

WTO Chairs Programme

# Adapting to the digital trade era: challenges and opportunities

Edited by Maarten Smeets



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# **Adapting to the digital trade era: challenges and opportunities**

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# Foreword

We are pleased to deliver preliminary remarks to this compilation of research work on digital trade prepared by the WTO Chairholders, Advisory Board members and the WTO Chairs Programme (WCP) team of the WTO Secretariat.

The measures of lockdown and social distancing that governments around the world have adopted to mitigate the effects of the COVID-19 pandemic have led to increased online shopping and teleworking, making this book even more relevant and timely. The book adds significant value to the debate on digital trade by combining academic perspectives with policy relevance and recommendations.

The digital trade and information technologies that characterize today's society provide countries around the globe with access to markets that were previously considered unreachable. The barrier of geographical distance

is no more: consumer choices are no longer restricted by and limited to the goods found in local stores or in nearby towns. E-commerce platforms provide consumers with access to world markets in real time. Likewise, producers can reach consumers for the supply of goods and services almost instantly and in ways that were previously unimaginable, all thanks to new technologies.

The world economy has changed significantly since the World Trade Organization (WTO) was founded, amongst other due to digitalization. We need to ensure that our trade system is up to date so that we can exploit new opportunities and address challenges of the present world. There is a need to reform the rules that govern trade, and this should be done in an inclusive manner. Hence the relevance of the central question addressed in the book – how can members ensure that the

changes brought by digital technologies benefit all and support inclusive growth?

This book presents a sample of the work achieved so far within the framework of the Chairs programme, which finances Chairs in universities located in developing countries. While not necessarily endorsing all views expressed<sup>1</sup>, France and the Netherlands encourage enhanced and operational

comprehension of the stakes of digital trade through academic research.

We thank the WCP team for their hard work and commitment to making the programme what it is today. We equally thank the Chairholders for their continuous support and dedication to the programme and the Advisory Board members for having used their knowledge and skills in service to the community and in support of the WTO multilateral trading system.



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<sup>1</sup> For instance regarding the status of EU Privacy Protection in the digital era.

# Note on the WTO Chairs Programme



The WTO Chairs Programme (WCP) was launched in 2010 as a capacity-building project. It aims to enhance knowledge and understanding of the trading system among academics and policymakers in developing countries through curriculum development, research and outreach activities by universities and research institutions. Information on the WCP is available at [www.wto.org/wcp](http://www.wto.org/wcp).

Following the conclusion of the first phase of the WCP (2010-2013), it was extended for a second period of four years in 2014. After the conclusion of the second phase in 2018, the WCP underwent an independent external evaluation in 2019, which led to the WTO's management decision to extend the program and launch a third phase of the WCP in the fall of 2020 for implementation in 2021.

WCP chairholders are selected through a competitive process. Currently, there are 19 active chairs.

The programme has provided financial support of up to CHF 50,000 per annum per institution for a period of up to four years to each newly selected chair. The WCP in its second phase was funded by the Netherlands with co-funding by France, in support of the two French-

speaking least-developed countries (LDCs) in the WCP.

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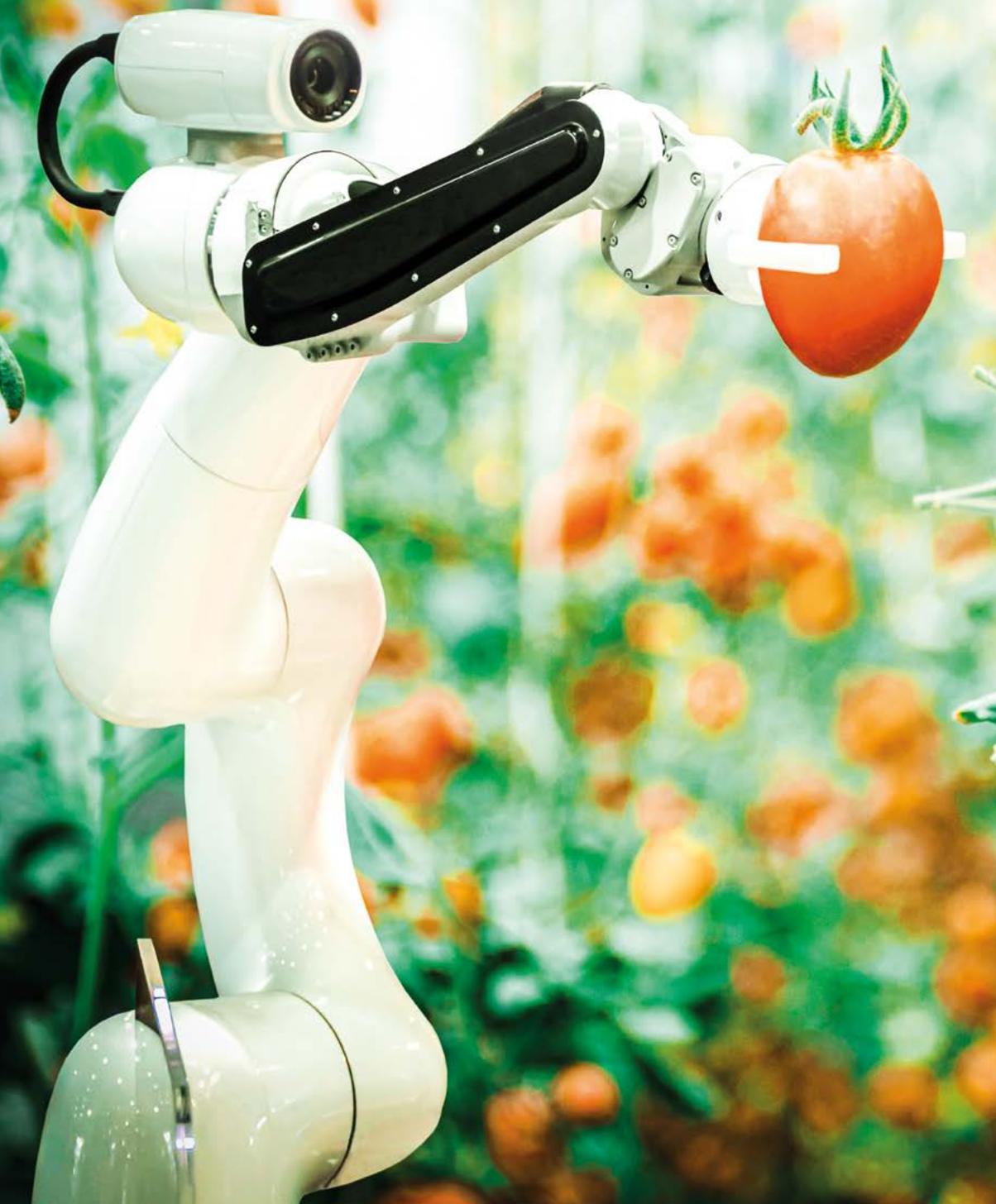
This third book prepared under the auspices of the WTO Chairs Programme (WCP), *Adapting to the digital trade era: challenges and opportunities*, contains contributions from the WTO Chairholders of Phases I and II, Advisory Board (AB) members, WCP team and WTO staff members who peer reviewed individual chapters and offered their perspectives on the Chairs' analyses and findings. It contains a total of 16 chapters and 13 commentaries, providing various insights on digital trade. Several chapters were presented as working papers during the Aid for Trade side event held at the WTO from 3 to 5 July 2019 and during an academic WCP session held at the Public Forum on 9 October 2019. These events provided opportunities to AB members, academics, delegates, policymakers and representatives from civil society to comment on the papers and discuss the policy options emanating from the analyses.

Current and former members of the WCP team, including Nassim Oulmane, Roberta Piermartini, Mustapha Sadni Jallab, Maarten

Smeets, Robert Teh and Qing Ye, contributed to the book with a chapter or commentary. Maarten Smeets, heading the Academic Outreach and WTO Chairs Programme section in the Knowledge and Information Management, Academic Outreach and WCP Division (KMD), which houses the WCP, was responsible for the overall coordination and editing of the book and prepared the introduction and the concluding chapter.

This book thus is the result of a collective effort by WCP team members, Chairholders and their co-authors, AB members, WTO staff members, discussants of the draft papers, participants to and attendees of the WTO events. The book would certainly not be what it is without the support of William Shaw, who assisted in the preparation of the book with substantive editing, and the WTO's in-house editors, including Anthony Martin and especially Stephanie Carmel, who meticulously assured the final text editing of the book. The book was designed by Touchline. Sandra Rossier interacted with the authors, ensuring their timely inputs and feedback.

# Introduction





Digital innovations are transforming the global economy. The decline in search and information costs, rapid growth of new products and markets, and emergence of new players ushered in by digital technologies have the promise of boosting global trade flows, including exports from developing countries. At the same time, digital technologies are also threatening privacy and security worldwide, while developing countries that lack the tools to compete in the new digital environment are in danger of being left even further behind. This book from the World Trade Organization (WTO) Chairs, members of the Advisory Board and WTO Secretariat staff examines what the rapid adoption of digital technologies will mean for trade and development and the role that domestic policies and international cooperation can play in creating a more prosperous and inclusive future.

The first section identifies the challenges and opportunities posed by digital technologies to developing countries and the role of international cooperation, whether regionally or in the WTO, in addressing them. The second section discusses how countries in different developing regions view the opportunities and challenges of digital technologies and how policymakers are responding to them. The third section considers examples of how digital advances, for example the growth of e-commerce and the development of blockchain technology, may contribute to inclusive growth. The fourth and final section discusses the role of domestic policies and regional approaches to digital trade and offers some key findings.

## **Section 1: The digital trade era – challenges and opportunities for developing countries**

Innovative digital technologies have considerable potential for boosting developing countries' exports. In Chapter 1, Bekkers, Koopman, Sabbadini and Teh provide an empirical illustration of the potential gains in trade, both globally and for developing countries, from the adoption of robots, greater reliance on artificial intelligence and big datasets, more intensive use of information and communications technology (ICT) services by other sectors of the economy, and the reduction in trade costs because of new digital technologies. They use the WTO Global Trade Model, a recursive, dynamic computable general equilibrium model, to generate simulations showing the impact of technological change on trade. The model compares a scenario showing the impact of digital technologies on 16 sectors, 14 regions and 5 factors of production with a baseline scenario where the pace of technological change is based on past trends. While the accuracy of the point forecasts generated by the model is uncertain, this exercise helps to discipline qualitative projections, takes into account the indirect effects of economic changes and provides some insight into the likely quantitative impacts of new technologies on international trade.

The simulations indicate that digital technologies will have a significant impact on trade. On average, between now and 2030 global trade growth would be 2 percentage points per annum higher, and developing

countries' trade growth 2.5 percentage points per annum higher, as a result of the adoption of digital technologies. Services exports would become a bigger part of global trade, making up more than a quarter of total trade by 2030, while the share of services imports in manufacturing gross output would also rise. These findings run counter to concerns that increased use of robots and 3D printing will result in a reshoring of production to the advanced countries, thus impairing export opportunities for developing countries. If these results are correct, the reduction in trade costs due to digital technology has a larger impact on trade than does the increased opportunities for more closely matching demand owing to proximity to markets and improved efficiency of custom-made production.

## **Section 2: Strategic directions and policy implications for developing countries**

This second section of the book takes a broader policy perspective to analysing the challenges and opportunities that digital technologies offer for developing countries. We have no ambition to provide an exhaustive analysis of the topic, but rather the goal is to select particular countries and issues where the growth of digital technologies is having a marked impact. These country and policy examples hopefully can provide insights that may be applicable to other situations.

Our first example is the analysis by Baghdadi and Guedidi (Chapter 2), who explore an important aspect of how digital technology could improve developing countries' trade prospects

by examining the role of internet technologies in strengthening ties between African economies and global value chains (GVCs). The internet is likely to play an increasingly important role in reducing the time and costs required to trade. Digital platforms and logistics technologies (among others) could reduce search costs by facilitating matching between buyers and sellers, and the use of robotics, artificial intelligence and Internet of Things (IoT) applications could substantially reduce shipping and customs processing time. This reduction in time and costs is a critical issue for participation in GVCs, where goods are traded across borders several times. Access to the internet also can save time and money by facilitating coordination and monitoring across firms in a GVC.

African firms already participate to some extent in GVCs, but African countries' participation in GVCs is largely through supplying inputs (often raw materials) to foreign firms for further processing (referred to as forward participation). African firms play less of a role in backward participation in GVCs, as represented by the share of inputs of foreign origin in a firm's total material inputs. Country-level data from the United Nations Conference on Trade and Development (UNCTAD)-Eora GVC Database and firm-level data from the World Bank's Enterprise Survey are used to measure the relationship between Africa's participation in GVCs and the spread and quality of internet technology on the continent. The authors find that access to the internet and internet infrastructure (represented by the availability of broadband technology) increases the participation by Africans in GVCs, and that internet

connectivity has a stronger influence on forward participation in GVCs than on backward participation. These variables also have a greater impact on forward GVC participation for Africa (both in terms of firm-level and country-level data) than in other regions of the world. An important implication is that improvements in internet infrastructure could have a significant impact on African firms' ability to expand their participation in GVCs.

In his commentary on Chapter 2, Newfarmer provides an overview of the findings and conclusions that internet use and infrastructure are particularly important for "high-tech manufacturing" and "high-tech services" exports in GVCs. Newfarmer points out Dollar's research that "the higher the technology (knowledge) intensity of a sector, the more significant the increase of complex GVC activities" (2019, p. 1). Referring to de Melo and Twum's recent work (2020) and pointing out that, despite efforts of the regional communities (RECs), regional value chains remain only at the early stages of development, Newfarmer suggests further broadening the research agenda on value chains in Africa. By way of example, he notes that regional value chains in the East African Community (EAC) amount to only 1.7 per cent of total gross exports, which stands in stark contrast with the Association of Southeast Asian Nations (ASEAN) (17.2 per cent). He concludes noting that for new technologies to fully translate into increased exports and rising incomes, policies must go beyond internet infrastructure. Trade policy needs to keep pace with communication and digitization policies and, to that end, the African Continental Free Trade Area (AfCFTA) and its efforts to

deepen regional agreements hold enormous promise.

The transactions with GVCs discussed in Chapter 2 have an increasing role in facilitating consumer and business purchases within Africa, and so too does the internet.

In Chapter 3, Seetanah, Padachi, Fauzel, Sannasse and Boodoo discuss the importance of purchases over the internet in Mauritius, which is a leader in e-commerce in Africa. Mauritius has the second highest (after Libya) share of the population making online purchases in Africa. The rise in retail e-commerce was driven by increases in internet use and penetration, coupled with increased credit card use and the development of secure online payment systems. Mauritius also topped the UNCTAD B2C E-commerce Index (e-readiness) for Africa.

Chapter 3 analyses retail customers' perceptions about e-commerce, based on a survey of 250 respondents and a number of in-depth interviews with the top management of 12 Mauritian firms engaged in online shopping across different business sectors. The customer survey revealed high levels of satisfaction with online shopping, due to wider choices, the ability to save time, accessibility and the relative ease of searching for products online. Major concerns included uneasiness over the potential disclosure of personal information and the limited ability to contact vendors. Respondents who have not shopped online cited concerns over navigating online, payment security and high costs. Online sellers expressed considerable optimism over future market growth, but also were concerned about a local

bias towards international websites, technical limitations of internet service and the small market size. Interviews with policymakers cited the strong legal and regulatory framework supporting electronic payments but described a need for stronger regulatory cooperation with other countries on e-commerce, and more work to collect statistics. Technical assistance would be useful in these efforts.

In the commentary on Chapter 3, Hartzenberg explains how government policies have been of critical importance for Mauritius to radically transform and diversify the economy, transforming from a base product economy and preferences to a high-tech hub. Until a few decades ago, Mauritius was a single-crop (cane sugar) exporter to the European Union (under a preferential scheme). Policies are now fully geared towards helping Mauritius become a hub for ICT-related, financial and education services. Government policies are centred on supporting digitally enabled growth and they work: Mauritius tops the rankings for Sub-Saharan Africa, followed by South Africa, Nigeria and Kenya. She then looks deeper into the policies, either considered or already put in place, on the African continent including at the African Union, which put e-commerce on Africa's trade agenda, the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC), focusing on digitalization, e-regulation, e-logistics and e-trade. She also notes that the inclusion of e-commerce on the AfCFTA's agenda has proved to be a contentious matter, with African countries holding different positions on the treatment of e-commerce when it comes to addressing regulatory issues.

The analysis by Kiriti Nganga and Mbithi of the challenges and opportunities afforded by digital trade in Kenya (Chapter 4) confirms that e-commerce has grown rapidly in that country, supported by new legislation and government policies. Laws have been passed to provide a framework for the provision of ICT services, e-commerce transactions, data protection and access to information. The government also has established one-stop shop centres for the delivery of government services to citizens and for trade logistics. The policies outlined in the government's Digital Economy Blueprint provide a solid basis for the expansion of digital trade through the establishment of the AfCFTA.

The growth of digital trade will open up new opportunities for the provision of online services, promote export diversification, boost efficiency and growth in manufacturing, improve competition in the financial sector, increase access to market-relevant information, and increase market access for micro, small and medium-sized enterprises (MSMEs). However, the potential of digital trade is constrained by lack of access to finance, low incomes, limited broadband and fibre coverage, inadequate transport infrastructure and skills gaps. The legal and regulatory framework is insufficient to protect against cybercrime, ensure privacy, support the interoperability of mobile money platforms and banks, promote consumers' trust in online transactions, protect intellectual property and protect digital sites from liability for customers' posts.

**“Digital innovations are transforming the global economy.”**

Referring to the international literature and findings presented by international organizations, Oulmane and Sadni Jallab, in the commentary on Chapter 4, support the evidence provided by Kiriti Nganga and Mbithi, underscoring that e-commerce is a key factor in achieving the goal of economic development in Africa and specifically in Kenya. E-commerce can promote entrepreneurship, contribute to developing the private sector and creating jobs. It also plays a critical role in connecting to GVCs. Data are provided showing that Africa has a huge potential in digital trade as its young population is growing very rapidly and engages heavily in this mode of producing and consuming. Africa faces considerable challenges in pursuing digital trade policies and

has a low level of internet penetration compared to that of other countries. Also, most African countries have weak infrastructure. In order to advance digital trade in Africa, regulatory systems need to be developed further not

only at the national level, but equally at the regional level. The AfCFTA plays a critical role and so do international institutions such as the United Nations Economic Commission for Africa (UNECA).

In Chapter 5, Igue, Alinsato and Agadjihouédé analyse the potential for e-commerce activities in Africa. The share of the African population with internet access has increased rapidly in recent years, and the continent's share of global internet connections has risen. The rapid growth of internet penetration and in the use of mobile telephony, the

development of mobile money services, the increased use of credit cards and increased access to bank accounts have greatly boosted financial inclusion and encouraged reliance on electronic payments, thus establishing a strong basis for e-commerce development. Online payments or purchases increased by 240 per cent from 2014–2017 in Africa, compared to only doubling in Asia and smaller rises in Europe and the United States. Firms, including small and medium-sized enterprises (SMEs), have boosted their internet presence in terms of the number of websites and use of e-mail. Nevertheless, Africa accounted for less than 2 per cent of global e-commerce transactions in 2017.

Several factors constrain e-commerce on the continent. Cybercrime continues to have a large impact on Africa: about 80 per cent of African computers are infected by viruses or malware. Moreover, the legal framework to combat cybercrime is inadequate in many countries. More broadly, most African countries lack many of the basic requirements of a legal framework for e-commerce, for example, laws providing for the acceptance of electronic signatures and adequate consumer protection, while in many countries the legal/regulatory framework has several defects, including high tax levels and a lack of clarity on regulatory policies. Despite progress, the share of the population with a bank account remains low, which limits consumers' ability to pay for goods purchased online. The cross-country harmonization of rules required for cross-border e-commerce is also lacking. Reducing cybercrime, increasing participation in the financial sector and strengthening the legal

framework are key steps to promoting e-commerce activities.

Noting that African nations will likely not generate the huge number of new jobs needed to match their population growth, Sauv , in his commentary on Chapter 5, argues that a robust African digital economy will require deeper regional cooperation, the pooling of resources and information sharing on emerging best practices across several key areas. These include a solid digital infrastructure, digital literacy and skills, digital financial services and digital platforms, as well as digital entrepreneurship and innovation. These efforts need to be paired with building a solid set of trade rules, but they will not suffice alone. Based on how rule-making in other areas has gradually evolved, he suggests taking a closer look at various regional trade agreements (RTAs) and preferential arrangements, which offer many useful and relevant insights on how to negotiate rules for digital trade.

As Sauv  argues, digitization presents a number of novel regulatory challenges for trade rule-makers that stem in no small measure from the increasingly blurred distinction between goods and services and the resulting uncertainty as to the applicable trade rules. In the absence of globally agreed norms on digital trade, he also believes that preferential trade agreements (PTAs) can serve as laboratories in which to experiment with – and adopt – elements of a nascent regulatory regime governing electronic transactions and digital trade. The AfCFTA features a built-in negotiating agenda on e-commerce and digital trade, providing African countries with a ready-made setting in which to design a Pan-African digital

strategy and action plan aimed at accelerating the development and regulatory sophistication of continent's digital ecosystem and enhancing the volume of digitally enhanced cross-border transactions.

In Chapter 6, Jiang, Zhang and Jin discuss the recent history and the policy framework for e-commerce transactions in China. The dollar value of e-commerce transactions in China has increased enormously over the past 20 years, shifting from mostly business-to-business transactions in the late 1990s to the rapid development of customer-to-customer transactions beginning in 2000 (although the market was plagued by defects in logistical support and counterfeit goods) and achievement of a mature market by 2015, with rapid growth of internet users and logistics firms, along with increasing reliance on mobile phones. Since 2016, the growth in e-commerce transactions appears to have levelled off, while logistics and after-sales services have improved. Most e-commerce transactions concern manufacturing, as well as wholesale and retail trade. The market is characterized by increasing diversity, for example, the growth of e-medical services, the expansion of cross-border e-commerce, the rapid growth of social e-commerce and the development of online-offline transactions. However, the level of e-commerce development declines as one moves from east to west, which is closely related to the level of economic development and degree of marketization in each region.

Both the government and the private sector have played important roles in e-commerce development. Key supports have included improved

infrastructure, the rapid growth of mobile telephony, increased financing (particularly equity investment), the provision of rapid logistics services, the availability of a user-friendly internet platform and effective market regulation based on international agreements. China's national government has elaborated on e-commerce policies through five-year plans, while regional governments have also participated in planning and in adjusting the e-commerce policy framework in light of local conditions.

Building on the analysis presented by Jiang, Zhang and Jin, Ye, in the commentary on Chapter 6, provides more evidence and data on the rapid growth of e-commerce transactions and the transformative effects they have had on the global economy. China has significantly contributed to that development in the past 20 years, and it has become one of the largest e-commerce markets in the world. There are many cross-border e-commerce market players in China, including e-platforms, e-payment operators, e-vendors, warehousing operators and express shippers that jointly operationalize considerable numbers of online transactions and offline deliveries on a day-to-day basis. This process has been strongly supported by government policies and, in June 2015, the Chinese government rolled out its strategy to foster cross-border e-commerce in a policy document. This leads Ye to suggest that countries should benefit from the lessons learned in China in terms of devising digital policy strategies. Also, she advocates for coordination and rule-making at the international level.

In Chapter 7, Arfani, Hapsari and Perdana explore the structural and

practical issues that confronted the adoption of Indonesia's e-commerce roadmap (2017–2019). The roadmap focuses on eight key issues in the development of e-commerce: funding (focusing on start-ups and SMEs), taxation (including lowering some rates and easing procedures for small ventures), consumer protection (strengthening regulation and developing a National Payment Gateway), education and human resources (a national e-commerce awareness campaign and education programs for all stakeholders), logistics (strengthening courier companies and developing rural to urban logistics routes), communications (national broadband development), cybersecurity (establishment of a national surveillance and e-commerce monitoring system, provision of education on e-commerce cyberthreats and standardized data collection) and managerial issues (establishment of an operating management structure for the e-commerce roadmap). Implementation of the roadmap has faced difficulties, including (i) delays in executing laws and regulations; (ii) the failure to adequately address some key issues, including privacy protection and how technological innovations that provide for anonymity have facilitated illegal transactions; and (iii) the lack of a comprehensive treatment of data collection.

The authors propose two major categories of issues in order to identify problems and challenges confronted by stakeholders. The structural category concerns the larger governance context of the country's digital economy and includes laws and regulations, the institutional setting and implementing phases, which involve socio- and political economic

interplays among key players. The second category represents practical issues that affect the digital economy. The authors present two cases to illustrate efforts by stakeholders to resolve disagreements on policy, including Indonesia's position on the WTO moratorium on e-commerce and local initiatives (such as the one in the city of Yogyakarta) to develop the digital economy.

In the commentary on Chapter 7, Olarreaga observes that the comparative disadvantage Indonesia and other countries have on electronically transmitted goods and services is mainly due to the lack of a strong infrastructure that is needed to support the digital sector. Low internet e-commerce and credit card penetration and problems with postal services are hard barriers to overcome when trying to increase the competitiveness of electronically transmitted goods and services. He goes on to argue that problems should always be solved at the root, rather than applying secondary policies. The first best solution for addressing low internet penetration is to address the source rather than using secondary policies such as trade-distorting taxes. Not only are they costly and inefficient, they cannot substitute for first best solutions. He suggests alternative ways of funding policies geared towards better internet, e-commerce and credit card penetration, and postal services, and which consist of issuing government bonds, or, if that option is not available, other and less distortive border taxes, including land taxes, sales taxes, VAT and taxes on firms' profits.

Pogorletskiy and Sutyurin discuss the taxation of e-commerce in Russia in

Chapter 8. The e-commerce sector is small, but its potential for growth is enormous. Thus, tax rates on e-commerce in Russia should remain moderate, given the sector's small size (so the rise in tax revenues from higher rates would be small) and substantial growth prospects (so future tax revenues from a developed sector could be quite large). Russian authorities are establishing effective automated systems for collecting taxes and customs duties on cross-border e-commerce, calculating VAT compensation to exporters and accounting for receipts in online stores. These systems will help to prevent abuse of the tax system, as well as reduce the cost of compliance by firms.

The Russian taxation of e-commerce activities presents two important challenges. First, consumer goods purchased directly from foreign online sellers enjoy significant tax advantages compared to imports purchased in Russian retail outlets, undermining the profitability of Russian importers and reducing tax revenues. Second, the VAT levied on foreign exporters of electronic services creates uncertainty because the legal definition of electronic services is unclear and impedes the operations of multinational companies in Russia because VAT is taxed on intra-firm imports of services.

In the commentary on Chapter 8, van Gorp notes that traditional tax systems need to be reviewed because the taxation issues of e-trade are more complex and demand new frameworks for fair taxation while at the same time allowing enough room for innovation. She considers Russia an interesting case because the country's budget suffers from tax losses reflected in

the fact that despite the growing significance of e-trade as a portion of overall international trade, the fiscal effect of its taxation on national budgets is insignificant. She supports the proposition by the authors to focus on the stimulating role of taxes in international trade rather than on increasing the collection of taxes whereby the emphasis on customs duties and excises is more important for visible goods, while for e-services and products, import VAT becomes more important.

Improving the efficiency of trade logistics is a key element of reducing trade costs, promoting global and regional trade and supporting the expansion of e-commerce. In Chapter 9, Awad-Warrad, Boughanmi and Hwang compare the quality of logistics services in Jordan, Oman and Hong Kong, China, from the point of view of their ability to support increased e-commerce transactions. The logistics sector plays an important role in supporting the growth of e-commerce in all three economies. Each has also established legal frameworks for ICT-related transactions. While the logistics infrastructure is stronger in Jordan and Oman than in many other countries in the Middle East and North Africa, the quality of logistics services in these countries remains well short of the level in Hong Kong, China. The share of the population with internet access in Hong Kong, China, is somewhat above that of Oman and Jordan. However, Hong Kong, China, consistently rates among the top 10 to 15 economies in terms of the framework supporting business-to-consumer e-commerce, logistics services and ICT development, while Oman is ranked around the top third and Jordan around the middle or lower in most

indicators surveyed in the chapter. And export costs, and to a smaller extent import costs, are much lower in Hong Kong, China, than in Jordan or Oman.

