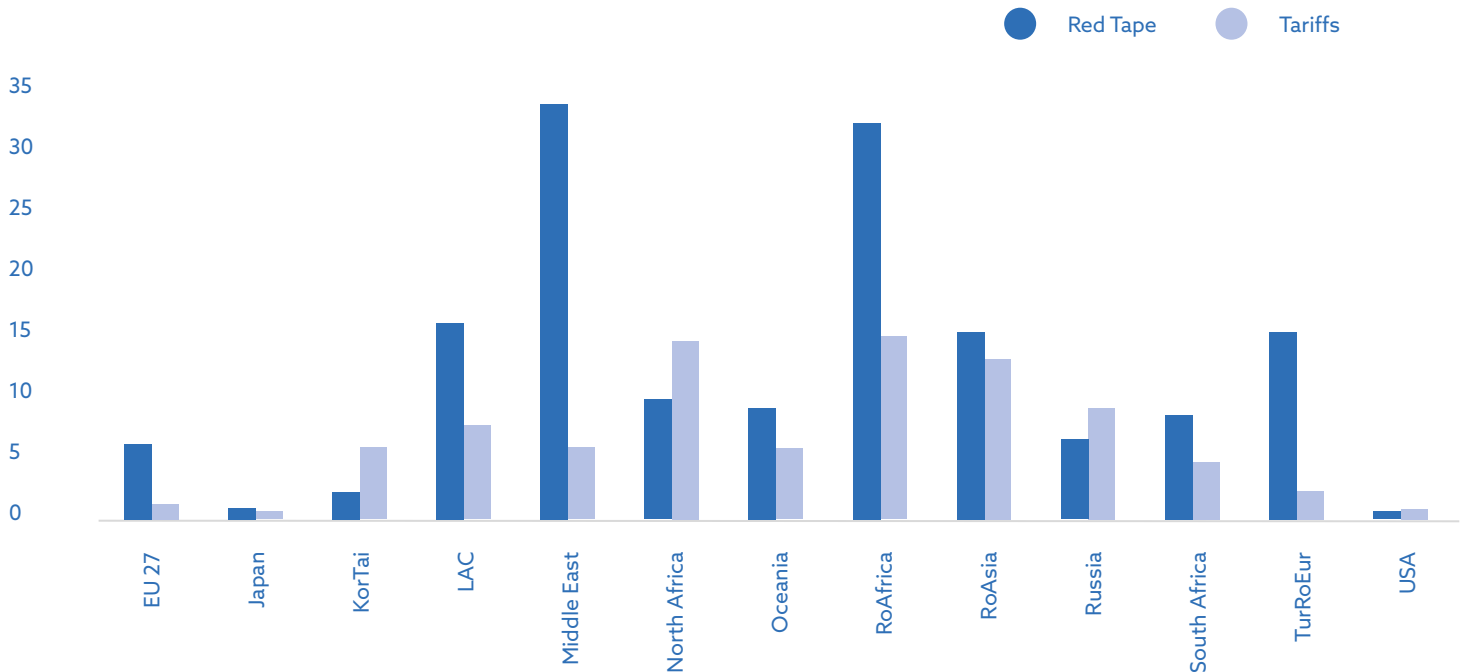


Source: Logistics performance index.

Note: Scale 1=low to 5=high.

As a consequence of all these trade impediments, time to trade is lengthy in Africa. Indeed, Zaki (2014), using a gravity model, computed the ad-valorem equivalent of red tape barriers and found that they are at least twice the level of tariffs (see RoAfrica in Figure 17).

Figure 17: Red tape barriers vs. tariffs (%).



Source: Zaki (2014).

Note: RoAfrica refers to sub-Saharan (without South Africa).

In addition to trade policy variables, institutional barriers hinder the increase of e-commerce and digitalization in Africa. Table 3 shows that, on average, African economies are lagging in terms of laws and regulations related to e-commerce compared to transition and Northern economies. Only a few African countries implemented legislation to regulate data and consumer protection, data transfer, cybersecurity and electronic transactions.

At the African Union level, as of 2019, out of 55 countries, 14 countries signed and five ratified (Ghana, Guinea, Mauritius, Namibia and Senegal) the 2014 Malabo Convention on Cyber-security and Personal Data Protection. This convention aims to establish regional and national legal frameworks for cyber-security, electronic transactions and personal data protection. At a regional level, two initiatives are worthwhile to be examined. First, the ECOWAS region promulgated the Supplementary Act A/SA.1/01/10 on data protection that specifies the required content of data privacy laws. This act also requires member states to establish a data protection authority. Out of the 15 ECOWAS members, only seven countries have enacted legislation that comply with the agreement. Second, the East African Community developed the EAC Framework for Cyberlaws adopted in 2010. Yet, this framework was rather vague as it did not specify explicit recommendations for its members (UNCTAD, 2016).