In the commentary on Chapter 9 and based on a review of the literature, Sarris supports the findings by Awad-Warrad, Boughanmi and Hwang on the role of improvements in trade logistics performance in the form of cost and time to export. One aspect of the new international economy is the proliferation of value chains, with products and services that are intermediate inputs to a final product going through many countries or many times through the borders of one country before reaching final assembly. This suggests that the longer the product value chain the higher the proportion of final product value that can be affected by border measures. It follows that the reduction in trade costs, via increases in efficiency of trade procedures, could expand the length of a given value chain, by reducing the costs of extra steps in the chain. This in turn could reduce obstacles for many SMEs to enter some segments of the value chain, and hence increase the production and trade opportunities for such firms. Countries with large improvements in trade facilitation will thus have more chances of entering long GVCs.

The lack of a WTO agreement has shifted responsibility for ensuring the free flow of digital trade to regional and bilateral trade agreements, while the growth of e-commerce has increased the importance of clear rules in this area for Latin American governments. In Chapter 10, López, Condon and Muñoz consider the new rules on digital trade in RTAs recently negotiated by Latin American

economies. The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the United States-Mexico-Canada Free Trade Agreement (USMCA) are among the most advanced regional agreements that cover the regulation of digital trade, particularly in the key areas of privacy, access to information and data flows. The CPTPP includes a comprehensive set of new digital trade rules that involves a binding commitment to allow the free flow of data, prohibits data localization requirements that could impede market entry, permits the use of all devices on the internet and requires all groups to adopt privacy protection regulations.

While the USMCA incorporates many provisions of the CPTPP, there are important differences between the two. For example, both agreements provide for the free transmission of information. However, the two agreements have a slightly different balance between the rights of governments to regulate cross-border data flows in the public interest and the rights of big data to engage in cross-border data mining that facilitates the development of new technologies, particularly those based on artificial intelligence. Thus, the lack of multilateral rules on the free flow of data has resulted in divergent approaches in RTAs.

According to Medhora's commentary on Chapter 10, there are two areas where the seeming technocratic e-commerce-related provisions of the USMCA mask deeper and more sensitive issues of power and national sovereignty. One is data localization, and the other is the capacity of national authorities to hold multinational digital platforms accountable for the content they carry. He points to the current

discussions on how best to manage content on digital platforms and where the challenges consist of balancing safety with freedom of speech. This tension is reflected in the regional approaches as opposed to multilateralism. As he points out, RTAs were traditionally used as “hot houses” in which policy approaches were tried before moving to the multilateral sphere. However, he notes that it is equally possible that RTAs act as a ratcheting mechanism, locking norms and practices negotiated by powerful players that stand to become a multilateral standard.

In Chapter 11, Thorstensen and Delich consider the challenges facing regulation of e-commerce by comparing the domestic regulatory provisions of Argentina and Brazil, along with their participation in negotiations of agreements on e-commerce regulation through the Southern Common Market (MERCOSUR) and the WTO. The value of e-commerce transactions is growing rapidly in Argentina and Brazil, and in both countries the share of the population participating in e-commerce transactions exceeds the Latin American average. Both countries have established a legal framework for data protection, regulation of the internet, consumer protection, taxation of e-commerce, and contracts and e-signatures. Argentina and Brazil also have submitted proposals for negotiations over the treatment of e-commerce transactions in WTO agreements, and included e-commerce provisions in free trade agreements.

However, different approaches to internal regulation of e-commerce and differences in positions in international negotiations indicate diverging

regulatory approaches that will increase legal uncertainty and thus constrain investments and market expansion in the sector. An exception is the regulation of data protection, where both Argentina and Brazil are following principles laid out in the European Union’s General Data Protection Regulation (GDPR). Further negotiations between the two countries over regulatory convergence for e-commerce could best be undertaken through MERCOSUR.

In his commentary on Chapter 11, Wu notes that both countries have sought to engage digital trade on their own terms. He highlights the three important contributions made by the authors that help us better understand the development of e-commerce in Argentina and Brazil: (i) the importance of robust regulatory reform; (ii) the role of participation in external processes in influencing internal developments; and (iii) the fact that both countries pushed domestic regulatory reforms on their own terms, without necessarily seeking regional harmonization. On this last point, there is a real concern that the lack of a single digital market in MERCOSUR will prevent regional firms from acquiring the scale economies necessary to become competitive globally. This raises the question of whether Argentina and Brazil are bound to continue as success stories. Both countries dropped in the UNCTAD B2C E-commerce Index rankings. Concluding on a more optimistic note and as digital competition is just beginning, the vital lesson to be drawn is that investing in legal reform and active participation in multilateral institutions can only get a developing country so far. In order to compete against advanced economies and

emerging Asian giants, developing countries need to invest heavily in human capital, stabilize macroeconomic conditions and achieve regional scale economies.

Nurse considers the policy issues raised by the use of digital technology in developing countries' "creative sectors", including, for example, entertainment (TV, movies, videos, games), visual arts, books, newspapers and magazines, advertising and architecture (Chapter 12). The creative sector is an important source of growth in the global economy, as personal, recreational and audio-visual services have expanded as a share of the expenses of the average household. Firms operating in the creative sector have been the fastest adopters of online and digital technologies. Digital creative trade has increased sharply in recent years and developing countries' share of the sector has risen. Digital content is replacing physical goods in the sector, for example, in music, books and gaming; copyright collections from digital sources are rising as a share of global collections (although digital collections remain small); and creative content accounts for a significant share of e-commerce, as well as content on mobile networks, the internet and blockchains.

Participation in the creative sector by developing countries appears to be increasing, although data availability is poor. The copyright sector contributes a substantial share of gross domestic product (GDP) and employment in several developing countries. To reap the potential benefits of creative industries, developing countries need to improve the quality and marketability of their content. The enhanced

integration of developing countries' creative industries in GVCs requires a shift in the industrial paradigm and business practice from the typical low value-added, standalone creative firm, cultural practitioner or artist operating in isolation to higher levels of collaboration, coordination and organization, along with a comprehensive approach to sectoral support. Key policy measures should include a stronger legal framework for creative industries (in particular improved copyright protection), reductions in tariff rates on the import of machinery that supports creative industries, financial support for the commercialization of creative activities, government involvement in business support services (e.g. training, incubators, innovation labs, market incubators, cluster development and market development programmes), the creation of enabling institutions to represent the interests of creative workers and firms, the generation of data on creative markets, and the harmonization of government policies towards the sector.

Meier-Ewert, in his commentary on Chapter 12, takes the point further, considering that the development of effective collective copyright management organizations (CMOs) is an important contribution to a functioning intellectual property (IP) system and is needed particularly in developing countries to ensure viability and financing of the creative sector. He argues that development and adaptation of the copyright system to the challenges of the modern digital world are required. Digital communication technologies have enabled global markets for digital products, whereas licences to use IP-protected content are granted on

a territorial basis and related IP rights are covered by domestic law. The paradigm shift in the significance of IP systems for the global digital marketplace creates a particular urgency in the area of copyright. A concentration of efforts in the development of an internationally compatible modern and responsive system of law and institutions in the area of IP is likely to be an excellent investment in the future opportunities of creative industries in developed and developing countries alike.

### **Section 3: Making the most of the digital trade era – inclusiveness, gender and development**

Parry, Jansen van Rensburg, Viviers and Orkoh consider whether the growth of the digital economy is consistent with further progress in inclusive growth (Chapter 13). Concern is growing over the rise of inequality in many countries, driven by differences in opportunities to develop human capital, international trade and technological progress. Digital technology can provide new opportunities to disadvantaged groups but can also exacerbate inequality and limit inclusiveness. Developed-country policymakers tend to stress the importance of the free transmission of data across borders, while some developing-country policymakers have advocated for a digital industrialization strategy to limit competition from large technology firms to encourage the growth of local digital capabilities.

The spread of the internet and other new technologies (artificial intelligence, robotics, the IoT and 3D printing) has generated challenges for employment, particularly for the poor, the

unemployed, women, people with disabilities, minority ethnic groups, and the small businesses operated by these groups. Nevertheless, digital technologies – particularly e-commerce – may hold promise for marginalized groups by increasing access to marketing and financial transactions; boosting services sectors, where many women are employed; providing youth with information about entrepreneurial possibilities, knowledge and skills; and helping small businesses compete with larger establishments by linking to suppliers or partners, and finding and communicating with the market. A cross-country study finds a positive correlation between internet usage and digital trade in goods and services, on the one hand, and a reduction in vulnerable employment, on the other. In addition, there is a positive correlation between greater internet usage and life expectancy. Perhaps the use of digital technologies in recent years has improved healthcare services.

Policies to use digital technologies to improve inclusive growth include improving the availability of data, solving the issue of uneven digital connectivity, establishing an effective regulatory framework for digital developments and data flows, upgrading education and skills training, and designing a digital trade policy that is appropriate for the level of income and inclusivity.

Building on the analysis by Parry, Jansen van Rensburg, Viviers and Orkoh, Piermartini, in her commentary on Chapter 13, stresses the role that trade policy can play in creating the right environment for a country to seize the opportunities that digital

technologies provide and to attract investment. This not only includes goods-related trade policy measures such as lower tariffs on IT products, but it also includes digital trade policy that fosters data exchanges and allows for the harmonization of e-certificates. Trade policies related to services sectors, such as finance, distribution, logistics and transport, are also key determinants for a

country to reap the benefits of digital technologies. She offers three main arguments in support of strengthening international cooperation to make digital technologies more inclusive, specifically that international cooperation: (i) may help to tackle the potential negative impact of digitalization on competition, resulting from market dominance (monopoly) by leading operators; (ii) may address the issue of data availability; and finally, (iii) may help to resolve some of the tensions generated by uncoordinated unilateral approaches to digitalization (“digital protectionism” or simply unnecessarily divergence). She feels that at the multilateral level, the WTO negotiations and joint initiatives related to services, electronic commerce and MSMEs can help deliver a more inclusive digital development. One policy that can contribute to bridging the digital divide is by making further commitments under the General Agreement on Trade in Services (GATS). This could be a way to enhance policy credibility and thereby help attract foreign direct investment.

In Chapter 14, Bahri focuses on how blockchain, a kind of electronic

bookkeeping that enables a list of encrypted transactions (known as a ledger) to be stored in a decentralized

manner, can help women in overcoming barriers to trade. Blockchain technology could significantly lower the cost of cross-border payments, security trading and compliance, while its anonymity and efficiency could enable many women, who otherwise would be constrained by law,

custom or high costs, to engage in financial and business transactions. For example, blockchain could be used to enable women who lack identification documents to undertake transactions that otherwise would require official identification (as, for example, through IDbox), which would facilitate women’s access to finance and their ability to effect financial transactions (as, for example, under a joint programme with UN Women and the World Food Programme assisting women in Jordan), and to prove their ownership of assets without interventions from male family members (as in a World Bank pilot project in Viet Nam). Blockchain can help MSMEs, more than 30 per cent of which are owned by women, to overcome costs associated with exporting and importing, and interact easily with consumers, other businesses engaged in the supply chain, customs officers and regulatory bodies. Blockchain also can increase women farmers’ access to information on crops and market conditions (as in the UN “Buy from Women” initiative), thus improving their bargaining position.

**“International cooperation is essential for realizing the full potential of digital technologies.”**

However, if not regulated properly, the expanded use of blockchain also could increase the relative return to sophisticated technology skills (for example, understanding of how to operate a blockchain-based mobile application, how to initiate a smart contract, or how to create, save or access documents) that men are more likely to have, and thus might erect even higher barriers to trade for women. Many regulatory agencies are either trying to catch up with this rapidly evolving technology or are in a major state of disagreement about the value blockchain adds to the ecosystem of international trade. This lack of regulation and the differences in country regulations create uncertainty that could impede the use of blockchain for the economic empowerment of women. The WTO could play a key role in developing guidelines for the use of blockchain in international trade to support the efficient and inclusive adoption of blockchain technology.

Analysing the channels discussed by Bahri and through which blockchain can empower women, Ganne writes in her commentary on Chapter 14 that blockchain can be a powerful tool to remove frictions from international trade and promote women's access to international markets but realizing the full potential of blockchain will require more than merely the technology. It will require political will and action to allow interoperability of blockchain platforms and to create a regulatory framework that is conducive to the large-scale deployment of the technology. It will also require addressing the digital divide through investment in physical ICT infrastructure and IT education for women. Women's access to the internet and ownership of digital

devices remain significantly lower than men's and tech-related jobs remain male-dominated. This is also true for blockchain. Multilateral organizations have a key role to play in helping address these issues and turn blockchain's potential for women into reality. Women's blockchain networks, such as Global Women in Blockchain and African Women in Blockchain, which assist women and help them seize the opportunities that this new technology opens are welcome developments that will, no doubt, contribute to making blockchain work for women's economic empowerment.

#### **Section 4: the ways forward**

Building on the analysis offered in the earlier sections of the book, Section 4 provides forward-looking perspectives. Gao (Chapter 15) provides a succinct yet thought-provoking analysis on data regulation in trade agreements. He starts by highlighting the important role played by data in national economy and international trade, which also explains the rush to regulate data both domestically and internationally. This is not an easy exercise as it involves balancing the conflicting interests of three main groups of stakeholders, i.e. the individual, the firm and the state. With the growing popularity of provisions on data regulation in trade agreements, we start to see the emergence of three different approaches, with each of the three main traders in the world – China, the European Union and the United States – each championing a different model. After summarizing the differences between the three, this chapter explores the reasons for them, and Gao argues that they are mainly driven by different commercial interests

and regulatory philosophies. It concludes by providing some practical suggestions on how to move the discussions on data regulation forward as part of ongoing negotiations on digital trade among WTO members.

In Chapter 16, Smeets explains that while perspectives differ as to how governments can create an enabling environment and establish the right conditions at the national, regional and global levels in support of digitalization and with a view of their fuller integration in world trade, the views tend to converge on several specific requirements that need to be fulfilled in order to take full advantage of the opportunities offered in the new digital trade era. This includes focusing more strongly on specific services sectors, strengthening infrastructure to facilitate digital trade and further reducing transaction costs, all of which are elements conducive to a better linking to GVCs. These findings and the examples presented by the Chairs are supported by analysis conducted by the leading institutions, including the WTO: digital trade can play a significant role in supporting inclusive economic growth and enhancing the development perspectives of developing countries. The findings not only contribute to a fuller understanding of the complex digital trade issues affecting competition, they facilitate a better appreciation of the challenges that remain in designing policies for the future. In order to facilitate digital trade, governments have a significant role to play domestically, regardless of what will or can be agreed multilaterally on regulating digital trade. International trade is increasingly determined by an enabling environment created by countries at the national level, i.e.

domestically. Of critical importance is the need to put the right infrastructure in place and to facilitate IT and digital trade, thus allowing a better connection to markets and linking to the GVC. This requires adequate domestic regulatory systems as well as harmonization and coordination of such policies at the international level.

The analysis presented in the book leads to some main conclusions. While the various chapters in this volume discuss a wide variety of issues and focus on different country and regional examples, some common themes emerged. First, many of the authors share considerable optimism about the impact of digital technologies, such as the internet, blockchain, artificial intelligence and other uses of ICT services. The further adoption of digital technologies is expected to increase developing countries' trade, in part by facilitating connections to GVCs. E-commerce transactions have grown rapidly (examples are provided of China, Kenya and Mauritius, as well as regional data on Africa), and the reliability and variety of goods and services have increased markedly.

Absent any government intervention, the impact of digital technology on vulnerable and marginalized groups is less clear. On the one hand, improved access to information and lower-cost communications through the internet can help level the playing field for small producers and assist new entrants to the labour force in finding jobs. And blockchain technology holds considerable promise for enabling women to increase their participation in financial and business transactions. On the other hand, the increasing importance

of digital technologies is raising the returns to sophisticated skills that individuals from higher-income backgrounds (and men) are more likely to possess.

The chapters show a broad consensus on the critical role that policy plays in supporting the adoption of digital technologies and ensuring that vulnerable groups are not left behind. High levels of access, high-quality infrastructure that supports the internet and mobile telephony, and solid transport and postal services are essential for e-commerce. Realizing the full potential of digital technologies will also require governments to address the digital divide (in infrastructure and skills) within their own country, between men and women, urban and rural areas, rich and poor. A strong legal and regulatory framework is critical for the efficient adoption of digital technologies and to improve their contribution to inclusive growth. Some essential provisions are directly concerned

with digital technologies, for example, the regulation of data flows, protection of privacy on the web, the control of cybercrime and legal recognition of digital signatures. Others concern both the internet and the analogue economies, including IP rights, consumer protection, the financial system and business support services.

Finally, international cooperation is essential for realizing the full potential of digital technologies. Differences in legal and regulatory provisions across countries create uncertainty over the validity of transactions, which constrains investment and business operations in the sector. The need for international rules to regulate data flows has led governments to introduce specific provisions in RTAs, with the consequent risk of a fragmented regulatory environment. The internet has brought us closer together, for both good and ill. International cooperation is essential to reap the maximum benefits while limiting the costs.



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**The digital  
trade era –  
challenges and  
opportunities  
for developing  
countries**



Chapter 1

# The impact of digital technologies on developing countries' trade

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## Abstract

Using the World Trade Organization (WTO) Global Trade Model (GTM), a recursive, dynamic computable general equilibrium model, we examine the potential future impact of technological innovations, in the form of robotization and use of artificial intelligence (AI), servicification of the production process, and falling trade costs due to the rise of online markets and platforms on the trade of developing countries. The simulations show that technological change will boost trade growth, as a result of both falling trade costs and the more intensive use of information and communications technology (ICT) services. On average, between now and 2030 global trade growth would be 2 percentage points per annum higher as a result of digital technologies. Further, developing countries' trade growth would be 2.5 percentage points per annum higher and the increase in their share of global trade will be more pronounced the faster they are able to catch up technologically. Another finding from the simulations is that services exports will become a bigger part of global trade, making up more than a quarter of total trade by 2030, and technological changes tend to increase the share of services imports in manufacturing gross output. Finally, these technological developments do not appear to portend a reshoring or localization of production, suggesting that future technological change can go in hand with continuing globalization.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

In the last 30 years, technological advancements in information and communications technology (ICT), by supporting the development of digital markets and platforms, have significantly impacted the way in which goods, services and information are bought, sold and exchanged. More cross-border trade is now digital in nature – a trend that is likely to continue in the future.

Qualitative analysis can be useful to identify the ways in which these new technologies and digitalization can affect international trade. In this chapter, we complement this qualitative analysis with quantitative projections about changes in the size and patterns of international trade using the WTO Global Trade Model (GTM), a recursive dynamic computable general equilibrium (CGE) model with multiple sectors and production factors, intermediate linkages, non-homothetic preferences (consumer preferences in which expenditures shares for goods and services are not constant but vary with income), and investment linkages between countries (see Aguiar et al., 2019). This quantitative exercise serves three important goals. First, it disciplines the qualitative predictions, as it forces analysts to translate their storylines into quantitative “shocks” or changes in a micro-founded economic model. Second, the use of a general equilibrium model implies that the indirect effects of economic changes are all taken into account. And third,

**“More cross-border trade is now digital in nature – a trend that is likely to continue in the future.”**

the fact that the model is computable makes it possible to go beyond qualitative predictions and provide quantitative projections on the magnitude of the effects of the new technologies on international trade.

The GTM is used to explore the impact of three technological trends on the magnitude and patterns of international trade. The first trend is robotization and greater use of artificial intelligence (AI). AI can be defined as the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with humans, such as the ability to reason, generalize or learn from past experience. Important branches of AI, such as machine learning, rely on computing power to sift through big data to recognize patterns and make predictions without being explicitly programmed to do so. The second trend is the more intensive use of ICT services by other sectors in the economy, which we term as “servicification”.<sup>1</sup> The third trend

we examine is the reduction in trade costs because of new digital technologies. Digital technologies are expected to reduce trade costs by improving customs procedures, increasing the efficiency of logistics and reducing the costs of

communication and contract enforcement (for example, through the use of blockchain). Further, various studies have shown that trade costs for online trade, i.e. e-commerce, are lower than for offline trade (see, for example, Lendle et al., 2016).

In order to quantify the impact of new technologies and digitalization, we first construct a baseline scenario for the world economy up to the year 2030 in which the digital trends mentioned above are assumed not to gather speed over time. Instead, the baseline assumes business-as-usual with previous trends simply continuing to 2030. These business-as-usual developments include differential productivity growth across sectors based on past rates to capture the phenomenon of structural change, changing income elasticities as countries grow richer, changes in the trade to income ratio, and variation in the savings rate that depends on changing demographic or life cycle factors (Fouré et al., 2013).

The structure of the chapter is as follows. The next section describes the WTO GTM that is used to project the future impacts of these technologies on global trade, and then it presents the baseline scenario for the world economy when using gross domestic product (GDP), population and labour force projections from various international organizations. The following section discusses the emerging technological trends that are the focus of this chapter and describe how they are quantified and introduced into the GTM. The next section discusses the simulation results and compares the core and convergence scenarios with the baseline. Finally, the last section concludes.

## Methodology

In this section, we first describe the model used and then the construction of the baseline, which could be characterized as a middle-of-the-road scenario for the global economy.

### 1. WTO Global Trade Model

The WTO GTM is calibrated to the Global Trade Analysis Project (GTAP) database, Version 9.2, which has 141 regions and 57 sectors, implying that baseline shares are equal to actual shares. We use an aggregation with 16 sectors, 14 regions and 5 factors of production, as displayed in Table 1. The sectoral aggregation includes the sectors of interest related to digitalization of the economy, such as telecommunications, business services and electronic equipment. The 14 regions, a mix of developing and developed countries from across the world, include the Association of Southeast Asian Nations (ASEAN), Brazil, China, European Union (28),<sup>2</sup> India, Japan, Rest of Latin America, Middle East and North Africa (MENA), Nigeria, Other Asia, Other Developed Countries, Rest of the World, Sub-Saharan Africa (SSA) and the United States. Of the 14 regions included in the simulation, 10 can be classified as developing,<sup>3</sup> which enables us to shed light on how the newly emerging countries are affected by digitalization.

Each region features a representative agent collecting factor income and tax revenues and spending this (under the assumption of utility maximization) on private consumption, government consumption and savings. Savings are collected by a hypothetical global trust, which allocates investment across different regions. In the simulations on the digitalization of the economy, one wants to take into account changes in foreign investment. This requires specifying how foreign investment flows across borders. In the simulations, we assume that investment flows across regions so that the rate-of-return on investment is equalized.

**Table 1: List of regions, sectors and factors of production**

Regions	Sectors	Factors of production
ASEAN	Agriculture	Capital
Brazil	Chemical and petrochemicals	Land
China	Communication	Natural resources
European Union (28)	Electronic equipment	Skilled labour
India	Financial services and insurance	Unskilled labour
Japan	ICT services and consultancy	
Rest of Latin America	Other machinery and motor vehicles	
MENA	Metals	
Nigeria	Mining and extraction	
Other Asia	Other business services	
Other Developed Countries	Other goods	
Rest of the World	Other services	
SSA	Processed food	
United States	Trade	
	Transport	
	Utilities and construction	

On the production side, firms display profit maximizing behaviour, choosing the optimal mix of factor inputs and intermediate inputs. There are five production factors: high-skilled labour, low-skilled labour, capital, sector-specific natural resources and land. Capital accumulation is recursive dynamic. Hence, the current period capital stock is equal to the capital stock in the previous period minus depreciation plus investment. Investment flows to regions with higher rates of return. Capturing many features of the global economy in a detailed way requires us to abstract from one important feature: agents are not forward-looking and different periods are only connected through the adjusting stock of capital.

## 2. The baseline projection

To explore the impact of new technologies and digitalization,

we need to compare that scenario with a baseline projection of the world economy until 2030. As noted in the previous section, this baseline assumes business-as-usual with the pace of technological change based on past trends. The baseline is constructed using projections about the future evolution of GDP per capita, population, labour force and skills up to 2030 that are available from various international sources and organizations. More specifically, GDP per capita growth is based on actual International Monetary Fund (IMF) data until 2014. From 2015 we use the Organisation for Economic Co-operation and Development (OECD) Shared Socioeconomic Pathways projections, SSP2 (Dellink et al., 2017). Data on population and labour force growth come from United Nations population projections, medium variant for 2015 (UN, 2015).

Changes in the number of skilled and unskilled workers are inferred from projections on education levels by the International Institute for Applied Systems Analysis (IIASA) (Samir and Lutz, 2017).<sup>4</sup> We use changes in the share of the tertiary educated as a proxy for changes in the share of skilled workers.

All the other parameters of the GTM are set at standard values provided by the GTAP 9.2 database. However, to allow for changes in the amount of land and natural resources employed, we assume supply elasticities equal to one for these factors. This means that prices for these resources need to rise by 1 per cent to coax out an additional 1 per cent increase in their

supply. We depart from the standard GTAP specification in modelling savings<sup>5</sup> and instead follow the approach in Fouré et al. (2013) to model the gross savings rate as a function of GDP and demographic variables. Targeting the savings rates to the projections from a macroeconomic model makes the evolution of savings more realistic. We allow for differential productivity growth across sectors based on historical data; a detailed description of the estimation used to generate the trends is provided in Bekkers et al. (2018). The results of the baseline projection of the global economy up to 2030 are shown in Table 2. Global GDP growth per capita is projected to average 2.61 per cent per annum

**Table 2: Baseline projection of global economy to 2030, per cent**

	Average yearly growth from 2015 to 2030 of			
	GDP per capita	Population	Low-skilled labour	High-skilled labour
ASEAN	4.33	0.90	0.44	3.43
Brazil	2.69	0.64	0.30	2.26
China	5.98	0.19	-0.70	2.91
European Union (28)	1.51	0.06	-1.04	1.11
India	5.01	1.02	0.92	3.78
Japan	1.28	-0.35	-2.01	0.58
Rest of Latin America	2.60	0.96	0.63	3.01
MENA	2.81	1.39	1.02	3.92
Nigeria	4.04	2.47	2.42	5.59
Other Asia	2.58	1.18	1.09	2.94
Other Developed Countries	1.25	0.90	-0.47	1.26
Rest of the World	3.59	0.05	-0.59	0.42
SSA	3.36	2.52	2.85	5.51
United States	1.61	0.67	-0.34	0.94
<b>Global</b>	<b>2.61</b>	<b>0.93</b>	<b>-0.28</b>	<b>1.66</b>
<b>Developing countries</b>	<b>4.06</b>	<b>1.08</b>	<b>-0.56</b>	<b>5.13</b>

**Source:** GDP projections from OECD Shared Socioeconomic Pathways; Population from UN World Population Projections; high-skilled and low-skilled labour supply from IIASA, assuming that high-skilled are tertiary educated and low-skilled are primary and secondary educated.

**Table 3: Overview of trends modelled in the core and convergence scenarios**

Trends	Core scenario	Convergence scenario
<b>Robotization and digitalization</b>	Differential productivity growth by sector and region as a function of scope for technological change and digital readiness.	Differential productivity growth across sectors as in core scenario but with lagging regions catching up to 25 per cent best performing regions.
<b>Servicification</b>	Doubling of the share of ICT services and consultancy used by other sectors. Constant growth in the share across regions.	Doubling of the share of ICT services and consultancy used by other sectors. Faster growth in the share in lagging regions.
<b>Falling trade costs</b>	Reductions in iceberg trade costs as a result of new technologies and e-commerce. Identical reductions across different regions.	Reductions in iceberg trade costs as a result of new technologies and e-commerce. Trade costs in lagging pairs of countries converge to 25 per cent best performing pairs of countries.

until 2030, with developing countries' per capita GDP growing significantly faster at 4.06 per cent per annum.

## Trends in digital technology

To study the impact of digitalization on global trade, we explore several trends associated with it quantitatively. They include the: (i) reallocation of tasks in production because of robotization and the use of AI; (ii) servicification of the production process from the increasing use of ICT services in the rest of the economy; and (iii) falling trade costs as a result of digitalization in logistics and the rise of e-commerce. For each of these, we develop a core scenario and a convergence scenario, where we assume there is a faster adoption of digital technologies by developing countries than in the core scenario (see Table 3). For each of the trends, we discuss the economic rationale behind its inclusion, the way we obtain the size of the future changes and how it is introduced and analysed in the GTM. A more detailed technical description with estimation results of these trends and relationships is provided in Bekkers et al. (2018).

### 1. Robotization and automation

The robotization or automation of production is increasing around the world. According to the International Federation of Robotics, there are more than 2.4 million industrial robots operating in factories around the world.<sup>6</sup> In the manufacturing sector alone, there are now 99 robot units per 10,000 employees, compared to the average global density of 66 units just a few years ago. The automotive industry is the largest customer industry with 30 per cent of total robots, ahead of electrical/electronics (25 per cent), metal and machinery (10 per cent), plastics and chemical products (5 per cent) and food and beverages (3 per cent). Asia is the world's largest industrial robot market, followed by Europe and the Americas. At the same time, AI is going mainstream as its deployment now extends beyond the technology sector. It can be seen as a form of automation in which the computing ability of machines is substituted for human intelligence and expertise (Aghion et al., 2019). Robotization and AI lift productivity but also make production more capital intensive (Acemoglu and Restrepo, 2018). One possible

implication of robotization and AI for trade is that even some labour-intensive goods currently produced in poor countries will eventually be reshored to capital-abundant countries as robots and AI make production there more cost-efficient.

Taking into account these ideas, robotization is introduced into the GTM in two ways. First, we exogenously increase the share of capital income until 2030 based on the historical trend. Second, we increase productivity growth in certain sectors and countries that current research suggests are likely to gain from automation (Bitkom and Fraunhofer, 2014; Boston Consultancy Group, 2015; Friedrich et al., 2011; McKinsey Global Institute, 2015). The leading sectors include financial services and insurance and the automotive sector, while the countries in the technology frontier include the European Union (28), Japan and the United States.

## 2. Servicification

One way in which digitalization is likely to affect the sectoral structure of production is through servicification, with the use of ICT services by other sectors of the economy growing over time. To project this trend into the GTM, we calculated the change in the share of ICT services – more specifically the share of “computer programming, consultancy and related activities” and “information service activities” – in the World Input-Output Database (WIOD) from 2000 to 2016 (Timmer et al., 2015). This share turns out to have doubled during the period. Thus, in the core scenario, we assume

that the share of ICT services used by other sectors will grow at a constant rate of 3.8 per cent in all regions, which means that the share doubles in 15 years. In the convergence scenario, the share grows more rapidly in countries that start out with a lower share of ICT services.

## 3. Reduction in trade costs from digitalization and e-commerce

New technologies are expected to lead to a reduction of trade costs by improving efficiency in such areas as trade finance, logistics, and custom procedures and risk management (McDaniel and Norberg, 2019). For

instance, blockchain could reduce the expense and time required to facilitate trade finance transactions that depend on third-party lending or insurance, as well as improve management of supply chains by

providing real-time information on the origin and movement of goods. Blockchain may also be used to improve detection of illicit trade flows and deter illegitimate efforts to circumvent trade rules.

To calculate how much these new technologies are going to reduce trade costs, we employ a structural gravity structure (Head and Ries, 2001) and estimate how much logistics and other customs-related variables (taken from the World Bank’s Doing Business database) affect trade. In the convergence scenario, we assume that countries with poor performance in terms of the different measures of logistics and customs converge to the level of the country that performs at a level equal to 75 per cent of the level achieved by the top performer.

“Technological change will boost trade growth.”

In particular, we assume that laggard countries close half of the gap with the 75 per cent best performing country. In the core scenario, we assume identical trade cost reductions across regions and sectors, subject to the constraint that the trade-weighted average reduction in trade costs is identical to that in the convergence scenario.

The other important source of trade cost reduction from digital technologies is the creation and growth of online markets as more and more consumers and firms turn to these sites and platforms to make their purchases. The United Nations Conference on Trade and Development (UNCTAD) estimates that global e-commerce transactions in 2017 amounted to US\$ 29 trillion, with the number of online shoppers growing to 1.3 billion people.<sup>7</sup> E-commerce transactions between businesses (B2B) accounted for 88 per cent of online transactions with business-to-consumer (B2C) sales accounting for the remainder. Slightly more than a tenth of all B2C sales in 2017 were cross-border e-commerce transactions, which reached a value of US\$ 420 billion. The magnitude of these flows suggests that digital markets are creating trade opportunities for many countries.

By reducing search costs, the internet and e-commerce platforms can facilitate market transactions, including cross-border trade (see e.g. Borenstein and Saloner, 2001; Cairncross, 2001). This is borne out by the empirical literature, which finds that e-commerce reduces distance-related trade costs (Ahn et al., 2011; Clarke, 2008; Freund and Weinhold, 2004; Hortaçsu, 2009; Lendle et al., 2016). E-commerce shrinks the distance

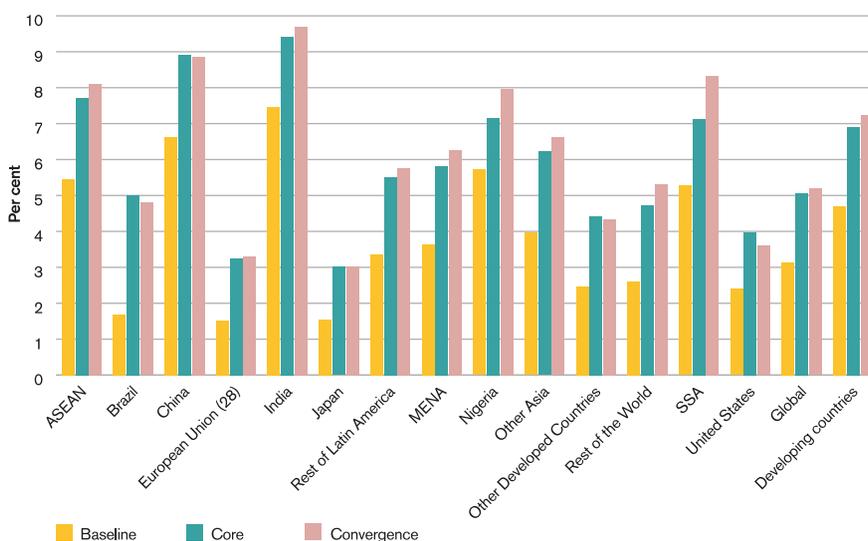
between buyer and seller – by nearly a third according to Lendle et al. (2016) – facilitating more exchange.

To determine the reduction in trade costs from e-commerce, we first project the growth of e-commerce up to 2030. This is derived from regressing online sales in the European Union and in the United States on macroeconomic variables (GDP growth) and using the resulting coefficient estimates and our GDP projections from the OECD SSP2 to calculate their future growth. It is assumed that domestic and cross-border e-commerce grow at the same rate. Second, using the estimates of Lendle et al. (2016) that e-commerce reduces distance by a third, we back out the equivalent reduction in trade costs implied by the growth of e-commerce.

## Simulation results

In this section, we combine the technological trends to generate a core scenario and a convergence scenario. The core scenario projects forward trends in the new technologies discussed earlier – robotization, servicification and digitalization that reduce trade costs. The convergence scenario differs from the core scenario in one significant way: it assumes more rapid catch-up of developing economies to the technological leaders. For example, in the case of robotization, we assume that lagging regions catch up to the top quartile (or 25th percentile). While we do not delve into what actions lagging regions need to take to catch up with the technological leaders, there is no shortage of proposals or ideas.<sup>8</sup> The core and convergence scenarios are summarized in Table 3.

**Figure 1: Trade growth in the baseline and in the core and convergence scenarios to 2030**



Source: GTM simulations.

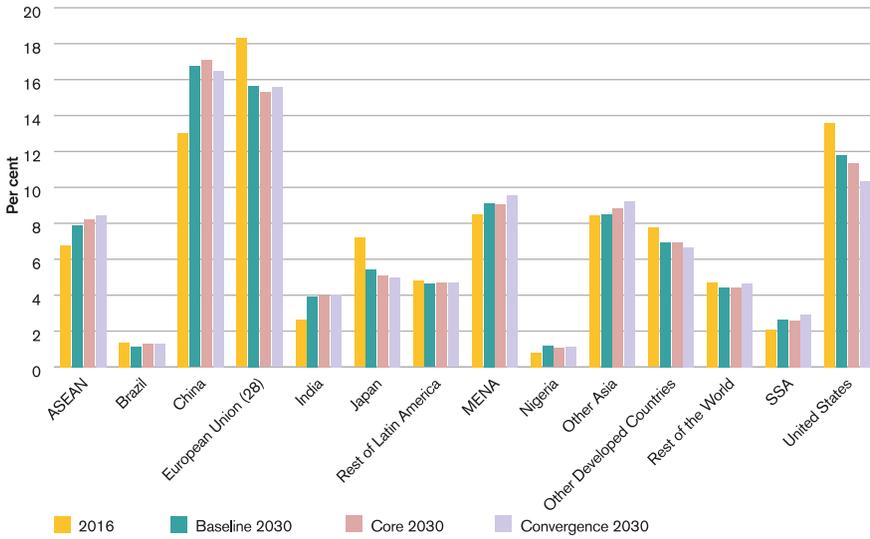
We then examine the effect of digitalization, across the baseline, core and convergence scenarios, by comparing the trajectory of the following variables of interest: (i) annual trade growth; (ii) the share of developing countries in global trade; (iii) changes in the sectoral and geographical distribution of trade and production; (iv) the share of imported services in manufacturing output; and (v) the contribution of services and goods to total trade.

Figure 1 displays the impact of the technological trends on annual trade growth in the baseline, core and convergence scenarios. Trade growth is higher in all regions in the core and convergence scenarios, reminding us how international trade and technological change often go hand in hand. On average, annual trade growth is 3.14 per cent in the baseline, 5.07 per cent in the core

scenario and 5.19 per cent in the convergence scenario. As expected, developing regions exhibit stronger trade growth in the convergence scenario, where we assume digital catch-up by developing countries up to the 25th percentile. Their trade grows 7.23 per cent per annum in the convergence scenario compared to 6.91 per cent in the core scenario and 4.70 per cent in the baseline scenario. This last result implies that countries that are currently not on the technological frontier are not trapped there and could make rapid advances in their trade.

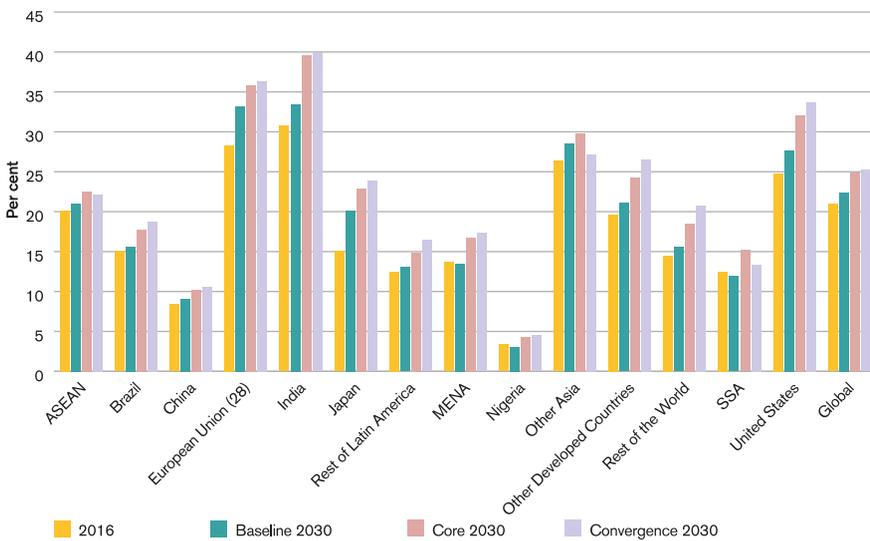
In Figure 2, we show the change in the regional shares in global exports. China continues to increase its share of trade and becomes the biggest exporter in the world. Developed economies like the European Union, Japan and the United States experience an erosion in their market share. Further, the figure

**Figure 2: Country and regional share of global exports in 2016 and 2030 in the baseline and in the core and convergence scenarios**



Source: GTM simulations.

**Figure 3: Sectoral composition of global trade in 2016 and 2030 in the baseline and in the core and convergence scenarios**



Source: GTM simulations.

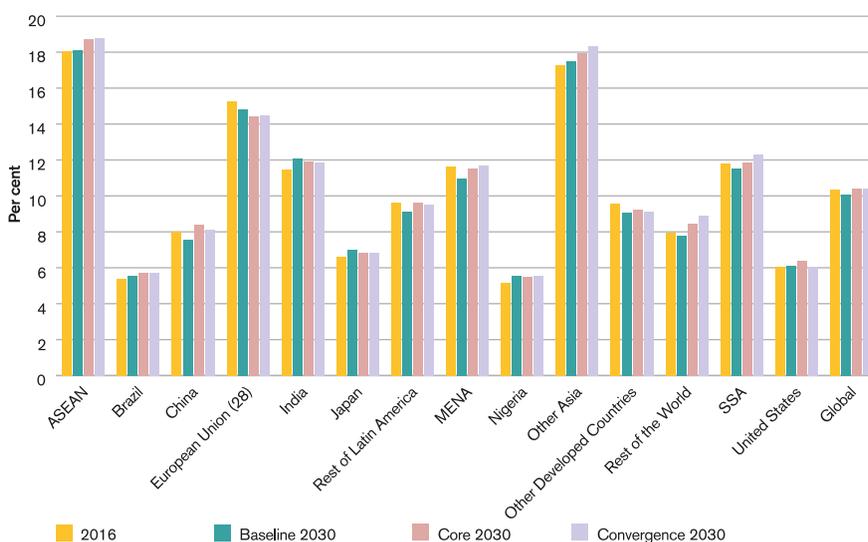
shows that the export share of developing countries rises more in the convergence scenario than in the core scenario, suggesting some positive impact from technological catch-up. Their share of global exports rises to 62.4 per cent by 2030 in the convergence scenario, whereas it rises only to 61.3 per cent in the core scenario without catch-up. More notably, this pattern holds as well for SSA, whose share is projected to increase to 2.9 per cent in the convergence scenario compared to 2.6 per cent in the core scenario.

Figure 3 presents the change in the sectoral composition of global trade. The share of services in global trade rises for most regions in the baseline scenario, and more so in both the core and convergence scenarios. This is because trade costs fall more for the services sectors and servicification increases the use of services in the

economy and thus also in trade. Globally, the share of services trade in total trade rises to 24.9 per cent in the core scenario and to 25.2 per cent in the convergence scenario, compared to 22.4 per cent in the baseline scenario.

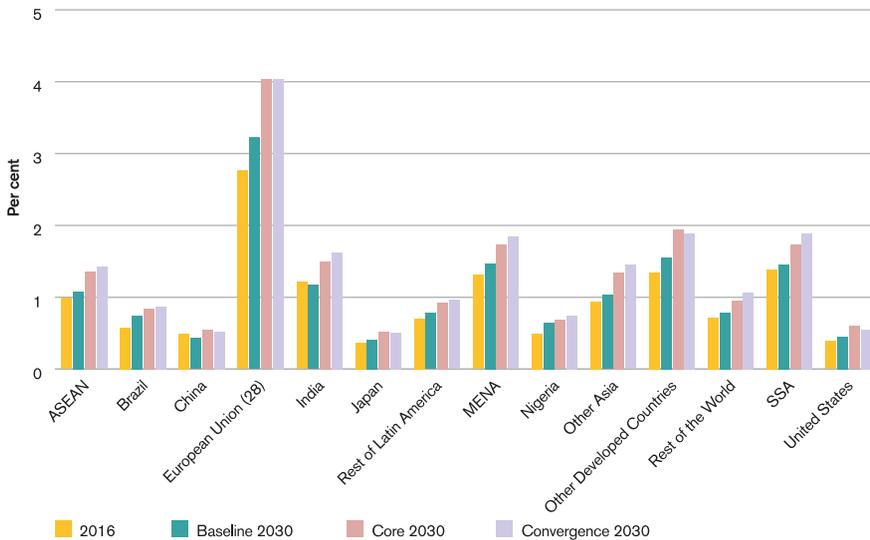
Figure 4 exhibits the impact of these technological trends on the organization of value chains. For most regions, the share of imported intermediates in gross output rises in both the core and convergence scenarios. This is because trade costs are falling, thus making it more attractive to employ imported intermediates in production. Further, Figure 5 displays the share of imported services in manufacturing (gross) output. The figure shows that technological developments have even stronger effects on the use of services imports in manufacturing, which results from the combination of falling trade costs and servicification

**Figure 4: Impact of technological trends on the organization of value chains in 2016 and 2030 in the baseline and in the core and convergence scenarios: the share of intermediate imports in gross output**



Source: GTM simulations.

**Figure 5: Impact of technological trends on the organization of value chains in 2016 and 2030 in the baseline and in the core and convergence scenarios: the share of services intermediate imports in manufacturing gross output**



Source: GTM simulations.

leading to more imports of ICT services. Some have argued that the growth of automation and other labour-saving technologies such as 3D printing may encourage multinationals to move towards localized supply chains and reduce production abroad (Gebler et al., 2014). However, this conjecture is not supported by our simulation results, as it does not appear that robotization or the rising share of capital in income in developed economies would lead to the reshoring of manufacturing activity and thus reduced imports of foreign intermediates.

In these figures, we find a substantial gap between the baseline and core scenario outcomes but not as big a difference between the core and convergence results. For instance, developing countries' trade grows at least two percentage points more per annum in the core scenario than

in the baseline scenario (6.91 per cent annually compared to 4.70 per cent annually), but only 0.3 percentage points more in the convergence scenario compared to the core scenario (7.23 per cent annually compared to 6.91 per cent annually). One possible interpretation that can be put on this conclusion is that the global spread of digital technologies, even in the absence of significant technological catch-up by poor countries, is sufficient to cause a sizeable uptick in developing countries' participation in international trade. But even if this is the answer one draws, this does not mean that greater investments in ICT infrastructure and creating a policy environment more conducive to the digital economy are not priorities for developing countries. There are other valuable policy goals beyond trade – such as improving access to education and increasing innovation

and economic growth – that these policies will advance. The difference between the convergence and core outcomes – which is positive – is only one measure of the value of getting policies right on the digital economy.

## Conclusion

In this chapter we examined the expected impact of new digital technologies on the international trade of developing countries until 2030. We employed a recursive dynamic CGE model to generate a baseline trajectory of the world economy based on GDP, population, labour force and skill projections from different international agencies. We then introduced the three trends associated with the development of digital technologies and that are likely to shape the future – robotization and adoption of AI, the servicification of the production process and the fall in trade costs due to the rise of e-commerce – into a core scenario. We also considered a variant, the convergence scenario, in which technologically lagging countries and regions are able to catch up to the technological level of the top quartile.

The simulation results we obtain lead us to the following observations.

First, technological change will boost trade growth. On average, between now and 2030 annual trade growth would be 2 percentage points per annum higher – 5.19 per cent per annum in the convergence scenario instead of 3.14 per cent per annum in the baseline – as a result of digital technologies. Over the same period, developing countries' trade would

grow by 2.5 percentage points per annum more as a result of technology – 7.33 per cent per year in the convergence scenario compared to 4.7 per cent yearly in the baseline scenario. Developing countries' share of global trade increases in both the core and convergence scenarios but rises more in the latter scenario, with technological catch-up providing a significant tailwind.

Second, the share of services in global trade rises in both the core and convergence scenarios because trade costs fall more for the services sectors and servicification increases the use of services in the economy. By 2030, services would make up 25.2 per cent of total trade in the convergence scenario compared to 22.4 per cent in the baseline.

Finally, contrary to some conjectures, the rise of robotization and AI, which makes production more capital intensive, does not appear to portend a reshoring or localization of production from developing countries.

## Endnotes

<sup>1</sup> We distinguish this process, which focuses on the greater use of services as inputs to manufacturing, from “servitization”, which refers to manufacturers offering services as complements to or substitutes for the goods that they produce. See, for example, Lanz and Maurer (2015) and Crozet and Millet (2017).

<sup>2</sup> While this chapter was being finalized, the United Kingdom withdrew from the European Union on 31 January 2020. However, negotiations on the post-Brexit trade arrangement between the United Kingdom and the European Union (27) had not yet started, and thus it was not possible

to include a post-Brexit scenario in the baseline and counterfactual projections.

- <sup>3</sup> The 10 regions are ASEAN, Brazil, China, India, Rest of Latin America, MENA, Nigeria, Other Asia, Rest of the World and SSA.
- <sup>4</sup> IIASA is an international institute that conducts policy-oriented research into problems that are too complex to be solved by a single country or discipline – such as climate change, energy security and sustainable development. See <https://www.iiasa.ac.at/>.
- <sup>5</sup> In the GTAP model, the utility of consumers is assumed to be a Cobb Douglas function of expenditures and savings so that savings is always a constant share of GDP.
- <sup>6</sup> See <https://ifr.org/downloads/press2018/Executive%20Summary%20WR%202019%20Industrial%20Robots.pdf>.
- <sup>7</sup> See <https://unctad.org/en/pages/PressRelease.aspx?OriginalVersionID=505>.
- <sup>8</sup> They include expanding digital capabilities (e.g. broadband), investing in research and development (R&D), improving the legal and regulatory environment, upgrading the education and skills of the population, strengthening intellectual property protection, bolstering privacy and better protecting personal data, facilitating online payments, etc.

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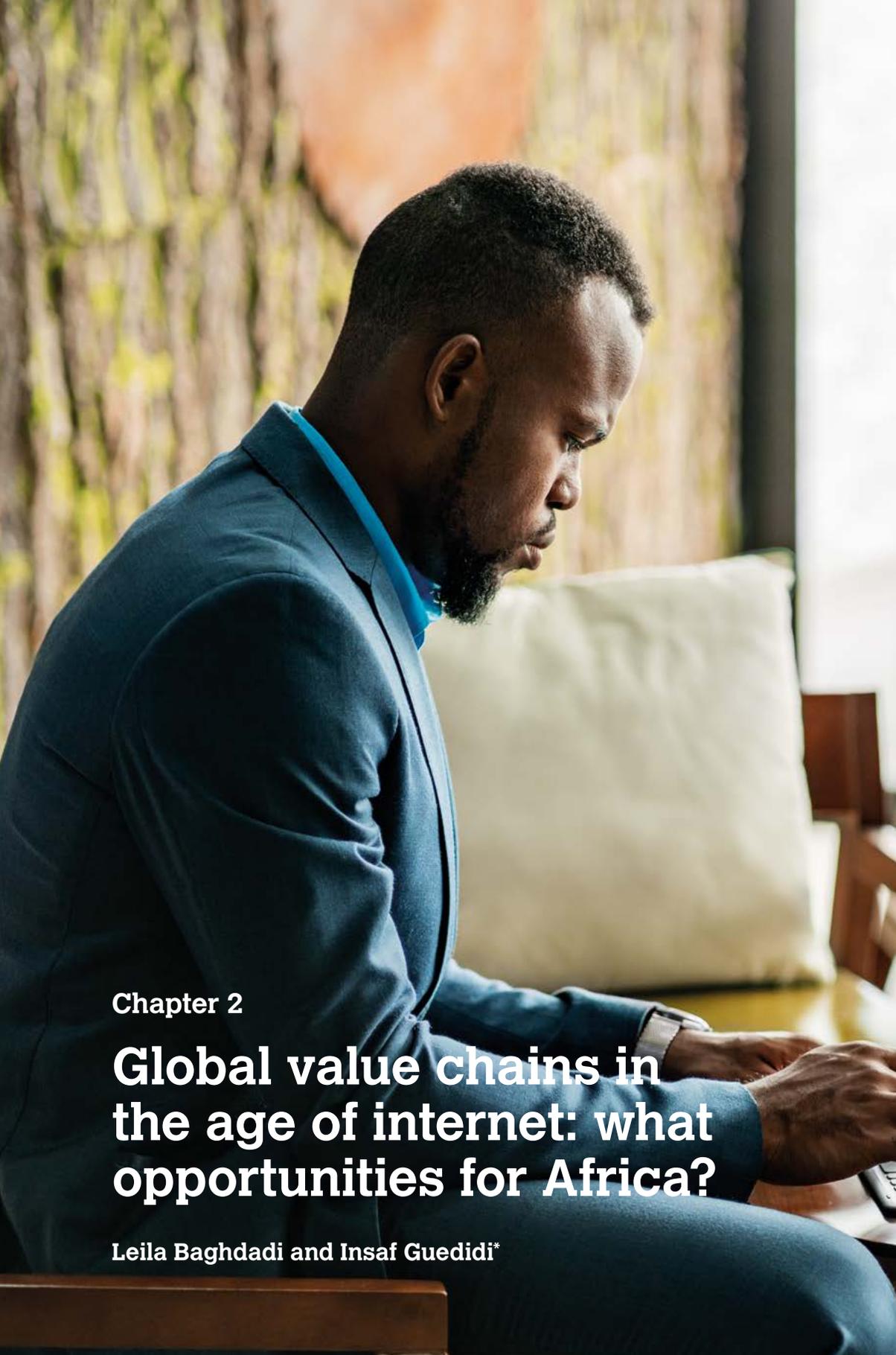
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**Strategic directions  
and policy  
implications for  
developing  
countries**



## Chapter 2

# Global value chains in the age of internet: what opportunities for Africa?

Leila Baghdadi and Insaf Guedidi\*



## Abstract

This chapter analyses the impact of the internet on global value chains (GVCs) in Africa. We investigate the effect of internet adoption on forward participation and backward participation of African countries in GVCs. We conduct the estimations using country-level data from the United Nations Conference on Trade and Development (UNCTAD) Eora GVC database and firm-level data from the World Bank's Enterprise Survey. We test whether internet adoption facilitates the participation of Africa in GVCs at the country level and the firm level. We find that internet use and internet infrastructure are more important for African firms and African countries in terms of forward GVC participation. To conclude, empirical results show that the internet increases GVC participation in Africa. African countries and firms need to improve internet infrastructure in order to make the best of integration into GVCs.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

The amount of cross-border bandwidth used increased by 148 times between 2005 and 2017 (McKinsey Global Institute, 2019). These flows of information helped firms to be closer to consumers and suppliers. Firms with a high rate of digital adoption tend to reduce their physical presence in partner countries. This is due to the newly acquired ability to create virtual global teams through digital platforms (McKinsey Global Institute, 2016). Currently, digitalization and technology evolution notably reduce trade costs as they simplify transactions across borders, thus generating more trade. The internet and electronic systems help eliminate unnecessary processes in customs declaration and customs clearance. For instance, recent estimations show that online submissions of customs documentation decreased time spent at the border by more than 70 per cent for both imports and exports (WTO, 2018).

The next wave of digital technologies, such as digital platforms and logistics technologies (among others), could further decrease trade costs. Digital platforms help buyers and sellers from around the world to meet and exchange goods and services, thus lowering their search costs. Logistics technologies through the use of robotics, artificial intelligence and Internet of Things (IoT) applications could decrease shipping and customs processing time by 16 to 28 per cent. They could potentially boost overall trade by 6 to 11 per cent by 2030 (McKinsey Global Institute, 2019). Thus, a greater use of digital technologies is likely to reduce trade costs, empower trade and increase GVC participation in both developed and developing countries.