Table3: Share of economies with relevant e-commerce legislation (%).

	Number of economies	Share in e-transaction laws	Share in consumer protection laws	Share in privacy and data protection laws	Share in cybercrime laws
Developed economies	42	97.6	85.7	97.6	97.6
Developing economies	45.7	70.2	46.2	41.6	63.1
Africa	54	51.9	33.3	38.9	50
Asia and Oceania	50	70.8	41.7	37.5	66.7
Latin America and Caribbean	33	87.9	63.6	48.5	72.7
Transition economies	17	100	17.6	88.2	100
Total	196	77	50	57.1	71.9

Source: UNCTAD (2018).

Opportunities: Regional and Multilateral Perspectives

This section mainly discusses how digitalization could increase the ability of African countries to reap benefits from trade integration at the regional (intra-African trade) and global levels. At the regional level, AfCFTA was signed by 54 of the 55 African Union member states in 2018. It entered into force on 30 May 2019 and is considered a milestone achievement in Africa's history on regional integration. To date, it is ratified by 30 African Union member states (The Africa-EU Partnership, online, 2020). AfCFTA could encourage its members to engage in dynamic intra-African trade by drawing on economies of scale to accelerate the process of diversification and structural transformation of their economies (AFREXIMBANK, 2019). While the new trade area presents sizable opportunities to enhance the competitiveness of African industries and enterprises through better resource allocation and the development of regional value chains, these gains are not fully automatic.

As argued before, Africa is already open to international trade, with imports and exports of goods and services representing about 50 percent of its GDP in 2015-2016, which is similar to Asia and higher than the Latin America and Caribbean region (44 percent) (African Union Commission/OECD, 2018). Also, its integration landscape contains an array of regional economic communities, among which are COMESA, ECOWAS (and its two sub-regional blocks, the West African Economic and Monetary Union and the West African Monetary Zone), the Arab Maghreb Union, the East African Community, SADC and others. Intra-regional trade improved from 5.1 percent in 1980 to around 16 percent in 2018, but this remains low compared to intra-regional trade in Europe (73 percent) and Asia (52 percent) (Afreximbank, 2019).

Also, having a regional integration agreement does not automatically lead to strong trade flows in Africa. Only two of its regional communities have been found effective in boosting intra-African trade. Cross-border exchanges within the East African Community are five times larger than average trade flows within Africa, while in the West African Economic and Monetary Union, they are about three times larger. Meanwhile, the Economic Community of Central African States region continues to exhibit low levels of integration, with only 1.3 percent of total trade being intra-regional. This implies that Africa needs not to just integrate, but to integrate in a better way (African Union Commission/OECD, 2018).

Better regional integration in Africa could be achieved through the methods discussed below.

African Countries Need to Upgrade Their Trading Infrastructure, and This Requires Emphasizing Digitalization

As argued earlier, digitalization implies drastic changes in business models and production processes, and it could be an important tool to boost effective intra-African trade. Digitalization can lower barriers to entry into export markets and increase connectivity among African traders. In commodity markets, most agreements are conducted through bilateral negotiations, which increases heterogeneity in practices and reduces access to market information and business opportunities. ICT and digitalization of market platforms would increase access to more reliable information, guaranteeing more efficient, transparent and timely interactions among different actors. For example, in Uganda, TruTrade Africa is a social enterprise that integrates smallholder farmers in sustainable value chains and provides them with a reliable route to market and fair prices for their produce. In Kenya, an over-the-counter commodities market was supported by the initiative KACE, through which a trading show over the radio allowed buyers and sellers to communicate their bids and offers.

Moreover, digitalization offers payment and logistics solutions that can enhance intra-African digital trade. For example, Afreximbank's Pan-African Payment and Settlement Platform provides digital payment infrastructure that facilitates trade payments and settlements in national currencies to foster intra-African digital trade.

The automation of customs procedures, introduction of electronic tracking and communication systems, digital management of inventories and digital excise stamps can also reduce trade costs and strengthen regional trade. Recently, the government of Rwanda announced plans to fully automate the clearance of exports and imports to reduce the time taken to clear cargo, increase the flow of taxable goods and reduce international trade costs. The Kenyan government implemented a digital strategy to facilitate online applications and payments for key services.

On another front, intra-African trade has a higher skill and technology content compared to extra-African trade (Afreximbank, 2019). Trade in digitally-deliverable services and creative goods and services among African economies could present a good potential to enhance intra-African trade. Digitalization helps financial inclusion and expands the formal sector in the economy. An increasing number of entrepreneurs and businesses enter formality through retail electronic payment platforms and virtual savings and credit supply technological platforms. With better access to finance, new business models are developed and more product designs are traded

online (Ndung'u and Signé, 2020). For example, Aledin Nano and Jamii Africa are two innovative companies leveraging technology to distribute micro-lending and micro-insurance services to low-income people, raising financial inclusion and supporting trade in the process (Afreximbank, 2019).