Empirical evidence supports this positive impact of digitalization and the internet on trade flows. For instance, Sousa (2018) presents evidence that the IoT is changing the way industries perform through creating new opportunities and transforming production processes. Osnago and Tan (2016) indicate that countries are more likely to exchange goods and services among themselves when both exporters and importers have high internet adoption rates. Moreover, Vemuri and Siddiqi (2009) show that the availability of the internet for business transactions significantly enhances trade flows. Lin (2015) demonstrates that a 10 per cent increase in internet users increases exports by 0.2 to 0.4 per cent. Freund and Weinhold (2004) conclude that bilateral trade flows are enhanced by a high level of internet connectivity. The authors find that a 10 per cent increase in the number of web hosts increases exports by 0.2 percentage points. Likewise, Rodríguez-Crespo and Martínez-Zarzoso (2019) investigate the impact of the internet on bilateral exports of 120 countries for the period 2000–2014. They use the percentage of internet users as an indicator of information and communications technology (ICT) and product complexity to segment countries based on their degree of knowledge. They show that ICT has a positive and significant impact on exports when trade flows are within countries with low product complexity. Liu and Nath (2012) also find that the use of the internet positively and significantly affects trade in emerging markets.

Digitalization could particularly empower trade flows of developing countries through reducing trade costs. The World Trade Organization (WTO) estimates

that the reduction in trade costs resulting from technology diffusion and regulatory policies could increase developing countries' share in global trade up to 57 per cent by 2030 (WTO, 2018). Clarke and Wallsten (2004) find that higher exports to developed countries are associated with higher internet penetration rates in developing countries. In addition, Abeliansky and Hilbert (2017) find that the quality of ICT services (measured by bandwidth speed) has a larger impact on exports of developing countries than does the extent of ICT services (measured by the number of telephone and internet subscriptions), while the reverse is true for developed countries.<sup>1</sup>

The advent of digitalization is particularly important for GVCs in both developed and developing countries. Trade costs tend to cumulate in GVCs. Parts and components are combined in different countries before being turned into final goods.

The time and cost involved in border crossings have a large impact on production costs, since products cross borders several times. Hinson and Adjasi (2009) indicate that the internet plays a major role in reducing the cost to export in Africa. In addition, technology emerges as a key factor in lowering trade costs in international production networks (Amador and Cabral, 2016; WTO, 2018). Recent studies link integrating global production networks with adopting more digital technologies. In this respect, Lanz et al. (2018) argue that manufacturing small and medium enterprises' (SMEs) participation in

GVCs in developing countries is enhanced by improving internet connectivity (measured by whether a firm has a website). The authors also find that the quality of ICT infrastructure, measured by fixed broadband subscriptions, is associated with SMEs' participation in GVCs. Marcolin and Squicciarini (2018) highlight how a highly skilled workforce and ICT adoption shape the way countries integrate and position themselves in GVCs. The availability of skilled workers is critical to the expansion of non-routine jobs that has gone hand in hand with recent technological change. Authors define

non-routine jobs as occupations that give workers a degree of independence. They decide what activity to do and plan their time and tasks. Such workers are able to adopt and use technologies in tasks related to GVCs where time is important (ESCWA, 2017) and costs are high (Muradov, 2017).

**“Digital platforms help buyers and sellers from around the world to meet and exchange goods and services.”**

The adoption of digital technologies plays an important role in shaping cross-border activities of multinational enterprises (MNEs) (Gestrin and Staudt, 2018). Cadestin et al. (2018) indicate that cross-border activities of MNEs lead to more fragmentation of production. A great part of global production networks within GVCs belongs to MNEs. As the world is digitalizing, the costs of coordination and production are falling. Therefore, MNEs tend to execute more business and production activities in different countries. For instance, Lanz et al. (2018) find that small firms participate

more in GVCs in countries with good ICT infrastructure. They indicate that affordable and high-quality access to the internet improves firms' production activities by connecting those firms to GVCs.

Connection to GVCs can take place through forward linkages or backward linkages. Forward GVC participation refers to domestically produced inputs used in third countries' exports, while backward participation refers to the use of foreign inputs in domestic production (De Backer and Miroudot, 2013). Siedschlag and Murphy (2015) indicate that the form of engagement in international activities (forward versus backward) has implications for the level of profitability. They argue that European firms' engagement in GVCs is linked to their productivity and innovation performance. Therefore, it is important to study the impact of the internet on forward GVC participation and backward GVC participation.

Several studies on the relationship between gross trade and the internet have been carried out (Hinson and Adjasi, 2009; Lin, 2015; Osnago and Tan, 2016; etc.), but research on the impact of the internet on trade in the era of GVCs is limited. Moreover, few studies have empirically addressed the question of the impact of digital connectivity on GVCs in African countries. This study aims to fill this gap by examining the effect of the internet on forward and backward linkages, with a focus on Africa.

**“Digitalization could particularly empower trade flows of developing countries through reducing trade costs.”**

We explore both country- and firm-level dimensions. In the remainder of the chapter, we look at both country-level and firm-level results, and then present our conclusion.

## Internet and participation of countries in GVCs

### 1. Model specification and data

We study the impact of internet connectivity on the GVC participation of African countries in terms of backward and forward linkages. The model used includes internet infrastructure, proxied by Broadband in the model, and internet connectivity, proxied by Internet Use, as explanatory variables. Following the empirical model used by Shepherd (2016) and Cheng et al. (2015) in their country-level analyses, we use a measure of GVC participation as the dependent variable in the regression.

At the country level, the estimation is based on the following specification, including country and year fixed effects:

$$GVC_{it} = \alpha + \beta_1 \text{Broadband}_{it} + \beta_2 \text{Internet Use}_{it} + \beta_3 \text{Broadband}_{it} \times \text{Africa}_i + \beta_4 \text{Internet Use}_{it} \times \text{Africa}_i + \beta_5 Z_{it} + v_i + \mu_t + \varepsilon_{it}$$

$GVC_{it}$  denotes backward participation (expressed by foreign value added (FVA)) and forward participation (expressed by indirect value added (DVX)), all in logs.

$Z_{it}$  is a control variable that captures gross domestic product (GDP) per capita. Broadband indicates fixed broadband subscriptions. Internet Use is a measure of the percentage of individuals using the internet.  $Africa_i$  is a dummy variable representing whether or not country  $i$  is in Africa;  $Broadband_{it} \times Africa_i$  and  $Internet\ Use_{it}$  denote the interaction terms between internet connectivity variables and the Africa dummy.  $\nu_i$  and  $\mu_t$  denote country and year fixed effects, respectively.  $\varepsilon_{it}$  is the error term.

The analysis of global production networks at the country level is based on data from the UNCTAD-Eora GVC database. Data from 1990 to 2017 are generated from Eora Multi-Region Input-Output tables (MRIOs), data for 2016–2017 are provisional results, and data for 2018–2019 are estimated based on the International Monetary Fund (IMF) World Economic Outlook.<sup>2</sup>

GVC indicators by country are from the UNCTAD-Eora GVC database. The data covers 175 countries and the years 1990 to 2018. DVX and FVA are measured in US dollars.

Regarding ICT variables, fixed broadband subscriptions (per 100 people) come from the International Telecommunication Union (ITU), including public internet subscriptions (TCP/IP connections) at speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband for both residences and organizations.

Another ICT indicator is the percentage of the population using the internet via computer, mobile phone, personal digital assistant, gaming machines, digital TV, etc., also from the ITU.

The control variable used at the country level is GDP per capita. Data on GDP per capita are taken from the World Development Indicators database.

## 2. Results

This section presents our main results at the country level. We estimate the empirical model with Ordinary Least Squares (OLS). Table 1 presents the results of the estimated equation where the dependent variable is in log. GDP per capita, a proxy for a country's level of economic development, has a positive sign. Thus, the more developed an economy is, the more likely it is to participate in GVCs.

The Broadband and Internet Use variables have a positive and significant impact on participation in GVCs, with slightly higher coefficients related to backward participation (proxied by FVA exports) than for forward participation. This shows that internet connectivity enhances countries' participation in GVCs. These results are in line with results in Lin (2015), Liu and Nath (2012) and Osnago and Tan (2016). For African countries, however, broadband appears to be important for backward linkages, but not for forward linkages (coefficient is insignificant). A 10 per cent increase in internet use in Africa increases backward GVC participation by 3.74 per cent and forward GVC participation by 10.7 per cent.

**Table 1: GVC participation and internet, country-level analysis with OLS**

Variables	(1) Backward Participation (log FVA)	(2) Backward Participation (log FVA)	(3) Forward Participation (log DVX)	(4) Forward Participation (log DVX)
Broadband	0.0221*** (0.000737)		0.0149*** (0.00135)	
Africa × Broadband	0.0129** (0.00545)		0.0115 (0.00996)	
Internet Use		0.00966*** (0.000317)		0.00749*** (0.000413)
Africa × Internet Use		0.00374*** (0.000943)		0.0107*** (0.00123)
Log GDP per capita	0.811*** (0.0155)	0.899*** (0.0148)	1.025*** (0.0284)	1.109*** (0.0193)
Constant	7.153*** (0.133)	6.107*** (0.119)	5.579*** (0.243)	4.606*** (0.155)
Observations	2,523	3,934	2,523	3,934
R-squared	0.768	0.796	0.535	0.741
Country Fixed Effects (FE)	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: Robust standard errors are in parentheses.

\*  $p < 0.1$

\*\*  $p < 0.05$

\*\*\*  $p < 0.01$

## A firm-level dimension to GVCs in the age of internet

### 1. Model specification and data

We apply a regression with Broadband (as a proxy for internet infrastructure) and Internet Use (as a proxy for internet connectivity) variables to assess the impact of internet connectivity on GVC participation in terms of backward and forward linkages. We specify the empirical model and use data following Lanz et al. (2018) for the firm-level analysis.

At the firm level, the model is specified as follows:

$$\begin{aligned}
 GVC_{ijkt} = & \alpha + \beta_1 \text{Broadband}_{ijt} + \beta_2 \text{Internet} \\
 & \text{Use}_{ijt} + \beta_3 \text{Broadband}_{ijt} \times \text{Africa}_{ij} \\
 & + \beta_4 \text{Internet Use}_{ijt} \times \text{Africa}_{ij} + \beta_5 \\
 & \text{Website}_{ijt} + \beta_6 X_{ijt} + v_i + \mu_k + \theta_t + \varepsilon_{ijt}
 \end{aligned}$$

The dependent variable  $GVC_{ijkt}$  proxies GVC participation in terms of backward linkages (measured by the share of imports in total material inputs) and forward linkages (measured by the share of sales that were known to be

exported by a third party), for firm  $i$  in country  $j$  at year  $t$  of industry  $k$ .

$Africa_{ij}$  is a dummy variable representing whether or not firm  $i$  is in Africa.  $Broadband_{ijt} \times Africa_{ij}$  and  $Internet\ Use_{ijt} \times Africa_{ij}$  denotes the interaction terms between Africa and internet variables.  $Website_{ijt}$  is a dummy variable indicating whether the firm has a website or not.  $X_{ijt}$  represents a set of control variables including the manager's experience (in years) and foreign ownership.  $\nu_i$ ,  $\mu_k$  and  $\theta_t$  are country, industry and year fixed effects, respectively. Finally,  $\varepsilon_{ijt}$  denotes the error term. At the firm level, data on GVC participation are from the World Bank Enterprise Surveys (WBES), which cover the years 2006 to 2018 for 133 countries. While the data cover a wide span of years, countries appear only between one to three times in the data during the period covered, and we do not know how many times a surveyed firm appears in the dataset. Therefore, we run regressions using first the full sample and second including only the latest survey of each country for robustness check purposes. Only manufacturing industries are considered.

ICT variables are the same as explained in the previous section. In addition, we use a dummy variable that indicates whether the establishment has its own website or not. At the firm level, the control variables include the number of years of experience of the company's top manager and the percentage of the firm owned by private foreign individuals, companies or organizations. These data are taken from the WBES.

## 2. Results

We are interested in comparing the impact of internet use and internet

infrastructure on forward GVC participation and backward GVC participation at the firm level. We estimate the empirical model with OLS. Table 2 and Table 3 display the firm-level results.

Table 2 shows the results of the estimated equation. The dependent variable is backward participation proxied by the share of inputs of foreign origin in a firm's total material inputs. Columns 1–3 are estimation results for the whole data sample (all surveys). Columns 4–6 are separate regressions using the last sample for each country and firm (last survey) to do a robustness check.

Our control variables, foreign ownership and manager's experience, have a positive and significant impact on the share of imported inputs.

The Internet Use variable is insignificant. However, Broadband has a positive and significant coefficient. Thus, internet infrastructure proxied by Broadband increases a firm's share of imported inputs. Also, having a website helps firms integrate into GVCs through backward linkages.

Our main variables of interest are the interaction terms between internet connectivity variables and the Africa dummy variable. The interaction term between the Africa dummy and Broadband is insignificant. However, the interaction term between the Africa dummy and Internet Use is positive and significant. This indicates that a higher rate of internet penetration is associated with a higher share of foreign imported inputs in firms' total inputs (backward GVC participation).

Table 3 contains the estimation results of firms' forward linkages. We use the share of indirect exports as the dependent variable to proxy forward linkages. Columns 1–3 are estimations for the whole data sample (all surveys). For robustness check purposes, columns 4–6 are regressions using the last sample for each country and firm (last survey).

The relationship between Internet Use and forward participation in GVCs is insignificant, and Broadband has a negative sign. Firms with websites are associated with a significantly higher share of indirect exports.

The positive coefficients for the interaction terms between internet variables and the Africa dummy show that the effect of Internet Use and internet infrastructure (Broadband) on forward linkages is stronger if the country is an African country. This suggests that actions to improve ICT infrastructure and to adopt more technologies would help improve the region's position in GVCs.

Forward integration and foreign ownership are positively related, as displayed in Table 3. However, the coefficient for Manager Experience is statistically insignificant.

**Table 2: Backward GVC participation and internet, firm-level analysis with OLS**

Variables	(1) All surveys	(2) All surveys	(3) All surveys	(4) Last survey	(5) Last survey	(6) Last survey
Broadband	0.287*** (0.0927)			0.414*** (0.0277)		
Africa × Broadband	-1.024 (1.125)			2.918*** (0.203)		
Internet Use		0.0160 (0.0374)			0.154*** (0.0107)	
Africa × Internet Use		0.351*** (0.0969)			0.274*** (0.0203)	
Website			9.223*** (0.302)			7.423*** (0.420)
Foreign Ownership	0.206*** (0.00597)	0.212*** (0.00597)	0.193*** (0.00595)	0.299*** (0.00890)	0.298*** (0.00905)	0.287*** (0.00897)
Manager Experience	0.144*** (0.0126)	0.140*** (0.0126)	0.129*** (0.0124)	0.263*** (0.0184)	0.251*** (0.0186)	0.280*** (0.0182)
Constant	10.29*** (2.854)	8.166* (4.839)	108.8*** (9.474)	-5.817*** (0.365)	-6.307*** (0.371)	-0.876** (0.383)
Observations	54,519	54,965	55,690	26,583	26,202	26,950
R-squared	0.258	0.257	0.269	0.114	0.112	0.109
Country FE	Yes	Yes	Yes	No	No	No
Year FE	Yes	Yes	Yes	No	No	No
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are in parentheses.

\* p < 0.1

\*\* p < 0.05

\*\*\* p < 0.01

**Table 3: Forward GVC participation and internet, firm-level analysis with OLS**

Variables	(1) All surveys	(2) All surveys	(3) All surveys	(4) Last survey	(5) Last survey	(6) Last survey
Broadband	-0.0832* (0.0428)			0.0553*** (0.0130)		
Africa × Broadband	1.629*** (0.466)			-0.0709 (0.0825)		
Africa × Internet Use		0.368*** (0.0480)			0.0142* (0.00833)	
Website			0.842*** (0.142)			1.006*** (0.174)
Foreign Ownership	0.0312*** (0.00336)	0.0323*** (0.00337)	0.0293*** (0.00335)	0.0482*** (0.00521)	0.0499*** (0.00535)	0.0466*** (0.00522)
Manager Experience	-0.00509 (0.00557)	-0.00534 (0.00551)	-0.00616 (0.00551)	-0.00609 (0.00742)	-0.00731 (0.00738)	-0.00423 (0.00724)
Internet Use		0.00128 (0.0182)			0.0203*** (0.00487)	
Constant	40.82*** (1.263)	30.82*** (2.152)	-0.186 (21,713)	0.124 (0.148)	0.0426 (0.146)	-0.879*** (0.262)
Observations	61,420	61,867	62,565	31,997	31,615	32,348
R-squared	0.050	0.052	0.050	0.017	0.019	0.017
Country Fixed Effects (FE)	Yes	Yes	Yes	No	No	No
Year FE	Yes	Yes	Yes	No	No	No
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are in parentheses.

\*  $p < 0.1$

\*\*  $p < 0.05$

\*\*\*  $p < 0.01$

Africa appears to have better performance in connecting to GVCs through forward linkages than through backward linkages (see Table 2). This is in line with the fact that African firms are connected to GVCs largely through providing inputs to firms in other regions for further processing (Foster-McGregor et al., 2015). For example, North Africa integration in global production networks is due to forward participation (Del Prete et al., 2017).

## Conclusion

Technology diffusion among African countries reduces the time required to

import and reduces trade costs, a critical issue for participation in GVCs where goods cross borders several times. Access to the internet also can save time and money by facilitating coordination and monitoring across firms. Therefore, African countries are able to seize more opportunities from digitalization.

This study shows that internet use and internet infrastructure are important for countries engaging in international production networks. From a trade perspective, ICT plays a key role in countries as well as in firms. We analyse the effect of

internet adoption on forward participation and backward participation in GVCs. Globally, internet variables tend to have a larger impact on increasing backward participation than they do for forward participation. However, this is not the case for African countries, for whom internet connectivity has a stronger influence on forward participation in GVCs than on backward participation.

We conclude that African countries and firms in Africa need to improve ICT infrastructure and increase internet penetration to reap more benefits from participating in GVCs at different production levels. Internet use seems to fuel both forward and backward linkages. Increasing internet adoption and improvement of internet infrastructure offer several opportunities to African countries and firms to better participate in GVCs.

## Endnotes

<sup>1</sup> The dataset covers 122 countries over the period 1995–2008.

<sup>2</sup> More details about the UNCTAD-Eora GVC database and its methodological background are described in Casella et al. (2019). Aslam et al. (2017) and De Backer and Miroudot (2013) provide more details on the calculations of value-added indicators for GVCs.

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## Comments



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The emergence of global value chains (GVCs) has major policy implications for economic growth in Africa. As Baldwin (2011) pointed out, two consequences are particularly germane for developing countries. On the one hand, GVCs have created an avenue through which countries can industrialize at a much earlier stage of development as producing firms choose to off-shore fragments of the production value chain to countries where labour is cheaper or where other locational advantages confer a competitive cost advantage on the whole value chain.

However, a second consequence is that, in a world of GVC-dominated trade in which production is allocated to the location with the lowest cost, countries that try to industrialize through the high tariffs and restrictive import-substitution policies prevalent in the pre-1990 period are unlikely to reduce their costs to the point where they can be competitive in global markets. Said differently, GVCs raise the penalties to countries that seek to expand exports by raising tariffs and import-substitution policies that would aspire to build competing production networks; high border barriers will likely result only in high-cost local production and slow growth. In general, a good working presumption is that the more technologically

sophisticated the product is (or production process), the greater the role of the brand name, and the greater is the market share for the lead firm, the more difficult it is for new entrants to gain entry into the final market or supply networks without direct association with the value chain.

A third consequence is the rising importance of connectivity to GVCs, the subject of this chapter. “Global value chains in the age of internet” examines the role of internet connectivity – proxied through the number of internet connections as backbone infrastructure and the percentage of population using the internet – in spurring African trade and in particular trade in value chains. It provides compelling aggregate evidence that the connectivity via the internet is playing an important role in export development of African countries, particularly the participation in GVCs. In analysing broad sectors, the chapter also presents evidence that internet use and infrastructure are particularly important for “high-tech manufacturing” as well as “high-tech services” exports. This comports with Dollar’s findings for world trade that “the higher the technology (knowledge) intensity of a sector, the more significant the increase of complex GVC activities” (2019, p. 1).

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As the chapter notes, internet-based digitization presents African firms with new opportunities to lower trade costs across a range of activities, particularly in speeding delivery times; technology can thus reduce the cumulative costs of delays and administrative procedures as products cross borders. In East Africa, for example, transport costs typically add 30 to 50 per cent to the transit times from Mombasa (Kenya) to Kampala (Uganda) and Kigali (Rwanda). These transport times and transit costs have fallen substantially over the last decade, through a combination of digital technologies in logistics and policy reforms (Kunaka et al, 2018).

The findings that enhanced ICT stimulates the emergence of value chains to a greater extent than trade outside of value chains are persuasive as much from a theoretical perspective as from the chapter's empirics. It stands to reason that firms operating in regional value chains and GVCs would benefit from common technologies controlling standards, parts and software platforms less readily available among exporters and importers in arms-length market transactions. In value chains with more integrated governance structures among the five Gereffi et al. (2005) types<sup>1</sup> – say intra-firm trade and captive hierarchical trade – these benefits are likely to be even larger.

Two readily undertaken extensions of the Baghdadi chapter would be worth pursuing if data are available: (i) extending the analysis back to 2000 would extend the time horizon underpinning the chapter; and (ii) undertaking the analysis worldwide would illuminate the particularities of African trade.

The chapter implicitly prompts questions that could form a larger research agenda about value chains in Africa. De Melo and Twum (2020) have shown that, despite efforts of the regional economic communities (RECs), regional value chains remain only incipient. Regional value chains in the East African Community (EAC), for example, amount to only 1.7 per cent of total gross exports, a sharp contrast with the Association of South East Asian Nations (ASEAN) (17.2 per cent) and the Southern Common Market (MERCOSUR) (4.6 per cent). The Southern African Development Community (SADC) performs only marginally better with 3 per cent included in regional value chains. The authors' definition of GVCs requires that a product crosses two borders. Were they to use a one-border criterion, the numbers in Africa's regions would no doubt be higher. Even with their stringent definition, Sub-Saharan Africa increased its participation in GVCs comparing 2015 with 1990 from some 34 per cent of trade to nearly 40 per cent.

In contrast to East Asia, African trade in GVCs was discernibly more centred on forward GVC integration, that is, its exports were disproportionately used by importing countries to produce for export. For example, Ugandan maize would be used by Kenyan food processors to export to third markets. This pattern differs from East Asia, where much of the GVC integration was backward (that is, the countries' exports included a large share of imported value added). Moreover, in contrast to Asia, *extra-regional* value chains were much more important to Africa than *intra-regional* value chains. These patterns merit further research.

This discussion underscores the need to improve internet usage and infrastructure throughout the region as a building block to effective use of GVCs for growth. In the last decade alone, the installation of a vast network of fibre optic cable has ushered in new levels and speeds of connectivity. Simultaneously, smartphone usage is spreading across the continent, and the green shoots of 5G technology are slowly sprouting up in different parts of Africa. Digitization is revolutionizing logistics and unleashing productivity gains in transport of goods. Services exports – whether tourism, call centres or business services – are inextricably bound up with an increasing reliance on internet-based technologies.

But to fully translate these technologies into increased exports and rising incomes, policies must go beyond internet infrastructure. Trade policy has to keep pace with communication and digitization policy: policymakers have to reduce border barriers, including tariffs, non-tariff barriers and restrictive rules of origin as well as other barriers to competition in transport and communication. To that end, the African Continental Free Trade Area (AfCFTA), the Tripartite Free Trade Agreement and efforts to deepen the regional agreements hold enormous promise.

## Endnotes

<sup>1</sup> GVCs differ in degrees with respect to the extent of market competition within the chain, barriers to access to the final market and the control exerted by the lead firm (over technology, product specifications and branding). Gereffi, Humphey and Sturgeon (2005) distinguish five general types of GVCs, each with a different “governance” and role of firms:

- Market-driven chains in which both buyers and suppliers have multiple sources of transactions, the price is fully market determined and the cost of switching to new partners is low; an example is commodity markets.
- Modular chains in which suppliers produce to the specification of the buyers using generic technology; an example is many apparel chains.
- Relational value chains in which interactions between buyers and sellers are mutually dependent, usually have sustained involvement over time, and are based on family or ethnic ties that tend to cement business relationships; these forms of collaboration are particularly common among companies in Chinese Taipei that operate in production chains.
- Captive chains in which the lead firm controls a highly differentiated product, the key technologies and/or product standards; suppliers have little incentive to move outside the production chain to work with the competitors; leading electronic firms such as Apple have these types of supplier relationships.
- Hierarchical chains in which the buyer-supplier relationship is internal to the firm; auto companies have many suppliers that are internal to the firm; all intrafirm trade falls into this category.

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Chapter 3

**Opportunities  
and challenges of  
e-commerce in Mauritius**

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## Abstract

This study explores the status, challenges and opportunities of e-commerce in Mauritius. The share of the population making online purchases was 14 per cent in 2017, the second-highest level (after Libya) in Africa, largely due to increases in internet use and penetration, coupled with increased credit card usage and the development of secure online payment systems. And Mauritius topped the United Nations Conference on Trade and Development (UNCTAD) B2C E-commerce Index (e-readiness) for Africa. A survey of customers revealed high levels of satisfaction with online shopping, due to wider choices, the ability to save time, accessibility and the relative ease of searching for products online. Major concerns included uneasiness over disclosure of personal information and limited ability to contact vendors. Respondents who have not shopped online cited concerns over navigating online, payment security and high costs. Online sellers expressed considerable optimism over future market growth, but also were concerned over a local bias towards international websites, technical limitations of internet service and the small market size. Interviews with policymakers cited the strong legal and regulatory framework supporting electronic payments, but described a need for stronger regulatory cooperation with other countries on e-commerce, and more work to collect statistics. Technical assistance would be useful in these efforts.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

Mauritius, a small island in the Indian Ocean, is well known for its beaches and is widely regarded as a tourist destination. Its economy is supported by three main pillars, namely the financial sector, the tourism sector and the information and communications sector. Since the early 2000s, the country has taken up the challenge of trying to transform itself into a cyber-island, given that at that time, only 6.8 per cent of the population was using the internet (Hamuth, 2017). However, internet penetration has risen substantially since then, with access to the internet being increasingly “democratized”. According to the latest Internet World Stats data (2019), 63.2 per cent of the population in Mauritius were internet users as of 31 December 2019, an increase in usage of over 899 per cent since 2000. The rise in internet penetration has greatly boosted the e-commerce industry on the island, and e-shopping for goods and services is gradually becoming a way of life. It is widely expected that such a trend will continue to rise in the future.

Other changes have contributed to the rise in e-shopping, particularly increased use of credit cards and the development of secure online payment solutions. For instance, the Juice MCB app by the Mauritius Commercial Bank (MCB) is widely used as a means to effect payment.

The one-time password used by MCB and the State Bank of Mauritius (SBM) e-secure platform for password-protected online transactions ensures greater payment security. Implementation of 3D

Secure by these banks also has helped to minimize fraud risks and maximize security when doing online purchases. The growth of e-commerce also has been supported by greater awareness through the media, increased information and communications technology (ICT) and financial literacy, higher technological penetration, higher interest in online shopping (especially among the young), relatively heavy advertising and the potential for saving time.

While there are numerous success stories of firms that adopted e-commerce, some firms are still lagging behind in establishing an online presence in the country. Mauritius faces several e-commerce challenges. For instance, many Mauritians prefer their conventional way of making purchases (that is, at retail locations) rather than purchasing online. Also, even if there are secure payment options, many Mauritians still do not fully trust online payment. Many e-commerce websites, such as Amazon, charge high fees to ship goods to Mauritius, and this acts as a barrier to e-commerce. Limited internet infrastructure and penetration, including low speeds and limited access to some areas, is another challenge.