Finally, African economies need legal efforts that better integrate trade and markets in the digital era. For example, in 2007, the East African Community created a Task Force on Cyberlaws to discuss authentication, cybercrime, data protection and privacy, intellectual property rights, competition, e-taxation and information security.

African Countries Need to Ensure Greater Complementarity Between African Partners' Trading Profiles

Indeed, complementarity can be achieved through better harmonization and coordination of trade liberalization and facilitation regimes and instruments. The latter are mainly related to border procedures, ranging from the electronic exchange of data about a shipment, to the simplification and harmonization of trade documents, to the possibility to appeal administrative decisions by border agencies.

African economies need to adopt four types of economic upgrading, as described below.

Functional



1. Functional upgrading, related to the range of activities performed in a value chain. For example, Morocco, through its strategic plans, Emerging Morocco (2005-2009) and the National Pact for Industrial Emergence (2009-2015), focused on new export activities, such as aeronautics, automotive, electrical equipment and textiles.

Product



2. Product upgrading, related to the type of products produced (unprocessed versus more sophisticated products). For example, Senegal's active government support helped the country to successfully diversify its exports through an agricultural value chain approach, mainly for rice, onions, groundnuts and fruits.

Value chain



3. Value chain upgrading, related to the type of skills required to enter new value chains.

Process



4. Process upgrading, referring to productivity enhancement through local innovation. Several African economies adopted strategies to enhance their integration at regional and global levels. For example, since 2007, South Africa's Industrial Policy Action Plan has prioritized sectors that are medium to high value-added and labour-intensive (agro-processing, vehicles, textiles and green energy). The Action Plan provides incentives and coordinates actions to strengthen skills and industrial and scientific capabilities. Also, South Africa's lead companies in the telecommunication, banking and mining sectors make direct investments in other African countries to exploit regional markets¹³ (African Union Commission/OECD, 2018).

The relationship between regional integration and digital trade could be regarded as a two-way relationship. As argued above, digitalization can be used as a tool to boost intra-African trade. Meanwhile, African regional organizations can also promote digitalization. For instance, AfCFTA is expected to unify fragmented markets

13 For example, Africa's biggest retail chain, Shoprite of South Africa, now has more than 260 supermarkets in 16 African countries.

to create one large market with 1.2 billion consumers. With the help of a growing number of African web-based platforms and portals promoting cross-border digital trade, such as Trade Africa Online and Jumia, intra-African digital trade is expected to increase. Hence, AfCFTA could be an enabler for e-commerce in Africa through better harmonization and coordination of trade liberalization and facilitation measures. While AfCFTA does not include an explicit provision on e-commerce, e-commerce was recognized by the African Union Conference in July 2018 as having the potential to contribute toward increasing intra-African trade. It would benefit African economies to negotiate a standalone protocol on e-commerce in the context of phase II of AfCFTA negotiations (UNECA et al., 2019).

At the global level, Africa suffers from a relative marginalization in world trade, with its share in world exports falling from about 6 percent in 1980 to 2.3 percent in 2018 and its share of world imports falling from about 4.6 percent in 1980 to 2.5 percent in 2018 (Afreximbank, 2019). This is explained by two main factors. First, although Africa succeeded in diversifying its trade partnership with countries from the global South (China, India and other emerging economies),¹⁴ the composition of its export basket is unchanged with high commodity dependence of a majority of its countries on minerals, ore, metals and energy exports for reserves. For example, Egypt, Morocco, Mauritius and South Africa, and most countries in the region have a commodity export dependence of more than 80 percent (Afreximbank, 2019). Second is the continuous existence of impediments to trade (mainly complicated customs procedures); expensive logistics; inadequate broadband connectivity and lack of skills in ICT; underdeveloped national digital infrastructures; and policy and regulatory frictions due to data privacy rules, incomplete intellectual property rights, excessive regulation of online platforms and the questionable liability for internet intermediaries of content. A third of players in the Kenyan e-commerce ecosystem find foreign market access barriers a significant hurdle to e-commerce transactions (Suominen, 2017).

Africa could overcome these problems through digitalization and trade facilitation agreements. Trade facilitation refers to the simplification, modernization and harmonization of export and import processes. In 2013, WTO member states concluded negotiations over the Trade Facilitation Agreement (TFA), which entered into force in 2017. The TFA aims to overcome border inefficiencies, complex customs rules and other trade barriers, which would improve trade efficiency worldwide. As of July 2019, 35 out of 44 African WTO members ratified the TFA (Tralac, online, 2020). According to the WTO, TFA implementation in Africa implies reductions in trade costs that would equal a 17 percent cut in ad valorem tariffs, the greatest gain in the world (Suominen, 2017).