Empirical research has highlighted the benefits of e-commerce. Reliance on the internet helps to remove time and space barriers facing businesses and consumers. It can also foster improvements in product variety, thus promoting quality and customer satisfaction, facilitating administrative processes, improving labour and management productivity and

reducing costs (Senarathna and Wickramasuriya, 2011). Rural businesses are adopting e-commerce to add value to their goods and also improve customer relationships (Stayner and McNeill, 2003). Finally, e-commerce can contribute to the reshaping of customer-supplier relationships and the streamlining of business processes (Lekhanya, 2016).

Another strand of the literature has looked at facilitating factors and challenges of e-commerce adoption. Mittal (2013) argues that trust, privacy and security concerns are the three major factors affecting e-commerce adoption. Studies have shown that the primary reason for consumers not adopting online shopping relates to the lack of trust between the consumer and the website (Liu et al., 2005). A positive interaction with e-commerce websites fosters greater trust with online consumers (Jarvenpaa et al., 2000). User satisfaction in relation to safety,

well-designed websites and ease of use are also identified as key elements influencing online purchases (Al-Kasasbeh, Dasgupta and Al-Faouri, 2011). Other factors, like age, income and education, are also determinants of e-commerce adoption (De Muylder, de Oliveira and Alves, 2013). Also, the local infrastructure is seen to be a key challenge and point of vulnerability in online transactions. If the infrastructure or network is not trustworthy, then hackers can access customers' information

(Hartono et al., 2014; Lee Jr. et al., 2016). These challenges are confirmed by studies conducted by Salisbury et al. (2001) and Cheng et al. (2006). Finally, another challenge identified in the literature is the level of readiness (that is, the extent of preparedness), which is classified at three levels, namely, organizational readiness, industry readiness and national readiness (Kurnia et al., 2015).

This chapter explores several issues related to the growth of online purchases in Mauritius. The study assesses the willingness and readiness of Mauritians to undertake online purchases. We discuss the perception of Mauritians towards

e-commerce and analyse the factors that encourage residents to make online purchases. We then analyse the opportunities and constraints faced by traders in online sales transactions. Finally, we discuss the challenges and opportunities from

a policymaker/regulatory perspective, based on a review of existing regulations and discussions and consultations with high-level experts and policymakers engaged in trade policies.

We analyse the opportunities for and challenges to e-commerce from both the customers' and online sellers' perspectives. Regarding online shoppers, the study investigates their perceptions of the benefits/advantages of buying online, their concerns and their satisfaction level

**“Mauritius topped the UNCTAD B2C E-commerce Index (e-readiness) for Africa.”**

on a number of dimensions. We also consider the major reasons for the non-adoption of e-commerce, using data from a sample of non-e-commerce users. The analysis of customers' perceptions is based on a survey of 250 respondents. The assessment of the sellers is based on a number of in-depth interviews of the top management of a sample of 12 local firms engaged in online shopping across different business sectors, including grocery, hotel and entertainment, electronic appliances, and fresh fruit and vegetables, among others.

This remainder of the chapter is organized as follows: the next section considers the current state of e-commerce in Mauritius; the following section briefly discusses the methodology and then analyses our findings; and the final section outlines our conclusions.

## E-commerce in Mauritius

Online sales remain an important feature of e-commerce in Mauritius. International sales outlets such as Amazon, La Redoute, AliExpress, Alibaba and eBay have been quite successful in Mauritius over the last decade. Recently, Mauritian online sales outlets also have seen a rise in sales. These portals offer a wide range of products, from electrical appliances to gardening equipment, from mobile phones to clothing, from furniture to beauty products. Examples include cleverdodo.mu (for trendy clothing and accessories among others), mycart.mu (mobile phones and

tablets), <https://www.facebook.com/flower.mu> (for flowers, wreaths and floral decorations), marideal.mu (offering deals on hotel bookings), priceguru.mu or buynow.mu (electrical and electronic appliances) and theshop.mu (groceries, household items and many other goods). A few high street vendors have an online presence (for example, galaxy.mu and tfp.mu), allowing for the online purchase of furniture and electrical

goods. As regards the fashion industry, popular websites include, among others, tropicalmiss.com.<sup>1</sup>

Two public institutions are heavily involved in the provision of e-services, the Mauritius Revenue Authority (MRA) and the Registrar of

Companies Division. A number of transactions with the MRA can now be done online, and the Companies Division allows for the online incorporation of companies and document filing, as well as payment of various fees. The Government recently launched a shopping portal in 2018, which offers tax-free purchases, in an effort to promote e-commerce.

In 2013, online purchases amounted to only 4 per cent of the total purchases done in Mauritius (UNCTAD 2018), about the same level as in South Africa, while in the United Kingdom, for instance, such purchases amounted to 70 per cent. Recent figures on Mauritius from the UNCTAD B2C E-commerce Index 2018 reveals that Mauritius ranked second in Africa for the proportion of individuals shopping online, after

**“The rise in internet penetration has greatly boosted the e-commerce industry on Mauritius.”**

**Table 1: Top 10 African countries by proportion of individuals shopping online, 2017**

Rank	Country	Online purchase (% age 15+) 2017	Online shoppers (000s)	Online shoppers (000s) rank in Africa	B2C Index rank in Africa	Internet use	Shoppers (% of Internet users)
1	Libya	14.6	629	10	13	20	67%
2	Mauritius	14.4	129	26	1	55	26%
3	Namibia	12.1	184	21	11	31	24%
4	Kenya	9.3	2,614	3	7	39	24%
5	South Africa	7.9	2,929	2	3	59	13%
6	Gabon	6.1	74	29	12	62	10%
7	Tanzania	5.3	1,593	4	16	25	21%
8	Zambia	5.1	459	11	26	24	21%
9	Tunisia	4.7	366	14	4	56	8%
10	Mozambique	4.3	665	9	32	23	19%

Source: UNCTAD B2C E-commerce Index 2018, available at: [https://unctad.org/en/PublicationsLibrary/tt\\_unctad\\_ict4d12\\_en.pdf?user=46](https://unctad.org/en/PublicationsLibrary/tt_unctad_ict4d12_en.pdf?user=46).

Libya (14 per cent) (see Table 1). However, Mauritius topped the UNCTAD B2C E-commerce index (e-readiness) for the African continent (with a World Ranking of 55). This index, in addition to registering the number of online shoppers, also assesses ease of delivery and payment. The index value for Mauritius (66.9, up from 51 in 2016) is 12 points higher

than the value for the country ranked second in Africa. It is also noteworthy that Mauritius scored relatively well in all four areas of assessment, namely, share of individuals using internet, share of individuals with an account, secure internet servers and UPU postal reliability score (see Table 2).

Tables 1 and 2 clearly highlight the significant progress made by Mauritius

**Table 2: Top 10 African countries in the UNCTAD B2C E-commerce Index, 2018**

	Economy	Share of individuals using the Internet (2017 or latest)	Share of individuals with an account (15+, 2017 or latest)	Secure Internet servers (normalized) (2017)	UPU postal reliability score (2017 data)	Index value (2017 data)	Index value change (2016-17 data)	World rank
1	Mauritius	55	90	56	66	66.9	-7.2	55
2	Nigeria	42	40	52	85	54.7	5.5	75
3	South Africa	59	69	83	0	52.9	-1.9	77
4	Tunisia	56	37	51	63	51.7	2.1	79
5	Morocco	62	29	54	59	50.9	NA	81
6	Ghana	39	58	45	53	48.8	7.6	85
7	Kenya	39	82	37	27	46.2	3.7	89
8	Uganda	17	59	31	58	41.5	-3.2	99
9	Botswana	47	51	41	26	41.4	0.1	100
10	Cameroon	23	35	25	78	40.3	3.6	101

Source: UNCTAD B2C E-commerce Index 2018, available at: [https://unctad.org/en/PublicationsLibrary/tt\\_unctad\\_ict4d12\\_en.pdf?user=46](https://unctad.org/en/PublicationsLibrary/tt_unctad_ict4d12_en.pdf?user=46).

in online trading and the use of e-commerce. With the recent introduction of secure payment options, the ongoing integration of fibre-broadband and the continued democratization of the internet, the launching of more online shops resulting in an increased volume of e-commerce is expected in the future.

## Research methodology and analysis

We use both qualitative and quantitative techniques to assess the various opportunities and challenges facing the use of e-commerce in Mauritius from three perspectives: customers, online traders and policymakers/regulatory bodies. A survey of customers with experience in online shopping was administered. The questionnaire was designed to investigate e-commerce practices throughout the sales process and also to capture the reasons for non-online purchases. Thus, the questionnaire aims at assessing the willingness and readiness of Mauritians to undertake online purchases, determining the perception of Mauritians towards e-commerce, analysing the factors that stimulate Mauritian customers to make online purchases and identifying the main impediments to completing transactions online. It is noteworthy that most of the statements and scales in the questionnaire were borrowed from previous empirical work (Arendt, 2008; Sawmy et al., 2015). The questionnaire is structured around four key themes:

- Online shopping experience (section A). This section collects information from buyers about the websites they used to make online purchases, including the frequency of purchases,

and it assesses their level of satisfaction with their online purchases.

- Users' perceptions about e-commerce (section B). The questions are mainly 5-point Likert scale statements addressing security and privacy concerns, usefulness and convenience of websites, interaction and communication from online retailers, common frustrations, and consumer purchase intention in relation to online shopping.
- Reasons for not using e-commerce (section C). The questions mainly relate to investigating the reasons why consumers prefer not to complete transactions online.
- Demographic profile of the respondents (section D).

The researchers surveyed a sample of 256 of undergraduates and post-graduate students from publicly funded tertiary education institutions (TEIs). Given the geographic location of these TEIs and the small geographical area of Mauritius, the sample respondents are representative of the population who are adopters and non-adopters of e-commerce. The snowball sampling technique was used to reach out to a specific target group such that the sample also covers the self-employed and the general public. Care was taken to make the sample as representative as possible, taking into account that most of the online purchases were done by individuals with relatively high educational level (and thus relatively high income as well).

A pilot test was conducted among 10 respondents. A few questions and terminologies were amended to improve clarity. The survey was

mostly self-administered with clear instructions given on the questionnaire. The dataset consists of 236 respondents, of which 56 were non-users of online services. The data analysis was conducted using the Statistical Package for Social Science (SPSS) V20.0 software.

A qualitative assessment was conducted to analyse the constraints and opportunities faced by online merchants. A series of well-structured, in-depth interviews was administered to 15 of them. We also reviewed selected regulations and laws, and undertook thorough

discussions with policymakers to assess the policy and regulatory framework for e-commerce.

### **Analysis 1: Analysis of survey (customers' perspective)**

#### **Descriptive analysis**

The respondents' demographic profile is summarized in Table 3. There is no marked difference between the online shoppers and non-online shoppers. The Mauritian women are the ones who embrace this mode of purchase (61.5 per cent) as compared to 38.5 per cent for men. Respondents from the age group 26 to 35 are more frequent online buyers; this makes sense as

**Table 3: Demographic profile: online v. non-online shoppers**

	Online shoppers		Non-online shoppers	
	F	%	F	%
<b>Gender</b>				
Male	69	38.5	16	31
Female	110	61.5	36	69
<b>Age:</b>				
16–25	36	20.1	9	17
26–35	76	42.5	20	33
36–50	61	34	7	13
>50	6	3.4	17	32
<b>Income (MUR)</b>				
None	14	8	9	17
<10,000	3	2	4	7.5
10,000–20,000	33	19	9	17
20,001–40,000	77	43	17	32
40,001–60,000	33	19	9	17
>60,000	17	10	5	9
<b>Occupation</b>				
Student	15	8.5	9	17
Self-employed	8	4.5	10	19
Professional	148	84	29	55
"Housewife"	-	-	3	6
Unemployed	5	7	2	3

**Source:** Survey results tabulated by the authors.

they are more likely to have experience with the world of work than do younger respondents and they are more likely to be tech savvy compared to older respondents. Income level is a direct determinant of the respondents' purchasing power: 72 per cent of the online shoppers earn an income above MUR 20,000 (EUR 500), and most are professionals.

It is worth noting that the non-online shoppers share the same demographic characteristics as the online shoppers. As such, measures geared towards increasing their trust should help foster greater e-commerce usage.

### Online shoppers

On average, respondents purchased an item online about once a month, with clothing, jewellery and technological products the most commonly purchased items (see Table 4). The most commonly used websites by Mauritians for their purchases are eBay, AliExpress, Amazon and Alibaba (more than

75 per cent of respondents use these websites). The most frequent modes of payment are a credit or debit card and PayPal (more than 80 per cent of online shoppers). Additionally, nearly 70 per cent of respondents were satisfied with their online purchase experience (mean score of 3.74). Online shoppers typically use a laptop (53 per cent) or a smartphone (32 per cent) for their purchases, and mostly rely on a home Wi-Fi connection (88 per cent).

### Underlying motivations for online purchases

The main reasons for this mode of purchase are wider choices, saving time, accessibility and the relative ease of searching for products online. This is further reinforced by perceptions about the online experience, where the statement "I feel shopping websites are very responsive to customers" and "E-commerce has changed the way I used to buy products and services" were highly rated using the 5-point Likert scale. The majority of

**Table 4: Products purchased\***

Which products do you buy the most	Responses		% of cases
	N	%	
Clothes	122	34.2	81.3
Technology products	68	19.0	45.3
Jewellery	65	18.2	43.3
Hotels/travel	35	9.8	23.3
Travel accessories	22	6.2	14.7
Automotive accessories	21	5.9	14.0
Others	13	3.6	8.7
Shapewear**	6	1.7	4.0
Food and beverage products	5	1.4	3.3
Total	357	100.0	

**Source:** Survey results tabulated by the authors.

\* Dichotomy group tabulated at value 1.

\*\* Undergarments worn to create a smooth silhouette.

**Table 5: Most common frustration of e-commerce**

Most common frustration of e-commerce	N	Minimum	Maximum	Mean
Difficulty reaching the organization	174	1.00	5.00	3.4713
Lack of fast chat/instant messaging	175	2.00	5.00	3.3600
Lack of information about the products/services	175	1.00	5.00	3.2343
Problems with account/logging in	174	1.00	5.00	2.8793
Trouble at check-out	176	1.00	5.00	2.8636

**Source:** Survey results tabulated by the authors.

respondents are of the view that shopping websites are flexible and easy to use, and that the information provided on the websites meets their needs. Online shoppers emphasize the importance of a website's attractiveness (mean score of 3.9) and its usability and navigation tools (3.8), among other issues such as prompt response to customer service queries and customer service in general. On the other hand, over half of respondents agreed with the statement "E-commerce does not allow me to inspect goods in advance of purchase".

The fear of sharing sensitive information with third parties without buyers' consent may act as a deterrent to transacting online. Respondents are of the view that websites use security controls to respect the confidentiality of users and have no problem on this front (mean score = 3.56). However, it is noteworthy that the respondents appear to be concerned about the unauthorized use of their personal information for other purposes.

The most common negative issues that Mauritian buyers faced while transacting online were the limited availability of fast chat/instant messaging and their inability to reach the e-shop by phone (see Table 5).

This is particularly of concern where the market covers a wide area, and this issue will have to be addressed.

Furthermore, the survey attempts to measure the extent to which online shopping may increase in popularity in the future. The results reveal that respondents are bound to increase their online shopping and in addition are prepared to assist other first-time buyers and also to encourage friends and relatives to shop online. However, to maintain the online shoppers' readiness to adopt this style of shopping, suppliers must guarantee the quality of the product, timely delivery and, above all, a secure mode of payment. Table 6 captures the mean score for these priority areas that merchants should address; concerns over security top the list, with a mean score of 4.66.

### **Shoppers who do not make purchases online**

The survey instrument was also designed to capture the reasons that shoppers do not purchase items online; out of 236 respondents, 56 did not make any online purchases. Their demographic profile is not too different from that of the online shoppers, except that a smaller share are professionals and their incomes are somewhat lower. Nevertheless, the

**Table 6: Rating of priority concerns according to their level of importance**

Rating of criteria according to their level of importance	N	Minimum	Maximum	Mean
Payment security	178	1.00	5.00	4.6573
Quality	178	1.00	5.00	4.4944
Delivery	177	2.00	5.00	4.4802
Choice	178	2.00	5.00	4.3258
Possibility to get back in touch with the merchant	177	1.00	5.00	4.2712

Source: Survey results tabulated by the authors.

majority of the non-online shoppers are professionals or self-employed (see Table 3). Both occupations represent a non-negligible target for e-commerce (a substantial share earn a monthly income above MUR 20,000), and thus their security and privacy concerns should be addressed. It is worth noting that 69 per cent of respondents are female, and 32 per cent are over 50 years of age.

Of the 56 respondents who do not shop online, it is reassuring to note that 62 per cent may consider adopting this

mode of purchase. Inhibiting factors include uneasiness in navigating online, concern over payment security and a perception of high costs. Table 7 captures the most important reasons for not buying online, using 13 item statements. It includes, among others, not being acquainted with internet shopping, confusing procedures and pessimism about whether privacy is respected. The rotated solution using the Principle Component Analysis (PCA) data reduction techniques (refer to Table 8) groups the item statements into three dimensions,

**Table 7: Reasons for not buying online**

Reason for not conducting an online purchase	N	Minimum	Maximum	Mean
Unable to touch and analyse the items	55	2.00	5.00	4.2364
Apprehension about payment security	55	2.00	5.00	4.2000
Doubts the quality of the item	55	2.00	5.00	4.1636
No personal interaction with shop employees	56	1.00	5.00	3.9821
Shipping costs can be expensive	56	2.00	5.00	3.9643
Pessimistic about whether privacy is respected	56	2.00	5.00	3.9286
Delivery fees are high	56	2.00	5.00	3.6964
Not acquainted with internet shopping	56	1.00	5.00	3.3750
Confusing procedures	56	1.00	5.00	3.2321
The systems and the logistics are too complicated	56	1.00	5.00	3.1964
Less variety of items are available online	56	1.00	5.00	3.1964
Too complicated compared to traditional shopping	56	1.00	5.00	3.1607
I do not understand the online process	56	1.00	5.00	2.6429

Source: Survey results tabulated by the authors.

**Table 8: Rotated component matrix\***

Reason for not conducting an online purchase	Component		
	Payment	Navigation	Uneasy with Internet
I do not understand the online process			0.837
Not acquainted with internet shopping			0.736
The systems and the logistics are too complicated			0.696
Too complicated compared to traditional shopping		0.686	
Confusing procedures		0.645	
No personal interaction with shop employees		0.714	
Less variety of items available online		0.780	
Apprehension about payment security	0.690		
Shipping costs can be expensive	0.883		
Delivery fees are high	0.850		

**Source:** Survey results tabulated by the authors.

*Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.*

\* Rotation converged in eight iterations.

namely, navigation, uneasiness with the internet and cost factor. The final list consists of 10 item statements because three items – pessimism about privacy, inability to touch and analyse the item and doubts about quality – did not load adequately into the three dimensions.

The main three areas of concern for non-adopters of e-commerce are not related to product and services quality *per se*, which indicate the usefulness of a shift of focus towards educating potential users on the internet and the navigation tools of the online platform. This may have some policy implications in terms of digital literacy and the regulation of this mode of commerce.

### **Analysis 2: Interviews with Mauritian service providers (sellers' perspective)**

To gauge the opinions of sellers on the opportunities and challenges of making online transactions, we

conducted in-depth interviews with managers of 15 online merchants operating in different sectors, ranging from hotels/hospitality, fresh flowers and vegetables, groceries, furniture and other appliances. A discussion of their responses with respect to the perceived opportunities and constraints is synthesized below.

In terms of opportunities, the increased democratization of the internet as a national strategy is expected to further accelerate e-commerce. Moreover, government and business operators have medium- to long-term plans to further increase internet access and speed, while government is also pushing for price reduction by allowing increased competition and through policy measures. Moreover, as familiarity with information technology increases, the number of people purchasing online will further increase. Also, the increasing use of credit and debit cards as well as internet banking

on the island, fostered by aggressive marketing and awareness campaigns from banks, remains a key element in helping the development of e-commerce. With the introduction of new online payment solutions, customers can make use of their debit cards to make online purchases both in Mauritius and internationally, which was not the case prior to 2016. Security is very important in e-commerce, so investments by banks in new technologies to ensure greater security for online transactions and the introduction of e-secure platforms for password-protected online transactions can enhance customers' and online merchants' trust in the process. In Mauritius, online shopping is regulated under the Electronic Transactions Act (ETA), which was enacted in 2000. Online merchants are of the view that while this Act needs to be revisited to a certain extent, it still constitutes a relatively sound and encompassing legal framework governing e-commerce, and as such it instils confidence, which is a vital factor. Online traders also believe that e-commerce provides greater marketing opportunities, including through social media, in which a significant proportion of the population participates. Some respondents also argue that e-commerce facilitates reductions in inventory and distribution costs and time by providing just-in-time (JIT) services. In addition, they argue that the aforementioned services lead to better demand forecasts.

Online shoppers and merchants also face several challenges. For instance, online traders feel that Mauritians tend to favour international e-commerce websites (such as AliExpress, Amazon or eBay) over local websites, especially when acquiring luxury

products. Despite the considerable progress that has been made, consumers remain concerned over the use of debit and credit card information (and other personal information) by local websites, especially because e-commerce took off only quite recently. Customers are also reluctant to purchase from local service providers because they deem the local business's refund policies to be either lacking or unclear. A recent study by Shoraye and Gungea (2019) confirms the above bias in favour of the internet giants. Respondents also discussed technical limitations affecting local websites, which is linked to the absence of a standardized software (making navigation harder). They were particularly critical of the relatively low bandwidth of local sites, which makes the shopping experience slower and therefore less attractive. However, merchants argue that they are making a substantial investment to facilitate online purchases and to improve their software and websites. Greater investment in improving connectivity also is required to encourage e-commerce. Investments have been made to upgrade to fibre-broadband to increase speeds to between 10–30 MB. However, this remains a medium- to long-term project. Finally, small market size, with the Mauritian population currently standing at around 1.3 million people, remains a limiting factor for the growth of e-commerce. Some local merchants argue that the small size of the market may act as a deterrent for large foreign operators. In addition, given that Mauritius is relatively far from major online service providers, the resulting hefty customs fees and transport costs (particularly given that island is quite remote) may act as deterrents.

### **Analysis 3: E-commerce challenges and opportunities – A policy and regulatory perspective**

Mauritius is actively participating in the e-commerce discussions at the World Trade Organization (WTO),<sup>2</sup> the objective being to elaborate on a multilateral framework to better regulate the sector. To that end, Mauritius has already adopted a number of laws to facilitate and promote e-commerce. First and foremost, the ETA gives legal security to documents in electronic form and provides legal recognition for the use of electronic records and signatures and their secure counterparts. The main goals of the ETA are as follows:

- Facilitate electronic communications by means of reliable electronic records;
- Facilitate e-commerce and promote the development of the legal and business infrastructure necessary to implement secure electronic commerce;
- Facilitate electronic filing of documents with government agencies and statutory corporations, and promote efficient delivery of government services by means of reliable electronic records;
- Minimize the incidence of forged electronic records, intentional and unintentional alteration of records, and fraud in electronic commerce and other electronic transactions;
- Help to establish uniformity of rules, regulations and standards regarding the authentication and other electronic transactions; and
- Promote public confidence in the integrity and reliability of electronic

records and e-commerce, and foster the development of e-commerce through the use of electronic signatures to provide authenticity and integrity to correspondence in any electronic medium.

In a similar vein, privacy protection and protection against unsolicited commercial electronic messages, which are vital components of e-commerce, are provided through the Data Protection Act of 2017, the Banking Act of 2004 and the National Payment Systems Act of 2018. These regulatory frameworks also provide for online payment solutions to enable cross-border e-commerce. For instance, the Data Protection Act regulates the cross-border transfer of information by electronic means and does not place any restrictions on data localization, save for the requirement to inform the Data Protection Office when data is to be transferred abroad.

Furthermore, paperless trading, another prerequisite for e-commerce, is already a reality. Indeed, all trade administration documents are electronically available, and electronic versions of trade documents are accepted by financial institutions and government. In addition to these regulatory frameworks, Mauritius does not impose any customs duty on electronic transmissions, and the underlying principle of National Treatment is applicable to local and foreign digital products. Finally, prior authorization by service providers from the relevant ministries is not required for the delivery of online services, boosting such trade in the country.

Another element promoting cross-border e-commerce is the implementation by Mauritius of the

WTO Trade Facilitation Agreement (TFA), which aims to reduce the time and costs involved in cross-border trade and also to enhance predictability and transparency. Indeed, traders are more aware of existing regulations and other costs of trade when placing their orders. Other provisions of the TFA, in particular the publication of release time of goods, assist traders in calculating the time their goods would be retained at the border. The single window system and risk management provisions also help to streamline the administrative procedures required to obtain necessary clearance online and to reduce the time for clearance of goods at the border.

The above highlights the readiness of the country to promote e-commerce, but policy challenges still exist. For instance, an online consumer protection law has yet to be enacted.<sup>3</sup> As of now, there is no platform to promote regulatory cooperation on e-commerce between Mauritius and other jurisdictions. Furthermore, an official and functional e-commerce platform *per se* is yet to be established.<sup>4</sup> In this regard, the provision of technical assistance by international institutions, as well as on a bilateral basis, to address these and other challenges may prove crucial for Mauritius in its endeavour to promote e-commerce.

Computation of trade data and statistics on e-commerce remains a challenge. Statistics Mauritius does not compile e-commerce statistics because it lacks a mechanism or legislative framework to do so. Moreover, staff have limited technical know-how for such an exercise. Technical assistance to develop mechanisms for the collection and

management of e-commerce data, building on practices in other countries, and to build staff capacity would be valuable. It is important to measure accurately the magnitude of e-commerce trade to inform development of policies and any further legislative framework needed to properly regulate e-commerce.

Finally, the regulatory framework in Mauritius may be further improved once a multilateral framework has been agreed.<sup>5</sup> Once this is done, regulations in Mauritius could be revisited to incorporate international best practices.

## Conclusion

This study has explored the current status of, and the challenges to and opportunities for, e-commerce in Mauritius. With increased internet penetration, the e-commerce industry has grown rapidly, and e-shopping and e-services are used prominently by the local population. Increased credit card usage and secure online payment solutions have also been crucial elements fostering the development of e-commerce.

An analysis of the opportunities and challenges of e-commerce has been undertaken using a three-pronged approach, including the online buyer/customer, the online merchant and regulatory agencies/policymakers. A survey of buyers indicates that the main reasons for adopting online purchases are wider choices, saving time, accessibility and the ease of searching for products online. The survey also showed consumers' high degree of satisfaction with respect to online experience. The survey indicated that respondents were likely to increase their online shopping in the future, and

that they were prepared to assist other first-time buyers and to encourage friends and relatives to shop online. In short, the survey results indicate considerable potential for online shopping in Mauritius, although a number of challenges remain. Major issues include concerns that websites will share sensitive information with third parties without buyers' consent, the lack of fast chat/instant messaging and the inability to contact the e-shop by phone (a particular concern in markets covering a wide area). A majority of respondents who had never conducted online transactions indicated that they would, or were considering doing so in future. Their main motivations for not making online transactions related to uneasiness over navigating online and payment security issues.

In-depth interviews of managers of 15 online merchants operating in different sectors (including hotels/hospitality, fresh flowers and vegetables, groceries, furniture and other appliances) indicate considerable optimism about the potential for online shopping in Mauritius. Interviewees cited the small size of the market with considerable scope for growth, anticipated increases in internet penetration, the use of ICT and financial literacy, the increasing use of credit and debit cards, the growth of internet banking and the establishment of secure online payment systems, and the establishment of a comprehensive regulatory framework for e-commerce. However, the low speed and bandwidth of internet connections and the lack of infrastructure in some remote areas were seen as major impediments to the growth of e-commerce in Mauritius.

The legal framework for e-commerce, consisting of the ETA, the Data

Protection Act of 2017, the Banking Act of 2004 and the National Payment Systems Act of 2018, has bolstered trust and confidence among both consumers and businesses. However, some aspects of the framework could be strengthened. For instance, an online consumer protection law is yet to be enacted, and there is no platform to promote regulatory cooperation between Mauritius and other jurisdictions on e-commerce. As such, Aid for Trade initiatives to foster e-commerce are yet to be implemented, while an e-commerce platform *per se* is yet to be established. Moreover, the compilation of trade data and statistics on e-commerce remains a challenge, as this data is not captured by the Statistics Mauritius office. Statistics Mauritius will have to develop appropriate methodologies based on best practices to collect and process data on e-commerce, since such data are crucial for the design of sound policies and the promulgation of a more comprehensive regulatory framework. Finally, there is a need to bring together all stakeholders to take stock of the e-commerce situation in Mauritius, identify further actions that may be required and develop a roadmap with clear timelines and designation of responsible implementing agencies.

## Endnotes

<sup>1</sup> Other popular shopping sites are moodesign.mu and mycart.mu. Other sites operated by supermarkets allow online purchase of groceries, such as theshop.mu and winner.mu. Other websites, such as lacase.mu, are focused on home décor, while tantebazar.com sells fresh and good-quality vegetables, and thewinestore.mu deals in spirits and wines.

<sup>2</sup> Negotiations on the Trade in Services Agreement (TiSA) has been suspended following the 2016 presidential elections in the United States, with e-commerce being part of the negotiations.

<sup>3</sup> Although Mauritius has enacted laws with regards to consumer protection, competition and data protection, they do not explicitly address consumer protection and other issues linked to e-commerce. This remains one area where technical assistance is required.

<sup>4</sup> The International Trade Division of the parent ministry has recently undertaken a feasibility study with respect to the setting up an e-commerce platform to trade with the SADC region. The study concluded that while this is possible, the cost would be quite substantial. Aid for Trade support could be provided to establish the platform to boost trade from Mauritius to the region.

<sup>5</sup> It is noteworthy that the FTA with China contains a section on e-commerce.

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## Comments



**TRUDI HARTZENBERG\***

E-commerce does not yet feature prominently in the trade and integration strategy of most African countries. While Mauritius has not yet joined the plurilateral e-commerce initiative in the World Trade Organization (WTO), this small island economy has historically responded to changes in the global economy very astutely and tackled the process of structural transformation with strong commitment and ingenuity in policymaking in its development strategies. It is definitely gearing up to support e-commerce and digital trade more generally, and it is in this context that this chapter makes a useful contribution to gathering data on e-commerce developments in Mauritius.

The mainstay of this small island economy was, not too many decades ago, a single crop, cane sugar, which was exported almost exclusively to the European Union under preferences. An important step in the country's economic transformation was a policy decision to diversify and develop its industrial sector. The aim was to attract foreign direct investment and labour to establish a textile and garment sector. Mauritius very soon became a preferred location for the production of garments for a number of international clothing brands. To support this industrial development, trade liberalization, including tariff

reductions and improved customs and port management measures, enjoyed priority.

More recently, policy attention has shifted to the services sector, with a clearly stated ambition to become a hub for information and communications technology (ICT) related services, financial services and education services. The broad policy narrative now centres on supporting digitally enabled growth. It is in this context that the development of e-commerce in Mauritius is interesting and important. Mauritius has in recent years topped the rankings for Sub-Saharan Africa (SSA) in the United Nations Conference on Trade and Development's (UNCTAD) Business-to-Consumer (B2C) E-commerce Index (UNCTAD, 2019). For 2019, Mauritius is followed by South Africa, Nigeria and Kenya, putting this small island economy among those that are leading Africa's ICT sector growth. The tech hubs in Cape Town, Lagos and Nairobi are supporting vibrant ICT-enabled initiatives in e-commerce, finance and more. Africa already has its own "silicon valleys".

### **What about e-commerce developments in Africa?**

In addition to the global e-commerce giants such as Amazon and Alibaba

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(and AliExpress for consumers), there are a growing number of emerging African e-commerce start-ups, including Jumia.com, MallforAfrica.com and its associate MarketPlaceAfrica.com. MarketPlaceAfrica.com, which provides a global platform for African sellers (Stuart, 2020), features goods predominantly produced in Africa. DHL couriers provide delivery services for the platform to 220 countries, mitigating the challenges of poor postal services in some African countries. These developments offer opportunities for small- and medium-sized enterprises (SMEs) that are still predominant in most African economies. However, the terms and conditions for access to these platforms will determine whether SMEs will be able to thrive and grow.

The main constraints to the development of Africa's e-commerce SMEs are connectivity and the cost of broadband products. If these can be overcome, then various opportunities in ICT services trade, including e-commerce, could also be opened up. The collection of tourism-related services – accommodation, travel and event-based services – could all be traded internationally over the internet. This includes Uber and Airbnb, which could also offer opportunities in rural areas.

Convenient and cost-effective online payment services are important for e-commerce. So far, 49 African countries are on the PayPal platform. This platform (and others) could well support participation by SMEs in e-commerce, because it does not require validation of business status and does not charge additional fees. Many African countries, however, still lack competitive mechanisms to repatriate PayPal funds (Stuart, 2020).

This presents a significant opportunity to the financial services sector in Africa.

## African Union initiatives

Members of the Executive Council of the African Union (AU) endorsed a digital transformation strategy for the continent at its 36th Ordinary Session, 6–7 February 2020.<sup>1</sup> This strategy references and emphasizes several other AU initiatives,<sup>2</sup> including the AU's flagship projects and development partner-supported initiatives that are important for e-commerce development on the continent:

- The Programme for Infrastructure Development for Africa (PIDA), which includes ICT infrastructure and specifically extending fibre optic connectivity, in particular to landlocked countries;
- Electrification and connectivity of post offices in Africa, which is a collaborative project of the AU Commission and the Universal Postal Union being piloted in 13 countries. This could revitalize post offices in some countries, offering lower-cost alternatives for parcel deliveries;
- The Malabo Convention on cybersecurity, which was adopted by the AU in 2014 and aims to mitigate security-related obstacles to the development of e-commerce; and
- An EU-funded initiative – the policy and regulatory initiative for a digital Africa (PRIDA) – that works to facilitate broadband access through more efficient spectrum management and policy harmonization.

Review of national legislation to support e-commerce across the

continent reveals a mixed picture. E-transaction laws, cybersecurity and consumer protection laws, as well as privacy and data protection laws, still have to be developed in many countries. The north African region, followed by west and southern Africa, is making good progress, but much remains to be done, especially in parts of central and East Africa.<sup>3</sup>

### **E-commerce on Africa's trade agenda**

While e-commerce has been formally on the WTO agenda since 1998, when members adopted a work programme on e-commerce, it was only in December 2017 at the 11th Ministerial Conference that 71 members agreed to work towards WTO negotiations on trade-related aspects of e-commerce. Confirmation of the intention to start WTO negotiations on trade-related aspects of e-commerce was put forward in January 2019. The work programme has four focus areas: i) facilitating electronic transactions; ii) non-discrimination and liability; iii) online consumer protection and unsolicited commercial electronic messages; and iv) transparency, domestic regulation and cooperation. In December 2019, WTO members agreed to extend the moratorium on customs duties on e-transactions until the 12th Ministerial Conference (MC12) in June 2020. With the postponement of MC12, and the suspension of all WTO meetings due to the COVID-19 pandemic, it is not yet clear what will happen to the moratorium and how the work programme will continue.

Very few African countries have been participating in the WTO e-commerce work programme. Aside from Kenya, the other participants – Benin, Côte

D'Ivoire, Nigeria, and, very recently, Cameroon – are from west and central Africa. Holding back many African countries are concerns about domestic policy space and their right to regulate, their capacity to undertake commitments and, for some, the fact that this is a plurilateral rather than multilateral initiative.

The two regional economic communities that have developed e-commerce strategies are the Common Market for East and Southern Africa (COMESA) and the Southern African Development Community (SADC). COMESA announced in late 2017 that its free trade area would be going digital. The COMESA Digital Free Trade Agreement (FTA), which is still to be operationalized, will function on three tracks: (i) e-regulation; (ii) e-logistics; and (iii) e-trade. The e-trade track will include an e-commerce platform.

SADC member states adopted an e-commerce strategy in 2012, but they have not yet implemented it. The SADC strategy has four pillars: i) an enabled e-commerce environment; ii) a capacity development programme; iii) the strengthening of an e-commerce subregional and national infrastructure; and iv) an institutionalized framework to implement, evolve and govern the current strategy at the regional level. UNCTAD's B2C readiness and internet penetration assessment (UNCTAD, 2019) puts South Africa, Mauritius, and Seychelles in a leading group ahead well ahead of the other member states. None of these is, however, participating in the WTO e-commerce work programme.

The inclusion of e-commerce on the agenda of the African Continental Free Trade Area (AfCFTA) has proved

to be a contentious matter. The latest indication is that trade-related aspects of e-commerce may be tackled in 2021. Meanwhile the AfCFTA agenda does include several Annexes to the Protocol on Trade in Goods that support e-commerce. Member states are also currently preparing to negotiate commitments for five priority services sectors – financial, transport, communication, business and tourism – all of which are important for e-commerce development. Indeed, generally, the AfCFTA holds potential, perhaps most specifically in the provisions on trade facilitation, customs and border management, the elimination of non-tariff barriers, services in regulatory cooperation and perhaps, even at a future time, harmonization. These provisions could contribute to improvements in trade governance that are much needed to boost infra-Africa trade, which was a key motivating factor to establish the continent-wide free trade area.

## Endnotes

<sup>1</sup> Decisions of the 36th Ordinary Session of the Executive Council of the African Union,

available at: <https://au.int/en/decisions/council>.

<sup>2</sup> For details, see: <https://www.tralac.org/documents/resources/africanunion/3013-the-draft-digital-transformation-strategy-for-africa-2020-2030/file.html>.

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Chapter 4

# The digital trade era – opportunities and challenges for developing countries: the case of Kenya

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## Abstract

E-commerce has grown rapidly in Kenya, supported by laws governing information and communications technology (ICT) services, e-commerce transactions, data protection and access to information. The government has established one-stop shops for the provision of government services to citizens and for trade logistics. The country is well positioned to expand its digital trade with the establishment of the Africa Continental Free Trade Area (AfCFTA), given the policies outlined in the government's Digital Economy Blueprint. The growth of digital trade will open up new opportunities for the provision of online services, promote export diversification, boost efficiency and growth in manufacturing, improve competition in the financial sector, increase access to market-relevant information and increase market access for micro, small and medium-sized enterprises (MSMEs). However, the potential of digital trade is constrained by lack of access to financial services, low income, limited broadband and fibre coverage, inadequate transport infrastructure and skills gaps. Kenya's legal and regulatory framework is insufficient to protect against cybercrime, ensure privacy, support the interoperability of mobile money platforms and banks, promote consumers' trust in online transactions, protect intellectual property and protect digital sites from liability for customers' posts.

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## Status of digital trade in Kenya

Digital trade and digitally enabled transactions of trade in goods and services have been increasing globally. In Kenya, the growth of digital trade and digitally enabled transactions has been phenomenal, and digitization<sup>1</sup> has become an integral part of numerous day-to-day activities and service delivery. The importance of digitization of the Kenyan economy is expected to continue, especially since the country has recently developed and published a Digital Economy Blueprint (Republic of Kenya, 2019b). Adoption of technology and the diffusion of digitization are key drivers of the growth of digital trade and of digitally enabled transactions in the country. The proliferation of information and communications technology (ICT) services in Kenya provides opportunities to leverage business innovations to increase exports and imports (in part through improvements in trade facilitation), enhance service delivery and improve access to information, all contributing to the ease of doing business for the general public and for international traders. E-government has helped strengthen the business environment, particularly by reducing the number of procedures, and hence the time and costs, involved in starting a business and by reducing the time required to pay taxes, as evidenced in the country's Doing Business indicators (World Bank, 2019).

E-commerce has increasingly been used by both government institutions and private enterprises in Kenya, which ranks 89th globally and 7th in Africa in business-to-consumer (B2C) e-commerce readiness (UNCTAD, 2018), with the share of individuals

using the internet at 39 per cent. Government institutions increasingly use the internet, including through e-mail and instant messaging, for receiving feedback from the public, providing public services, collecting data, conducting research, training staff, purchasing or ordering goods and services, advertising, performing banking and other financial services, making phone calls (Voice over IP (VoIP)), tracking goods and services, and recruiting internal and external employment candidates. The digitization of government processes was recently taken to another level, when the National Population Census was in 2019 through a digital system that improved efficiency and enabled a more rapid release of the final tally, when compared to previous population census rounds. A public sector ICT survey by the Communications Authority of Kenya (CAK) and the Kenya National Bureau of Statistics (KNBS) in 2017 (CAK and KNBS, 2018a) shows that over 43 per cent of government institutions offer e-government services, about 20 per cent have websites with facilities for online payments, and over 49 per cent use e-procurement systems. Notably, e-government has contributed to improvements in the business environment in terms of access to government documents and information on line, easier and faster delivery of government services, improved interaction between government, industry and citizens and so on (World Bank, 2019).

The use of e-commerce by enterprises also has been increasing. The national enterprise ICT survey (CAK and KNBS, 2018b) shows that 39 per cent of private enterprises are engaged in e-commerce. About 27 per cent of

enterprises receive orders over the internet, while approximately 33 per cent (including micro, small and medium-sized enterprises (MSMEs)) place orders over the internet. About 35 per cent of enterprises use the internet to access banking services, 33 per cent to access other financial services, 36 per cent to provide customer services, approximately 17 per cent to deliver products online, 34 per cent to track goods and services, 55 per cent to research information about goods or services (excluding the government website) and 40 per cent to research and advertise. Additionally, about 93 per cent of enterprises use e-government services to file tax returns, obtain trade licences, register businesses, make enquiries and obtain information, among other business-related services.

At the heart of growth in digital trade in Kenya is the increased access to and use of ICT. The availability of internet services, for instance, has been driven by the development of internet infrastructure, particularly fibre optic and mobile broadband, but also the availability of affordable data-

enabled devices. As of June 2019, data/internet subscriptions stood at 49.9 million, with mobile data internet subscriptions accounting for over 99.9 per cent of these subscriptions (CAK, 2019a). Broadband subscriptions are about 44.5 per cent of the total data/internet subscriptions in the country and have increased five-fold since

2014, to over 22 million as of June 2019 (CAK, 2019a), enhancing access to high-speed internet for better service delivery, communication, and accessibility of information including that needed for international trade.

The use of mobile cellular services has also increased. About 91 per cent of the population used a cell phone as of June 2019 (CAK, 2019a), higher than the 80 per cent average for Africa in 2018 (International Telecommunication Union, 2018). Mobile telephony, in addition to voice and short message service (SMS), is used to provide various services, including money transfers and

payments. Mobile money transfer services have particularly gained popularity, mainly due to the ease of using smartphones. For the period April–June 2019, Kenya had over 32.6 million mobile money service subscriptions that averaged over 270 transactions and US\$ 7.28 billion (CAK, 2019a) per month. During the same period, mobile-commerce transactions averaged 197 million and KES 1.95 trillion (US\$ 19.5 billion) per month (CAK, 2019a). Mobile internet

access has also risen, with about 41 per cent of enterprises in 2016 accessing the internet through mobile broadband (CAK, 2018).

ICT has changed financial sector operations in Kenya, leading to a greater volume of transactions and faster transactions, including

**“In Kenya, the growth of digital trade and digitally enabled transactions has been phenomenal, and digitization has become an integral part of numerous day-to-day activities and service delivery.”**

payments. The Global Findex database (World Bank, 2018) shows that in Kenya from 2014 to 2017 the share of the population (over 15 years of age) who made or received digital payments increased from 69 per cent to 79 per cent, the share who owned a credit card increased from 5 per cent to 7 per cent, and the share with a mobile money account increased from 58 per cent to 73 per cent. These increases in access to financial services have taken place in both urban and rural areas, among older adults and youths, and among both men and women, thus contributing to a more inclusive financial sector.

### **Policies supporting digital trade in Kenya**

ICT is identified as an enabler for socioeconomic transformation in Kenya (Republic of Kenya, 2007). The Kenya ICT policy (Ministry of Information and Communications, 2006) and a recent draft revision promote ICT as a developmental tool, through increased use of information technologies, the development and use of e-government to improve efficiency and the quality of public service delivery, and the development of IT infrastructure. The ICT policy is based on the principles of keeping pace with changes in technology, providing universal service access at an affordable cost, ensuring adequate competition, encouraging innovation, standardizing ICT products and services for quality, maintaining global connectivity and safeguarding privacy and security. The policy has provided a framework for enhanced use of ICT in both government and private enterprises. Over 48 per cent of government institutions have an IT policy (CAK and KNBS, 2018a). The new Digital Economy Blueprint

(Republic of Kenya, 2019b) is expected to build on this foundation. Furthermore, in 2019 the country enacted a modern data protection law (Republic of Kenya, 2019a), which is compliant with the European Union's General Data Protection Regulation. The new data protection law will go a long way towards creating the right environment<sup>2</sup> for investments in digital services, as well as the use of these services by individuals and firms.

In 2013, the Kenyan government implemented the Huduma (service) Kenya programme, which aims to transform public service delivery by providing access to various public services and information. The programme, through its integrated technology platform, provides one-stop shop citizens' service centres (Huduma Centres) at various counties in the country. In 2014, the government rolled out an e-Citizen web portal to enable public online access to government services, including filing returns and payment of taxes, renewing drivers' licences, registering businesses and applying for passports and birth and death certificates, among other services. The platform also offers options for payment, including through mobile money, debit cards and e-Citizen agents. These programmes have made access to the various public services and information much easier, while also improving service delivery efficiency, convenience and timeliness.

For cross-border trade, the government has promoted digitization and automation of trade transaction processes through the establishment of the National Electronic Single Window System (authorized under the National Electronic Single Window System Act, 2016),<sup>3</sup> which aims to

address challenges related to processing of import and export cargo documentation. This online cargo clearance platform, launched in 2014, interfaces with and integrates automated export and import information from business and government agencies, issuing documents such as export and import permits, licences, and certificates, among others. The system is also linked to financial institutions, including banks and mobile payment options, through the Kenya Revenue Authority's online taxation system and the Government's e-Citizen platform, hence providing a complete electronic cargo documentation platform. The system has facilitated trade by increasing transparency in export and import processes, reducing the number of processes and documents required for processing, providing a paperless (electronic) application by traders on a 24/7 basis, and allowing for multiple payment channels. This improvement in services has reduced the costs and time required to complete trade transactions. In addition, the platform accelerates communication, thus facilitating both payments and cross-border trade. The single window system is the main reason why Kenya achieved one of the largest improvements in the World Bank Doing Business indicators (World Bank, 2019), including improvements in trading across borders.

Additionally, the government of Kenya has promoted implementation of digitization programmes under the 2018 Amendment of Registration of Persons Act (Republic of Kenya, 2018b), which provides for establishment of a National Integrated Identity Management System (NIIMS)

for the mandatory registration of all Kenyan citizens and foreigners resident in the country. Implementation began in 2019. A single register became the depository for personal information under different government documentation processes, providing a national identification number (Huduma Namba, i.e., service number) to be used when accessing all government services. In addition, the system aims at ensuring the preservation, protection, and security of this information, including national identification cards, foreigner certificates, birth and death certificates, driving licences, foreign national's work permits, passports, foreign travel documents and student identification documents. The digital identity effort is seen as a foundation, which the government and the private sector can use to strengthen other programmes, including electoral management, public financial management, payment systems, health, and social security, among others. NIIMS has, however, raised several concerns, among them security with regards to access to private data and a possible exclusion of the marginalized in the country.

The Kenya Information and Communications Act of 2009, amended in 2013 (Republic of Kenya, 2013), governs e-commerce transactions in Kenya, allowing and recognizing electronic contracts for digital transactions. The Act creates an electronic signature and provides for CAK to regulate e-commerce and protect consumers. The Consumer Protection Act of 2012, revised in 2016 (Republic of Kenya, 2016a), provides for the protection of consumers and prevention of unfair trade practices in consumer transactions.

Data protection in Kenya is provided under various laws. The Registration of Persons Act prohibits the publication or communication of data for reasons other than those allowed for official purposes. The Information and Communications Act provides for adequate cybersecurity for government systems, such as the NIIMS.

The Access to Information Act provides for protection of personal data and the right to privacy, and the Data Protection Act, 2019 (Republic of Kenya, 2019a) seeks to protect personal data. The government of Kenya has also undertaken several measures to enhance cybersecurity at the national level. In 2018, the country enacted the Computer Misuse and Cybercrimes Act, 2018 (Republic of Kenya, 2018a), which governs offences relating to computer systems; facilitates the timely and effective detection, prohibition, prevention, response, investigation and prosecution of computer and cybercrimes; and facilitates international cooperation in dealing with computer and cybercrime issues. This legislation also responds to the African Union's convention on cybersecurity and personal data protection (African Union, 2014), which requires African Union parties to adopt cybersecurity legislation and regulatory measures against criminal activities related to confidentiality, integrity, availability and survival of ICT technology systems' data processing and network infrastructure. Additionally, this convention requires that African countries ensure that e-commerce activities are exercised freely, except for gambling and prohibited activities. The country has also established the National

Response Team – Coordination Centre (National KE-CIRT/CC) at the CAK, which coordinates the response to cyberattacks and remediation of cybersecurity incidents.

### **Opportunities for digital trade in Kenya**

The Africa Continental Free Trade Area (AfCFTA) offers digital trade opportunities for its members, Kenya included. The AfCFTA brings together all 55 member states of the African Union, covering a market of more than 1.2 billion people, including a growing middle class, and a combined gross domestic product (GDP) of more than US\$ 3.4 trillion. The AfCFTA offers Kenyan small and medium-sized enterprises (SMEs) an alternative route to market their goods, especially those SMEs and entrepreneurs who were previously hindered by a lack of connectivity, high transaction costs and information asymmetries. Integrating Africa into a single digital market will create economies of scale and opportunities to grow both local and regional economies. Compared to many other African countries, Kenya is in a good position to benefit from the AfCFTA due to the Digital Economy Blueprint (Box 1), launched in May 2019, which could set a precedent for a new digital Africa and encourage wider cooperation between African nations.

Through its disruptive technologies,<sup>4</sup> a digital economy could spur economic development in Kenya. For example, M-Pesa<sup>5</sup> was one of the first banking applications to be embedded in mobile SIM toolkits. The mobile money infrastructure has created a new



### Box 1: The Digital Economy Blueprint

The five pillars of the Blueprint are digital government, digital business, digital infrastructure, innovation-driven entrepreneurship and digital skills and values. The digital government pillar comprises an interactive government portal offering e-government services, along with security of data and processes. The goal is to simplify government's interactions with its citizens, facilitate greater involvement of businesses and the general public in decision-making and improve the business environment. This requires having a solid ICT infrastructure.

The digital business pillar emphasizes the development of a robust marketplace for digital trade, financial services and content. This entails having an affordable, efficient and safe payment system; encouraging an improved legal framework; and developing regional markets for cross-border trading. This pillar calls for e-commerce to go beyond national borders and for Africa to integrate into a single digital market, thus creating economies of scale.

The digital infrastructure pillar entails the development of reliable, affordable and secure broadband connectivity. This includes logistics infrastructure, appropriate and affordable devices, management of digital assets, payment systems

and data centres. The Blueprint acknowledges the digital divide in Kenya and proposes an improvement generated by investment from private sector operators and government initiatives. This will include the National Optical Fibre Backbone Infrastructure (NOFBI), investment in broadband network infrastructure and initiatives by the CAK.

The innovation-driven entrepreneurship pillar is concerned with a system that supports local enterprises in producing competitive products and services. This would require setting aside funding for research, giving tax support to enterprises, providing access to public procurement for innovation products and supporting business models that leverage open access and intellectual property systems, incubators and accelerators for innovation.

The digital skills and values pillar highlights the development of a digitally skilled workforce based on sound ethical practices and socio-cultural values. It emphasizes the importance of artificial intelligence, robotics, coding in relevant tools, cybersecurity, the Internet of Things and mobile app development.

**Source:** Republic of Kenya (2019b).

market and disrupted the financial industry ecosystem to become a major competitor for the traditional banking sector. Mobile money enables transferring money from person to person, buying airtime, paying utility bills, and so on. M-Pesa connected a population that was hitherto unbanked (people who did not use traditional banking services).

Disruptive technologies such as artificial intelligence, robotics,

blockchain, drones, the Internet of Things, big data and software-enabled industrial platforms have great potential to impact economic development. For example, M-Pesa transformed the financial sector by significantly increasing financial inclusion, as well as opening up the possibilities of new business models and opportunities such as PayGo, digital credit and (for better or worse) mobile betting (Republic of Kenya, 2019b). Digital technology creates opportunities for innovation. New

technologies give access to markets that were previously closed and remove distortions in demand by giving customers direct access to products that were previously controlled. Rapid technological developments have created new markets that now connect consumers, lower transaction costs and reduce information asymmetry.

The internet in Kenya has opened up new opportunities for B2C and business-to-business (B2B) transactions in educational, financial, logistics and other services delivered online.

The use of personal computers and mobile phones to access the internet has provided a convenient channel for accepting orders from retail customers or other businesses, making it a useful means of delivering products and services to many customers. Kenya has a young,

tech-savvy population and a fast-expanding middle class who have computers, mobile phones and access to internet services either at home or at work.

These groups provide a huge market for digital goods and services, internet banking, international payments and the purchase and sale of goods and services online.

According to the CAK, the percentage of the Kenyan population using the internet was 98.1 per cent in June 2019 (CAK, 2019a), having risen from 45 per cent in 2016 (Internet Live Stats, 2016).

**“Disruptive technologies such as artificial intelligence, robotics, blockchain, drones, the Internet of Things, big data and software-enabled industrial platforms have great potential to impact economic development.”**

Digital platforms can give MSMEs – which make up 98 per cent of all businesses in Kenya, create 30 per cent of the jobs annually and contribute 3 per cent of the GDP (Central Bank of Kenya, 2018) – the opportunity to enter new markets and to strengthen their (currently limited) linkages with larger and more productive firms.

This enables them to supply goods and services that they otherwise would have been unlikely to do, owing to location constraints and prohibitive marketing costs.

Digital platforms are effective channels for the exchange of value/financial exchanges either in the form of goods or services. Using digital platforms reduces the use of intermediaries and rent seekers<sup>6</sup> between producers and consumers, enabling a more equitable distribution<sup>7</sup> of accrued value to the different participants along the value chain.

For example, Travelstart is a digital travel-booking platform in Kenya that customers can use to book domestic and international flights. They can also hire vehicles and make hotel reservations without going to a physical travel agency or using a travel agent.

E-commerce offers great opportunities for Kenya, with the possibility of trading platforms designed for the Kenyan user. Increased availability of broadband internet has enabled the digitization of the retail sector and enhanced online retailers such as Jumia.co.ke, Kilimall.co.ke, jijji.co.ke, Cheki.co.ke, Shopit.co.ke, Mamamikes.co.ke, MIMI online shop (www.mimi.co.ke), Electrohub.co.ke, Amanbo.co.ke, and so on. Firms use digital platforms to offer commercial products and services such as e-commerce (e.g., Amazon, Alibaba, Jumia), search engines (e.g., Jumia, Masoko by Safaricom), content platforms (e.g., Mdundo, Iroktv, Waabeh) or ride-sharing applications (e.g., Mondo Ride, SafeBoda, Little Cab) (Republic of Kenya, 2019b).