Digitalization has the potential to enhance the implementation and functioning of the TFA. The automation of customs procedures and logistic operations is critical in achieving more efficiency and transparency in trade transactions. With this multilateral agreement in place and with the commitment of African countries to implement its provisions, Africa could achieve better prospects in trade with WTO members.

14 In 2016, Africa's trade with emerging economies accounted for 51 percent of its exports and 46 percent of its imports (African Union Commission/Organisation for Economic Co-operation and Development, 2018).

This would imply that the TFA is also an enabler for e-commerce since it reduces time and costs of cross-border trade.

The simultaneous implementation of the TFA and digitalization would benefit Africa's integration in global trade. First, digitalization would enable African economies to reduce their export commodity dependence and to diversify into more value-added products and services tasks. The digitalization of value chains (through the use of new software services and smart machines for product development, planning and delivery) could increase productivity and help them move up the global value chain. Moreover, digitalization could also benefit the agricultural export potential of many African countries, such as Ethiopia, Malawi, Nigeria and Tanzania. Mobile Web technology is used for obtaining information regarding competitive pricing, agricultural advice and weather information (Ndung'u and Signé, 2020). Second, digitalization and the TFA would reduce trade costs, help African exporters boost their market shares and increase their competitiveness. For example, the digitalization of financial services (blockchains) reduced the costs of oil trade from Africa to China by 30 percent (UNOSSC, 2018). Again, the gains from digitalization to trade are not fully automatic at global levels. These gains depend on the existence of supportive infrastructure and supportive national and international policies.

4. Conclusion and Policy Recommendations

This paper investigated the importance of digitalization in fostering trade integration among Southern economies with a special emphasis on intra-African trade. As the global economy experiences important changes brought about by digital technologies, South-South cooperation in a digitalized world presents new opportunities for and areas of cooperation between and among Southern countries. Many of these new opportunities can stimulate national and regional efforts to achieve the Sustainable Development Goals by 2030. This paper shows that Africa still has good prospects for regional and global integration. Digitalization can be considered a tool to boost South-South trade and especially intra-African trade. Regional and multi-lateral trade agreements must account for the increasing role that digitalization of trade plays in fostering integration in regional and global value chains.

African countries can use digitalization of trade as a tool and an objective. To this end, policy recommendations are provided below. In general, South-South cooperation represents an unprecedented opportunity that can promote integration among African countries, particularly through the means of AfCFTA since it has been ratified by 30 of 55 African countries.

National Recommendations

Improvement of digital infrastructure—including coverage and outreach—is a prerequisite to boost e-commerce and for successful integration of African countries into global trade in the digital era. Many areas in African countries (especially rural areas) still lack broadband connectivity. Strategies should be put in place to increase awareness among African populations about the ability to use the internet for economic and social gains, rather than merely for social networking.

It is important to note that some African countries may be reluctant to adopt new technologies that threaten the jobs of low-skilled workers. It is important for governments to invest in education programmes and initiate reskilling programmes that can ensure complementarity between labour skills and technologies (Ndung'u and Signé, 2020). Digitalization and training policies have a two-way relationship: while such policies can enhance skills development for digitalization, digitalization increases the viability of these policies via the availability of online courses (Afreximbank, 2019).

Regional Recommendations

African countries can consider formulating a comprehensive and holistic African e-commerce strategy. This can be especially done through the AfCFTA. Indeed, such a strategy would need to be designed to adapt to the continent's specific needs and objectives, enhancing African countries' readiness and maximizing their participation in regional and global e-commerce. Policymakers need to take into account that traditional hurdles to cross-border trade still exist, even in the era of digital trade. Hence, this requires timely and effective commitments in implementing Trade Facilitation Agreement provisions.

However, these broader agreements do not usually directly address issues arising from cross-border trade in small parcels, which is an important aspect of e-commerce that can be inhibited by cross-border impediments. African economies might look toward Latin America's *Exporta Fácil* programme that simplified customs clearance for Latin American small- and medium-sized enterprises for shipments typically weighing less than 30 kilograms and with a value of less than \$5,000 (Suominen, 2017).

Institutional Recommendations

To further promote African trade integration in the digital era, some legal issues need to be considered. First, with digitized products and services, intellectual property rights laws must be updated to regulate the fair use of such products and services and to limit the use of protected materials without permission from the rights' holders. Second, consumer protection laws should be activated to increase consumer trust in online products and services and online payments. Third, the legal liability of online intermediaries serving domestic markets need to be established to prohibit trade in unlawful contents.

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