E-commerce and the use of digital platforms afford Kenya the opportunity to diversify its export markets and move into higher value-added production segments, rather than concentrating on traditional exports (e.g., coffee, tea, fruits and vegetables). Export opportunities provided by e-commerce may help to ensure longer-term firm survival in Kenya. Chacha and Edwards (2017) find that only a few Kenyan exporters survive beyond the first year, and that selling to a larger number of destination countries (among other factors) is associated with longer survival in international markets.

At the same time, Suominen (2017a), in a study conducted in 14 developing economies (Argentina, Bangladesh, Brazil, Chile, Colombia, Ghana, India, Kenya, Mexico, Nigeria, Pakistan, the Philippines, South Africa and Uruguay), shows that on average 63 per cent of online sellers sell to two or more markets, while only one third of offline sellers who export sell to more than one market. Thus it is not surprising that data from eBay suggest that 80 per cent of online exporters survive as exporters after their first year, compared to only one third of offline exporters.

Digitization of production presents important opportunities for Kenyan manufacturing firms in terms of growth and employment creation. Banga and te Velde (2018) find that digitization has helped to boost Kenya's GDP growth by supporting retail electronic payment systems and financial inclusion, and increasing the vitality of the financial sector. The authors contend that the use of digital technologies and robotics by Kenyan manufacturing firms would improve efficiency and boost their output

and exports, and thus employment. Growing digitization in Kenya can lead to the establishment of service industries for the repair and maintenance of these machines, as well as industries for data storage and information processing services, including cloud computing, computer systems design, programming, and computer-aided design and digital cutting (Banga and te Velde, 2018).

ICT has supported increased trade in services in Kenya. For example, some health services are now delivered over the internet due to ease of internet access. Blockchain technology can be used to track the pharmaceutical supply chain. Such tracking capability would help tackle the issue of counterfeit medication, which kills approximately 100,000 people in Africa every year (Ministry of Information, Communications and Technology, 2019).

The increasing availability of mobile phones in Kenya has led to a rise in SMS-based information dissemination services that could improve access to information and empower farmers with weather, market and other relevant information. Digitization has transformed the lives of farmers and others in agricultural value chains by providing near real-time agricultural and market information. Farmers get information from markets, and they also receive payments for the sale of their agricultural output using online platforms. In other words, the digitization of the agricultural sector offers new opportunities through innovations that can upscale the agricultural value chain. Trade platforms have been established that bring farmers closer to the traders by reducing the number of intermediaries

between farm and plate. Another benefit to be garnered from a digital economy is precision agriculture, where computer-guided aerial mapping, data collection on soil and weather, and the use of global positioning systems (GPS) and GPS-computer-guided implements such as tractors and harvesters can be used by farmers, hence making farming much more efficient (Ministry of Information, Communications and Technology, 2019).

### **Digital trade challenges for Kenya**

Limited access to finance and infrastructure gaps constrain the ability of individuals and firms to purchase digital technologies. While larger firms in Kenya are in a better position to leverage new technologies, MSMEs are unable to do so, mainly due to their lack of creditworthiness and the cost of deploying these technologies (Were, 2016). Although Kenya has made great strides in mobile phone ownership, there is still a significant proportion of the population that does not have access to broadband internet services to benefit from the digitization of trade. Key digital infrastructure constraints include limited access to fibre and broadband connectivity due to the high costs of installation and use, low availability of spectrum for wireless, low availability of public access points and shared access to devices, as well as the inability for persons with disabilities (PWDs) to access and use digital infrastructure. Low-quality roads<sup>9</sup> and the limited extent of the rail network, airports and harbours, coupled with the many informal settlements and un-numbered houses and streets in the formal settlements, result in high delivery costs and lengthy delays in the delivery of goods bought

online. In addition, postal services in Kenya are very unreliable, especially in remote areas (Wanyonyi, 2018). All of this severely limits the reach of e-commerce in the country.

Poverty and high rates of illiteracy limit participation in digital commerce. About 36 per cent of Kenyan households live below the poverty line, which makes paying for the internet subscription required for online shopping unaffordable. Some 38.5 per cent of the Kenyan adult population is illiterate, which results in communication challenges and lack of access to information. For example, the inability to read can make it hard to obtain information on digital investment opportunities or capitalize on the availability of information (for example, it is difficult to benefit from SMS alerts if you cannot read). Education, capacity building and citizen sensitization on the usefulness of information contained in the digital alerts are therefore crucial in order for Kenya to benefit from digital trade.

The use of enhanced, advanced digital technology in the automotive industry is limited by gaps in skills and low investment in training as evidenced by enrolments in science, technology, engineering and mathematics (STEM),<sup>9</sup> credit constraints, the high costs of electricity and steel compared with those costs in neighbouring countries such as Uganda (Muchira, 2018; Shiundu,

2017), and trading delays due to non-tariff barriers, slow customs procedures and poor logistics (Republic of Kenya, 2017). Targeting skills development to increase the capabilities of the workforce and lowering the cost of electricity (Muchira, 2018; Shiundu, 2017) are crucial to promote the use of digital products and platforms.

Cybersecurity threats, poor governance and instability constrain the success of the digital economy in Kenya. Insufficient regulation, uncontrolled access to digital infrastructure, and lack of digital hygiene<sup>10</sup> predispose all participants in the digital economy to cybersecurity risks and threats (Australia Computer Society, 2016).

To address the issues of cybercrime, Kenya has established under the CAK the National KE-CIRT/CC, which forms the national cybersecurity management framework and is Kenya's national point of contact on cybersecurity matters. Under this framework, about 51.9 million cyberthreats were detected in Kenya during the 2018–2019 period (CAK, 2019b). The National KE-CIRT/CC coordinates responses to cybersecurity matters at the national level in collaboration with

relevant actors locally and internationally, detecting, preventing and responding to various cyberthreats while interfacing with both local and international ICT service providers and with the Judiciary for the investigation and prosecution of cybercrimes. Kenya has also enacted

**“Consumers’ lack of trust in products and services sold online, delivery systems, online payments and other online services remains an important challenge to the development of digital trade.”**

**Table 1: Kenyans' level of concern about online privacy**

Response	Weighted sample	Proportion (%)
Much more concerned	540	54
Somewhat concerned	148	15
No more or less concerned	102	10
Somewhat less concerned	70	7
Much less concerned	134	13
<b>Total</b>	<b>994</b>	<b>100<sup>11</sup></b>

Source: CIGI-Ipsos (2019).

the Data Protection Act, 2019 (Republic of Kenya, 2019a). Additionally, the African Union's cybersecurity treaty, known as the African Union Convention on Cyber Security and Personal Data Protection, imposes an obligation on Kenya to establish legal, policy and regulatory measures to promote cybersecurity governance and control cybercrime.

Consumers' lack of trust in products and services sold online, delivery systems, online payments and other online services remains an important challenge to the development of digital trade. For example, threats to privacy appear to be a growing concern. A survey in November 2019 by the Centre for International Governance Innovation (CIGI) (2019) finds that 54 per cent of Kenyans are much more concerned about their online privacy than they were in 2018, while 13 per cent are much less concerned (Table 1).

While the private sector has its own interest in building consumer trust and confidence in e-commerce and online services, balanced consumer protection laws can also support consumer confidence. Hence Kenya

needs to establish a legal framework for online consumer protection that enables consumers to seek legal redress in case of breach of trust. In its Digital Economy Blueprint, the Government has committed itself to develop a legal framework to enforce digital contracts, resolve disputes and protect consumers. The legal framework would establish a level playing field between providers and customers, and advance consumer protection through improved supervision, transparency and digital/financial literacy.

Lack of protection of intellectual property (IP) constrains participation in digital trade. IP that can be digitized is hard to protect since consumers can copy and use online content without paying for it or without receiving permission from the rights holders. Since a majority of Kenyans are not aware of how they can protect their ideas and earn income from these ideas through trade, the development of internet services and platforms has underlined the need to strengthen the legal framework to protect trademarks and copyrights in the internet era.

Digital platforms such as e-commerce sites depend on user reviews of goods and services sold on such sites, and these platforms need to be protected from liability for the content generated by the reviewers. Hence, in order to encourage digital platforms to serve both the local and international markets, the Kenyan Government and its East African counterparts should create and modernize safe harbours that limit the liability of digital platforms from user-generated content.

Digital trade and especially cross-border, online trade are enhanced by the existence of secure and reliable online payment systems. In Kenya, there are several national online payment platforms for both domestic and regional transactions.<sup>12</sup> Credit cards, mobile money transfers and other forms of internet-enabled payments facilitate e-commerce and robust commercial activities within Kenya and enable the country to trade seamlessly with other Common Market for East and Southern Africa (COMESA) and East African Community (EAC) countries. However, for Kenya to enhance digital trade with the rest of the world, cross-country collaboration is still needed to fuel interoperability and integration among mobile money platforms and banks, so that the payment systems of buyers and sellers can work seamlessly with each other. Enhanced interoperability will reduce friction in e-commerce transactions, increase ease-of-use for consumers and reduce costs for platform operators.

The African Union's Digital Transformation Strategy for Africa addresses transboundary challenges, especially interoperability of systems, as well as harmonization of digital

identity systems. The Strategy commits member countries to promote open standards and interoperability to enhance trust in cross-border transactions, personal data protection and privacy (African Union, 2019). Improvements in digital infrastructure, which is one of the pillars in the Digital Economy Blueprint, would increase Kenya's ability to meet these challenges.

## Conclusion

Kenya has made significant progress in digital trade. Various opportunities abound. In particular, the launch of the AfCFTA will provide a huge market for goods and services that is also a huge digital economy. However, a lot remains to be done, including in ICT development, in order for the country to become a competitive global player in such trade. Considerable efforts are required to strengthen transport infrastructure (such as railway systems, roads, airports and harbours), the postal system and trade logistics, all of which are important for the operation of digital platforms. Continued digitization of border procedures, the establishment of blockchain<sup>13</sup> transport corridors in customs and other border agencies in the EAC member countries, strengthened surveillance of cybercrime and more effective data protection are equally important. The launching of the African Union's Digital Transformation Strategy for Africa and Kenya's Digital Economy Blueprint, increasing domestic efforts to enhance universal access to and utilization of ICT services and addressing cybercrimes in collaboration with international players will support Kenya's march towards a truly digital economy and to becoming a global player in e-commerce.

## Endnotes

<sup>1</sup> The process of converting analog information (pictures, text, sound, etc.) into a digital format that can be processed by a computer.

<sup>2</sup> For example, few procedures in registering business, shorter time in transacting business, efficiency of government regulations and so on.

<sup>3</sup> The site, <https://www.kentrade.go.ke>, is meant to simplify trade processes for the private sector.

<sup>4</sup> Disruptive technologies are innovations that significantly change the way that consumers, industries or businesses operate. They sweep away the systems or habits they replace because they have attributes that are much more superior.

<sup>5</sup> M-Pesa is a mobile banking service that allows users to store and transfer money through their mobile phones. The service is a blend of two entities where M means mobile and Pesa means money or payment in the Swahili language.

<sup>6</sup> Rent seekers are people who manipulate public policy or economic conditions as a strategy for increasing profits. However, digital platforms connect sellers with buyers without the need for physical stores or distributors, and they allow space for competition among the sellers to the benefit of the consumers.

<sup>7</sup> However, bigger and well-established digital platforms such as Amazon, Google and Facebook can acquire monopolistic tendencies and undermine the smaller and younger online platforms.

<sup>8</sup> Kenya has a road network of about 177,800 km, of which only 63,575 km are classified as in good condition and maintainable (Kenya National Highways Authority, 2019).

<sup>9</sup> According to the Commission for University Education and Kenya National Bureau of Statistics, only 1 in 4 undergraduates studied STEM courses in 2017 compared to 43 per cent in Business and Humanities (Commission for University Education (2018)). KES 404 billion (US\$ 378 billion) was spent by African countries on hiring expatriates in the STEM fields.

<sup>10</sup> The cleanliness or uncleanliness of a person's digital habitat for example, posting material such as photos online, one's desktop icons, file structure, folder trees, Photoshop files or hard drive, Facebook, Twitter, Instagram pages or digital persona, etc.

<sup>11</sup> The percentages have been rounded up to 100.

<sup>12</sup> The Kenya Electronic Payment and Settlement System (KEPSS) is a real-time gross settlement (RTGS) system, meaning that transactions are cleared and settled on a continuous basis. The East African Payment System (EAPS) and the Regional Payment and Settlement System (REPSS) aim to facilitate cross-border payments and settlements within the East African Community (EAC) and Common Market for East and Southern Africa (COMESA) regions, respectively.

<sup>13</sup> Blockchain refers to a type of data structure that identifies and tracks transactions digitally and shares this information across a distributed network of computers, thus creating a sort of distributed trust network (Okazaki, 2018).

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## Comments



**NASSIM OULMANE AND MUSTAPHA SADNI JALLAB\***

There is a large and growing consensus on the role of trade in support of economic development and economic growth. It is also generally recognized that having a predictable and transparent rules-based multilateral trading system is an important condition that needs to be met in the fight against poverty (World Bank Group and WTO, 2018). The trading system is evolving rapidly, with new forms of trade emerging. The development of information and communications technology (ICT) can further support the goal of economic development: e-commerce (Deardorff, 2017). As argued by the World Bank Group and the WTO (2018), trade and technology are closely related, and technologies are considerably reducing trade costs (Fink, Mattoo and Neagu, 2005). E-commerce has the potential to be a major game changer and, subsequently, an engine for trade and economic development within the context of the United Nations' Sustainable Development Goals 2030 agenda (UNCTAD, 2017). Indeed, e-commerce has important implications, as business-to-business e-commerce represents roughly US\$ 15 trillion annually and business-to-customer transactions around US\$ 1 trillion. In addition, the value of e-commerce transactions

totalled US\$ 27.7 trillion (UNECA, 2018b; WTO, 2018).

Africa is also experiencing the rapid growth of e-commerce, with an estimated annual rate of 40 per cent. As a result, the digital economy in Africa is expected to grow to over US\$ 300 billion by 2025 (McKinsey, 2013). However, important issues remain to be addressed. In 2020, internet availability in Africa improved, but it remains at 39.3 per cent, which is low compared to the world average of 58.8 per cent.<sup>1</sup> Fixed broadband availability remains below 1 per cent for Sub-Saharan Africa (ITU, 2019; Statista, 2019). Beyond these average figures, a key issue is the connectivity of all actors and groups, and the most vulnerable, to opportunities through existing institutions that enable economic activities (banks, financial institutions, certifications, markets, insurance, etc.). Women do not fully benefit from access to the internet, compared to men. The digital gender gap is quite significant: in 2019, 33.8 per cent of the men had access to the internet while only 22.6 of women did. At the global level, the gap is less significant, as we observed 58.3 per cent and 48.4 per cent internet access, respectively (ITU, 2020).

\* This commentary represents the opinions of the authors. It is not meant to represent the official position or opinions of the United Nations Economic Commission for Africa (UNECA) or the United Nations African Institute for Economic Development and Planning (IDEP) or its members or any additional and respective institutional affiliations of the authors. It is also not meant to represent the position or opinions of the WTO or its members.

The literature recognizes that ICT has an important role to play in sustaining economic growth and contributing to the resilience of economies, especially during crises, as witnessed today, with most economies in lockdown or slowly emerging from lockdown due to the COVID-19 pandemic and a looming global macroeconomic recession (UNECA, 2020; IMF, 2020; WTO, 2020). As the pandemic is having systemic effects and in order to ensure the social distancing required by health authorities, economic operators, including consumers and producers, are increasingly using e-commerce for their transactions. This trend is observed in Africa as well, where certain online platforms have recorded huge increases, thus significantly facilitating domestic consumption. This is also the case in Kenya, where the use of e-commerce multiplied by a factor of three during the current crisis (CNBC Africa, 2020).

**“Africa is also experiencing the rapid growth of e-commerce, with an estimated annual rate of 40 per cent.”**

One important and timely aspect that this chapter highlights is the way in which e-commerce can support economic transformation and contribute to increasing market opportunities while reducing trade costs. E-commerce and relevant innovations supported by appropriate digital applications can promote entrepreneurship, contribute to developing the private sector, and create a new set of jobs (ITC, 2018). Empirical evidence from the WTO (2018) shows that the reduction of trade costs could be particularly beneficial to micro, small and medium-sized enterprises (MSMEs), including

firms in developing countries. This is particularly true, as the authors argue, when a conducive environment is created and appropriate relevant and sectoral policies are implemented. WTO estimations suggest that developing countries' share in global trade could grow from 46 per cent in 2015 to 57 per cent by 2030 (WTO, 2018). Technological breakthroughs and e-commerce are expected to have a profound impact on labour markets, thus affecting the dynamics of future job markets. To illustrate this point, currently 60 per cent of the African population is under the age of 25, and it is estimated that between 10 to 15 million young people join Africa's labour market annually. E-commerce and digital economies can contribute to developing new opportunities and generating decent jobs, especially for women and youth (ILO, 2018). This requires adjusting policies relating to education, training and vocational training in order to better match people's skills with the evolution of job requirements.

This chapter underscores the increasing importance of e-commerce in Kenya, which is strongly facilitated by the government's proactive policies in support of economic development. These policies are geared towards expanding trade within the Africa Continental Free Trade Area (AfCFTA), as outlined in the government's Digital Economy Blueprint. The authors clearly identify the huge potential gains the AfCFTA could generate for the Kenyan economy and how the AfCFTA could facilitate

economic transformation through deeper regional integration and better access to regional and global value chains. The growth of digital trade in Africa will open up new opportunities for the provision of online services, promote export diversification, and boost efficiency and growth in manufacturing. It will also improve competition in the financial sector, increase access to market-relevant information and enhance market access for MSMEs. This trend will most likely be accelerated by the COVID-19 pandemic and its impacts on human behaviour and interaction, such as social distancing and remote work, thus transforming working methods, accelerating innovations and boosting the supply of new digital solutions to support and develop e-commerce.

It is important to recall, however, that many challenges are still present in Africa to translate the expected gains from e-commerce into tangible economic benefits. For instance, addressing the infrastructure gap and establishing enforceable, relevant and appropriate regulatory frameworks remain strategic to protect society against cybercrime, ensure privacy, support the interoperability of mobile money platforms and banks, promote consumers' trust in online transactions, protect intellectual property and protect digital sites from liability for customers' posts (UNECA, 2018b).

While this is a real challenge, the blockchain technological revolution has

the potential to lead Africa on a path of inclusive and sustainable growth. To respond to those challenges, many initiatives have been deployed. For example, the United Nations Economic Commission for Africa (UNECA) has developed a Centre of Excellence for Digital Identity, Digital Trade and Digital Economy (DITE) in partnership with the African Union Commission to support African countries to have better access to technologies. This could facilitate the smooth implementation of trade agreements such as the AfCFTA Agreement or the measures implemented under the WTO's Trade Facilitation Agreement, with a reduction in administrative trade procedures expected to be cost-effective. Also technical support on

digital strategy or legal frameworks should be provided by relevant stakeholders. The work on the African Continental Digital Transformation Strategy (DTS) is another illustration of the efforts made at the continental level to address those challenges.

The authors highlight another important constraint that results

from a lack of access to finance, particularly when considering the importance of MSMEs in the Kenyan economy and on the African continent. Emerging technologies such as financial technology (FinTech) may help to reduce financial exclusion on the continent. This is particularly relevant for Africa – according to the World Bank (2019), despite a significant improvement recently, the continent is facing a low rate of

**“E-commerce can support economic transformation and contribute to increasing market opportunities while reducing trade costs.”**

bank access, with 56 per cent of adults on the continent not having access to formal banking services in 2017. It is therefore encouraging to note that in recent years, Africa has seen a boom in FinTech start-ups across the continent (UNECA, 2018a). FinTech has had a positive impact on e-commerce, and mobile money remains the most advanced platform today for financial inclusion in Africa through the variety of services offered to users (UNECA, 2018b). To promote the development of these innovations, many issues related to regulatory frameworks

need to be addressed to increase the coverage and accessibility of FinTech services.

To conclude, this chapter evidences and underscores the importance of e-commerce for Kenya and East Africa as a tool for economic development and fuller integration in the world economy. It clearly demonstrates how access to new technologies, which is especially relevant during the current disruptive time due to the outbreak of COVID-19, has the potential to offer tangible opportunities for achieving inclusive growth.

## Endnote

<sup>1</sup> See [www.internetworldstats.com/stats1.htm](http://www.internetworldstats.com/stats1.htm).

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Chapter 5

# E-commerce in Africa: issues and challenges

Charlemagne Igue,  
Alastaire Alinsato  
and Toussaint Agadjihouédé\*





## Abstract

This chapter analyses the potential for e-commerce activities in Africa. The rapid growth of internet penetration and the use of mobile telephony, along with the adoption of mobile innovations that have greatly boosted financial inclusion and encouraged reliance on electronic payment, have established a strong basis for e-commerce development on the continent. On the other hand, still-low banking rates, fragile laws and regulations governing the sector, and a lack of cross-country harmonization of these rules constrain African e-commerce. Reducing cybercrime, increasing participation in the financial sector and strengthening of the legal framework are key steps to promote e-commerce activities.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

Trade improves economic efficiency and contributes to poverty reduction (Krueger, 1998; Stiglitz, 1998; Zahonogo, 2017). Similarly, information and communications technology (ICT) can promote economic and social development (Kauffman and Riggins, 2012; UNCTAD, 2019). Trade and ICT therefore have great potential to reduce poverty by improving, among other things, the production and sale of goods. Currently, there is a growing use of ICT by traditional players and the new, digital firms to confront the many challenges facing trade (Ducass and Kwadjane, 2015; UNCTAD, 2019).

The use of ICT by trading firms has boosted productivity and trade in southern countries. Wolf (2001) notes particularly that, in the 1990s, the use of ICT increased the growth of small and medium-sized enterprises (SMEs) in East Africa. A study of Vietnamese companies shows that the total factor productivity growth of companies marketing their products online is 1.7 percentage points higher than that of companies using the internet but not performing any online sales (World Bank, 2016, cited by UNCTAD, 2017). Wnyoike et al. (2012) back up these results and show that small businesses that adopt e-commerce outperform those that do not, because of the catalytic effect of e-commerce on business skills. These proficiency improvements are driven by the scale and network effects associated with the use of ICT by companies (Corrado et al., 2012).

Africa has several technological advantages that can facilitate e-commerce. In fact, the Global System for Mobile Communications

Association (GSMA) identifies 314 technology clusters in 93 cities in 42 African countries (Mochiko, 2016). The internet is not only increasingly available, but also increasingly used by Africans. For example, the proportion of the population in Africa using the internet rose from 16 per cent in 2013 to 18 per cent in 2016 and to 25 per cent in 2018 (UNECA, 2014; UNCTAD, 2016; World Bank, 2019). The continent accounted for 12 per cent of global internet connections in 2013 compared to 8 per cent in 2010, and the contribution of the internet to the African economy was 5.3 per cent of GDP in 2016 compared to 1.1 per cent of GDP in 2010 (Berger, 2017; CEA/BSR-AC, 2018). In 2018, Africa had more than 206 million Facebook users, or 17 per cent of the population (MediaNet, 2018).

In addition to the internet, many of the building blocks required for the growth of e-commerce, including the spread of mobile telephony and mobile money services, increased use of credit cards and increased access to bank accounts, have shown remarkable growth in recent years. Nevertheless, Africa continues to account for a small share of global e-commerce. The limited development of e-commerce despite improvements in supporting technology and infrastructure underlines the importance of identifying the constraints on e-commerce in Africa. This chapter analyses in a descriptive way the context of e-commerce practices in Africa and provides some insight into this issue.

The rest of the chapter is organized as follows. In the next section, we discuss the growth of mobile telephony and in financial sector participation, which should provide impetus for rapid

growth in e-commerce in Africa. The following section discusses the conditions delaying e-commerce in Africa. The last section concludes the chapter.

## Conditions for e-commerce in Africa

### Mobile phone penetration

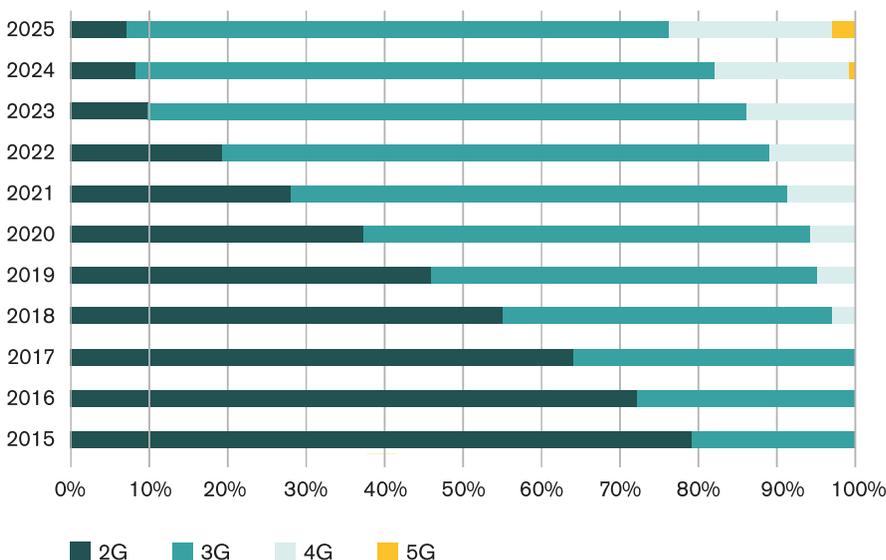
Telecommunications and the mobile industry have experienced significant development in Africa in recent years (Ninot and Peyroux, 2018). In 2017, the number of mobile users was 100 times greater than the number of landline users (World Bank, 2019). Africa is experiencing exceptional growth in mobile connections, and now has the second-largest number among global regions (GSMA, 2011; GSMA, 2018). From 2013 to 2015, the mobile phone coverage rate in Africa rose from 63 per cent to 84 per cent, and the number of subscribers from 800 million

to 906 million; it is anticipated that the number of subscribers will hit 500 million in 2020 (AfDB, 2012; AFD, 2017; Berger, 2017; ECA, 2014).

Moreover, over the past few years the share of 3G and 4G mobile coverage has increased substantially while the share of 2G has declined, and a rapid transition from 2G to more sophisticated technologies is expected over the next five years (Figure 1). For example, the share of mobile connections in Africa using 4G technology is forecast to rise from 5 per cent in 2019 to 21 per cent in 2025. These significant improvements in both the number of mobile users and the quality of the technologies adopted are a major asset for e-commerce development in Africa (Centre Africain de Politique Commerciale (CAPC) (2018).

High levels of mobile phone use have had a significant impact on several economic sectors, including agriculture,

**Figure 1: Mobile connections per technology in Sub-Saharan Africa**



Source: Authors, from GSMA data, 2018.

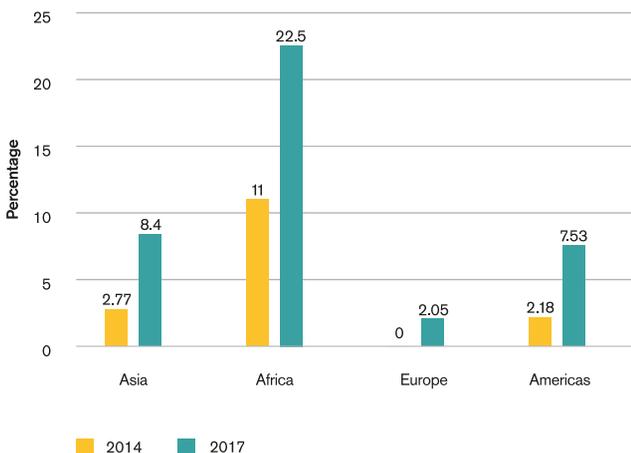
fishing, health, and education, and mobile phone use is strengthening democracy by facilitating electoral monitoring techniques and improving participation (PwC, 2013). Mobile phone use makes the economy more efficient and helps to improve people's well-being by reducing both distances and information cost. Mobile telephony accounted for about 6.5 per cent of GDP in 2017, up from 3.5 per cent of GDP in 2010 (GSMA, 2011; GSMA, 2018). Similarly, the contribution of the mobile ecosystem to Africa's economic growth is expected to increase in relative and absolute terms (GSMA, 2018). Increased use of mobile phones also will have a growing impact on e-commerce, as 46 per cent of customers prefer to buy clothes, electronics, leisure goods and music through their mobile phone, compared to 10 per cent from the computer and 44 per cent in shops (PwC, 2012).

### Innovations in mobile telephony

Access to a bank account is still difficult for the majority of the African

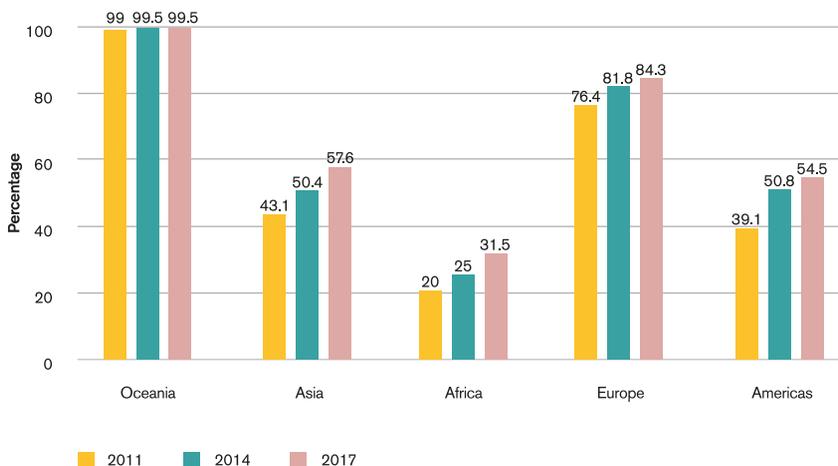
population (PwC, 2013). The factors that explain this low bank rate are manifold, including account opening conditions and high transaction costs (Williamson, 1975). Thus, cash is the dominant mode of payment on the continent. However, the advent of the mobile telephone and its high penetration rate have promoted the use of electronic payments through mobile money accounts and mobile banking. The growth of mobile money providers in Africa exceeds the global average, and Africa has the highest proportion of adults with a mobile money account of any region (Africa eCommerce Week, 2018). Data from Findex shows that the proportion of the population over the age of 15 with a mobile money account in Africa rose from 11.03 per cent in 2014 to 22.56 per cent in 2017, the largest percentage point increase and the highest rate among global regions (Figure 2). At the same time, applications for mobile phones have been developed for marketing, purchasing and selling via the internet. And some banks in Africa promote

**Figure 2: The proportion of the adult population with a mobile money account**



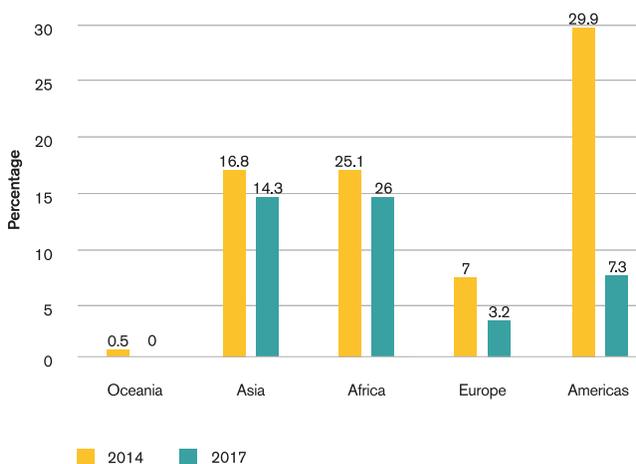
Source: Authors, based on Global Findex data.

**Figure 3: Proportion of adults with a bank account or other type of financial institution account**



**Source:** Authors, based on Global Findex data.

**Figure 4: Growth rate of bank account opening or other financial institution accounts of adults per continent**



**Source:** Authors, based on Global Findex data.

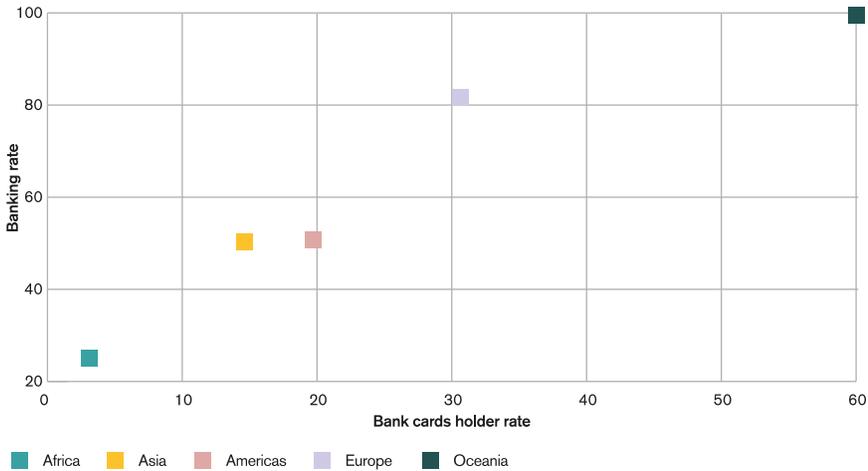
e-banking with applications that allow deposit and withdrawal transactions via mobile phones.

### Financial inclusion

Increased use of ICT is believed to improve financial inclusion (World

Bank, 2014), while greater participation in the financial sector is an important prerequisite for the growth of e-commerce. Increased penetration of mobile telephones combined with improved access to the internet has likely contributed to the rapid growth

**Figure 5: Correlation between bank account ownership and credit/debit card ownership, by region**



**Source:** Authors, based on Global Findex data.

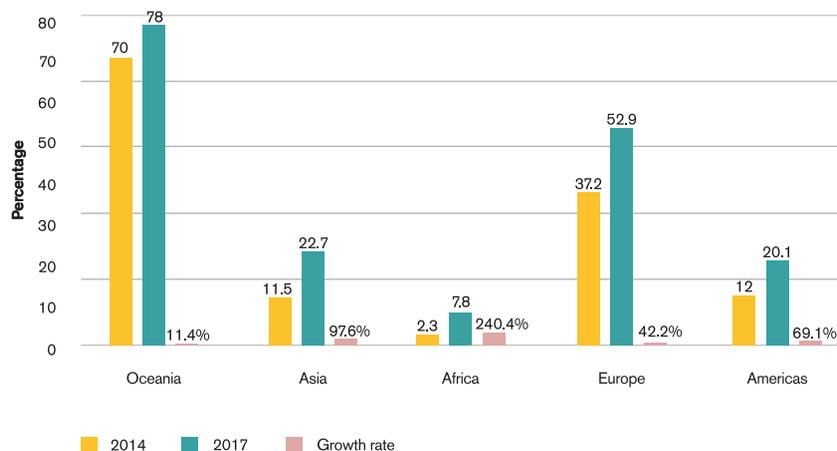
of financial inclusion in Africa. While the share of the population with a financial account in 2017 was lower in Africa than in other global regions (Figure 3), the growth rate of the opening of bank accounts from 2011 to 2017 was higher than in other regions (Figure 4). The number of Africans with a bank account increased from 170 million in 2012 to 300 million in 2017, and this figure is expected to rise to 450 million in 2022 (EcoFin Agency, 2018).

The use of credit cards also is making great progress in Africa. In 2016, 3 per cent of the African population over the age of 15 had a credit card, and this rate has been increasing steadily (UNCTAD, 2017). Bank account ownership is highly correlated with possession of a credit or debit card, the favoured means of payment for e-transactions or e-commerce (Figure 5).

### **Increases in e-commerce**

The rise in mobile telephony and increased participation in the financial

system have been accompanied by rapid growth in the use of the internet for purchases or payments. During the period 2014–2017, online payments or purchases in Africa grew by 240.44 per cent, compared to 97.55 per cent in Asia, 42.20 per cent in Europe, and 69.17 per cent in America (Figure 6). This strong growth in online payments or purchasing reflects a sturdy increase in e-commerce in Africa (CAPC, 2018). However, Africa's share of global e-commerce transactions remained at less than 2 per cent in 2017, and the more than 21 million online shoppers in Africa made up less than 2 per cent of the global total (Ducass and Kwadjane, 2015; UNCTAD, 2019). UNCTAD estimates that the business-to-consumer (B2C) e-commerce market in Africa was worth about US\$ 5.7 billion in 2017, amounting to less than 0.5 per cent of the continent's GDP and below the global average of more than 4 per cent (Africa eCommerce Week, 2018).

**Figure 6: Evolution of online payments or purchasing per continent**

**Source:** Authors, based on Global Findex data.

### ICT and export performance of African SMEs

The use of ICT provides many strategic and operational benefits to SMEs. These include development of closer relationships with customers and business partners, intense integration of internal and external processes, better access to external resources, and improved access to information. These benefits are likely to improve decision-making, strengthen trade relations and, in turn, improve e-commerce development and the international visibility of SMEs (Brynjolfsson and Smith, 1999; St-Pierre, Monnoyer and Boutary, 2017; UNCTAD, 2018; UNCTAD, 2019).

Empirical evidence on the effect of ICT on SME exports is scarce, however, due to the lack of data on SMEs (St-Pierre, Monnoyer and Boutary, 2017; UNCTAD, 2019). St-Pierre, Monnoyer and Boutary (2017) find that for 294 Canadian manufacturing SMEs, the use of ICT stimulates innovation and monitoring

activities but has no effect on collaboration and search for marketing information. In addition, they find that innovation collaboration, and marketing research activities positively and significantly affect exports, while monitoring activities negatively influence exports. For a sample of 43 Sub-Saharan African countries, Wamboye, Adekola and Sergi (2016) conclude that the adoption of ICT by companies is associated with productivity growth through an increase in output, confirming the existence of a network effect.

To develop e-commerce and increase export capacity, an increasing number of African SMEs are working to establish their own digital identity by creating websites and having their own e-mail addresses (Coste, 2017; Dupont, 2018). In Benin, for example, the share of SMEs who owned a website rose by 5 percentage points from 2009 and 2016, and the share with an e-mail address increased by 13 percentage points. In Burundi

**Table 1: ICT, e-commerce and export performance of SMEs per country**

Country	Year	Website ownership (%)	Possession of e-mail address (%)
Benin	2009	28.00	67.00
	2016	41.00	72.00
Burundi	2013	45.43	53.16
	2016	60.42	67.48
Ghana	2007	8.91	33.00
	2013	33.33	64.44
Kenya	2007	16.13	57.08
	2013	52.11	81.05

Source: Authors, based on Data from Enterprise Survey, 2019.

from 2013 to 2016, the share of SMEs with e-mail rose by over 14 percentage points and the share with a website by 15 percentage points. In Ghana, the share of SMEs using e-mail rose by more than 31 percentage points, and the share with a website by more than 24 percentage points from 2007 to 2013. Finally, in Kenya, the share of SMEs with e-mail rose by 24 percentage points and the share with a website by 36 percentage points. For Africa as a whole, the e-retailers' profile study conducted by Oxatis shows that 28 per cent of e-retailers are SMEs, and that 29 per cent of physical shops also have an online shop; the number of SMEs selling goods retail increased by 30 per cent in 2016 (Coste, 2017).

In Africa, an increasing number of SMEs have their own e-commerce sites and e-mail addresses. As shown in Table 1, the proportion of SMEs who use e-mail addresses in their communication or own their websites is generally and constantly

rising on the continent. This is a good base for e-commerce development in Africa.

### Conditions restricting e-commerce in Africa

We have shown that e-commerce has significant potential for growth in Africa. However, substantial barriers to e-commerce development on the continent remain, the most important being cybercrime, a poor legal framework to support e-commerce, and inadequate consumer protection.

### Cybersecurity

Transaction security is a major concern for e-commerce participants (UNCTAD, 2018; PayPal, 2013), and cybercrime is a major obstacle to the use of ICT and thus to e-commerce development (Gaidosch, 2018; McAfee, 2018; OECD and WHO, 2017). Cybercrime is hard to control, given difficulties in identifying cybercriminals (their profile is significantly different from that of conventional criminals) and a lack of data or a strong policy

agenda (Aggarwal, 2009; Alinsato, 2012; Giannangeli, 2008; Sutherland, 2008; UNCTAD, 2018; UNCTAD, 2019). Becker (1968) argues that tough laws are essential to fight cybercrime, and over the past 15 years, there have been at least 246 laws or drafts of laws on cybersecurity (UNCTAD, 2018).

Cybercrime continues to have a major impact on Africa (African Cybercrime Forum, 2018; CFAO, 2018; Symantec Corporation, 2013). McAfee (2018) estimates the cost of cybercrime to Africa at 0.20 per cent of its GDP annually. About 80 per cent of Africa's personal computers are believed to be affected by viruses and other malware (CFAO, 2018; Gacy, 2010). Nigeria, Ghana and South Africa are ranked in the top ten in cybercrime worldwide (IC3, 2010). The vulnerability rate of digital infrastructure<sup>1</sup> in Africa is 83 per cent above that of other continents (James, 2019).

The high probability of being a victim of cybercrime severely constrains e-commerce in Africa (African Cybercrime Forum, 2018; Alinsato, 2012; CFAO, 2018; UNCTAD, 2018; UNCTAD, 2019).

The African agenda of laws and texts ignores important aspects of cybercrime, such as the illegal use of services and the electronic payments (CAPC, 2018; Ducass and Kwadjane, 2015), which are holding back online businesses.

The analysis of the legal framework on cybersecurity shows wide inequalities. Only a few African countries, such as Morocco, Senegal and Tunisia, have achieved advances in e-commerce in general and in cybersecurity in particular (Ducass and Kwadjane, 2015). These countries have promulgated laws on the protection of personal data and electronic communications, while others are struggling to enact laws in these fields (UNCTAD, 2015). Thus, the constraint on e-commerce due to cybercrime seems to be easing in these countries compared to other countries on the continent.

Aware of the importance of cybercrime and of the inadequacy of sub-regional cooperation (Bekrou, 2015; Hamel and Triclin, 2017), the African Union adopted the "African Union Convention on Cyber Security and Personal Data Protection" at the 23rd Ordinary Session in Malabo (African Union, 2014) on 27 June 2014 to promote the harmonization and development of cybercrime regulations. Paragraph 1 states that: "States Parties are committed to ensuring that the legislative and/or

**“Reducing cybercrime, increasing participation in the financial sector, and strengthening of the legal framework are key steps to promote e-commerce activities.”**

regulatory measures adopted to combat cybercrime strengthen the possibility of regional harmonisation of these measures and respect the principle of double jeopardy". The creation of the Continental Free Trade Zone (CFTZ) by the African Union will

**Table 2: Estimated impact of tax cuts over a 5-year period (2019–2023) for Guinea**

	Price of the services	Additional investment in the economy	Total of mobile new subscribers	GDP growth	Number of jobs created	Increased tax revenues up to 2023
Elimination of excise duty on call bonuses (telephone consumption tax (TCT))	-4.4%	+ US\$ 14 M	+ 663,000	+ US\$ 57 M	+ 4,156	+ US\$ 13 M
Removing the US \$0.12 per minute surcharge on incoming international calls (SIIC)	-42.3% (price of entering international calls)	+ US\$ 24 M	+ 927,000	+ US\$ 89 M	+ 13,193	+ US\$ 8 M
80% reduction in annual fee on wireless beams	-4.4%	+ US\$ 9 M	++ 220,00	+ US\$ 22 M	+ 3,798	+ US\$ 2 M

Source: Authors, based on data from Enterprise Survey, 2019.

also support the control of cybercrime. Among the specific objectives of the CFTZ are the implementation of trade facilitation measures and the establishment of a dispute resolution mechanism (Article 3 of the CFTZ Agreement). The CFTZ is an opportunity to fight cybercrime, as it will bring countries to harmonize their various policies, including their electronic payment security policy, and should promote e-commerce development (UNCTAD, 2019). The Executive Council's President, of the African Union, calls on the countries to promote digital identity and the implementation of digital identification systems across the continent (African Union, 2018). In short, the CFTZ will facilitate the development of a digital economy in African countries (African Union, 2018).

### Legislation in the e-commerce field

Most African countries lack many of the basic requirements of a legal framework for e-commerce. For example, apart from Algeria, no country has laws providing for the acceptance of electronic signatures (UNCTAD, 2015). A few countries, including Algeria, Côte d'Ivoire, Ethiopia, Morocco, Senegal and Tunisia, have made progress in establishing a legal framework for e-commerce (UNCTAD, 2015), while the others still lag behind. There also is a lack of harmonization of the legal frameworks of African countries (CAPC, 2018; Ducass and Kwadjane, 2015).

GSMA (2012) identifies major obstacles to the development of the mobile industry and, in turn,

e-commerce in Africa due to the absence, or poor quality, of legislation. These include the high cost of licences, the heavy taxation of mobile phone imports, the lack of clarity on tax and regulatory requirements, and the need for better harmonization of the spectrum for mobile telephony throughout the region. GSMA

(2018) argues that a reduction in taxes in the technology sector would lower prices and spur investment. In Guinea, for example, eliminating the excise duty on call bonuses would reduce the price of services by 4.4 per cent and would boost the number of mobile subscribers by 663,000, leading to an additional US\$ 14 million in investment in the economy and a rise of US\$ 57 million in GDP (Table 2). All this would lead to the creation of more than 4,000 new jobs and an increase in tax revenues of more than US\$ 13 million. Similar effects result from removing the US\$ 0.12 per minute surcharge on incoming international calls and reducing the annual fee on wireless beams by 80 per cent.

### Consumer protection

Strong consumer protection is crucial in the development of e-commerce. It gives confidence and encourages consumers to buy online. Many countries in Africa lack any legislation governing consumer protection, and some of the legislation in this area is of poor quality. For example, the laws governing consumer protection in some African countries take into account only the subsidiary aspects of the consumers' rights and neglect aspects such as the inability to return

non-compliant goods, assign responsibility for problems and identify the relevant jurisdiction (Ndiaye, 1999).

### Conclusion

This study analyses the challenges facing e-commerce in Africa. Mobile phone penetration, innovations in mobile

telephony, financial inclusion, the CFTZ and the use of ICT by African SMEs that improve their export performance are key factors in the development of e-commerce. Lack of control of cybercrime, defects in the legal framework and inadequate consumer protection are key obstacles to e-commerce development. These issues should be addressed by harmonizing the legal agendas of the different countries on the continent, on the one hand, and by inaugurating new laws on cybersecurity, consumer protection, and the development of e-commerce, on the other hand. In addition, enforcement should be strengthened and efforts made to inform citizens of the legal framework and the opportunities involved in e-commerce. Countries such as Algeria, Morocco, Senegal and Tunisia can serve as models for e-commerce development in Africa, because of their efforts to improve their legal agendas in favour of e-commerce.

### Endnote

<sup>1</sup> The vulnerability rate includes a country's resilience to natural disasters and cyberattacks, and its ability to recover in the aftermath.

**“Africa has several technological advantages that can facilitate e-commerce.”**

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## Comments



**PIERRE SAUVÉ\***

Major technological advances over the past two decades have led to the development of new business models, an increase in the complexity of production systems and a sharp rise in the volume of cross-border transactions conducted over digital networks. Digitization presents a number of novel regulatory challenges for trade rule-makers. These stem in no small measure from the increasingly blurred distinction between goods and services and the resulting uncertainty as to the applicable trade rules.

World Trade Organization (WTO) rules on goods and services and the trade body's jurisprudence have long confirmed that digital trade is subject to trade law disciplines. At the multilateral level, the 1994 General Agreement on Trade in Services (GATS) and its annexes (particularly that on basic telecommunication services agreed in 1997) are of primary importance for enabling services that underpin the digital world and digitally enabled services. In the case of digitally enabled trade in goods, the General Agreement on Tariffs and Trade 1994 (GATT 1994), including the Trade Facilitation Agreement concluded in 2013, provides important measures while the WTO's Information Technology Agreement

(first reached in 1996 and revised (and expanded) in 2015) has proven key to eliminating tariff barriers on a wide range of information and communications technology (ICT) products.

Provisions dealing more specifically with e-commerce have become an increasingly common feature of contemporary trade governance in recent decades. Launched in 1998 with the aim of building consensus over the key parameters of global digital governance, the WTO Work Programme on Electronic Commerce has, however, produced little by way of tangible progress over the past two decades. Growing frustration over the glacial pace and inconclusive nature of discussions held under the 1998 Work Programme prompted a group of 70 like-minded WTO members to issue a Joint Statement on Electronic Commerce aimed to "initiate exploratory work toward future WTO negotiations on trade-related aspects of electronic commerce" at the Eleventh Ministerial Conference of the WTO (MC11) in December 2017.<sup>1</sup> Following a year of exploratory talks, 76 WTO members accounting for 90 per cent of global trade agreed, on the margins of the January 2019 edition of the World Economic Forum in Davos, on a

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Ministerial Declaration setting out their intention to launch plurilateral negotiations on electronic commerce open to all WTO members.<sup>2</sup>

### The experimental role of preferential trade agreements

In the absence of globally agreed norms on digital trade, preferential trade agreements (PTAs) have served as laboratories in which to experiment with – and adopt – elements of a nascent regulatory regime governing electronic transactions and digital trade (Wu, 2017). While extensive attention has been devoted to the political economy forces underpinning the recent sharp rise in PTAs and their growing influence in norm-setting, research devoted to analysing the digital trade-related provisions found in PTAs and the factors influencing their inclusion and substantive remit remains largely incipient. This can be explained in part by the fact that digital technology for

commercial purposes is itself a relatively recent phenomenon, dating back to the mid- to late 1990s, as can be seen by the scant explicit attention paid to electronic transactions in the relevant legal texts establishing the WTO in 1994. It can further be inferred from the fact that the first PTA featuring specific provisions on e-commerce – on paperless trading – was that entered into by New Zealand and Singapore a mere two decades ago, in 2000.

Studies devoted to the treatment of e-commerce in trade agreements have allowed for a finer understanding of how to identify and classify provisions

relating to digital trade based on their content and scope of application (Herman, 2010; Monteiro and Teh, 2017; Weber, 2015). A range of studies have addressed all disciplines and obligations impacting digital trade, beyond e-commerce (Meltzer, 2015; Mishra, 2016; Wu, 2017). In overall terms, disciplines deemed of direct relevance to digital trade include provisions on data and consumer protection; rules on paperless trade, electronic authentication, and digital signatures; provisions governing cross-border data flows and measures relating to data localization; rules calling for the (temporary or permanent) prohibition of custom duties levied on electronic

transactions; provisions on regulatory cooperation; and treaty language defining e-commerce and digital products. The very fine contribution of colleagues from the WTO Chair in Cotonou devoted in this volume to the African e-commerce landscape recalls how any comprehensive policy response to

e-commerce must of essence tackle a wider range of measures extending beyond trade law to areas such as financial inclusion, payments systems' regulation and battling cybercriminality.

The studies cited above usefully track the evolving scope and depth of disciplines governing electronic commerce in PTAs. Monteiro and Teh (2017, note 3), for instance, found that almost 30 per cent of the 275 PTAs that had been notified to the WTO by May 2017 featured e-commerce provisions. Their work also documented the marked recent rise in the number of PTAs featuring disciplines on e-commerce,

**“Digitization presents a number of novel regulatory challenges for trade rule-makers.”**

a conclusion shared by Hofmann, Osnago and Ruta (2017).

Wu (2017, note 4) corroborates the above findings, noting that the scope of e-commerce provisions found in PTAs has progressively expanded to encompass an ever broader range of issues. Echoing much recent literature devoted to the study of the comparative remit of PTAs and the WTO (Roy, 2014; Roy, 2019; Roy, Marchetti and Lim, 2006), Wu (2017) finds that PTAs featuring an advanced economy trading partner, such as the United States or the European Union, tend to address a significantly broader and deeper range of digital trade issues than do PTAs conducted along South-South lines.

Much attention has also been devoted in the academic literature to uncovering the underlying political economy of PTAs and the forces influencing a country's recourse to bilateral or regional trade agreements to advance its digital trade policy agenda (Van Grassek, 2011). An important strand of such literature has concerned itself with the study of the role that various economic and geopolitical factors play in shaping the content of specific disciplines found in PTAs. For instance, in assessing the provisions of the PTAs entered into by the European Union and the United States, Horn, Mavroidis and Sapir (2009) determined that the European Union showed an early tendency to use trade policy as a vehicle for "declaratory diplomacy", whereas the United States tended to ensure that any so-called

WTO+ provisions found in its PTAs served the commercial interests of its leading exporting firms and were more likely to be enforceable.

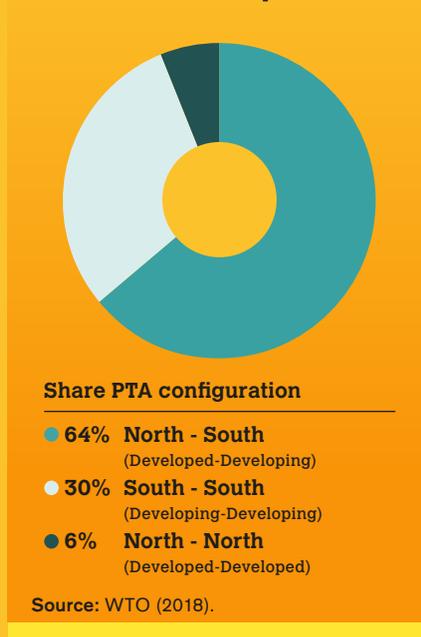
Wunsch-Vincent (2006) and Ferracane and Lee-Makiyama (2017), both of whose work explored the conceptual framework underpinning the negotiation of digital trade disciplines, showed that the European Union and the United States tended to rely on differing negotiating parameters, though a closer look at the latest generation of PTAs entered into by both parties suggests that the "normative distance" between them has been reduced on

**“Provisions dealing more specifically with e-commerce have become an increasingly common feature of contemporary trade governance in recent decades.”**

some key negotiating issues such as data localization while remaining significant on other key negotiating items such as the regulation of cross-border data flows and data privacy. In the case of China, arguably the world's third major player endowed with norm-making influence, Ferracane and Lee-Makiyama (2017) find that the country's more restrictive stance towards information and communications technology and, consequently, its negotiation of disciplines on digital trade are strongly influenced by a set of non-trade considerations, including national security and public order concerns, as well as by the predominance of state-owned enterprises.

Overall, while contemporary PTAs feature a broad set of digital provisions, there remains wide variance across agreements in terms of the depth and breadth of issues covered, with many

**Figure 1: Parties to PTAs with e-commerce chapters**



provisions framed as “best endeavours” or soft law disciplines not subject to dispute settlement (Meltzer, 2015). The regulatory precaution on display is perhaps less than fully surprising given the extent to which technology tends to outpace regulation in cyberspace.

A closer look at membership in PTAs featuring e-commerce provisions reveals a striking diversity of participating countries. While e-commerce provisions were long found mainly in PTAs involving developed economies (concluded either with developing or other developed economies), provisions dealing with digital trade are today increasingly found in agreements reached among developing countries. In an examination of a sample of 63 recently notified PTAs featuring e-commerce provisions, the WTO found that 30 per cent were concluded among

developing countries, while only 6 per cent were conducted among developed economies (see Figure 1).

In terms of geographical representation, not all regions are represented equally. Among developing economies, economies in South-East Asia and Latin America countries have been far more active in this area, with a recent trend showing South-South agreements involving parties from both regions. On the other hand, African countries are still largely absent. In Africa, only Morocco is party to a PTA with an e-commerce chapter (with the United States). The European Union’s Economic Partnership Agreements (EPAs) with Côte d’Ivoire and Ghana only contain an understanding that the parties will cooperate to facilitate the conclusion of an agreement in trade in services and electronic commerce, as well as other areas.

The above considerations hold important implications for African nations as they contemplate the normative contours of continent-wide disciplines on e-commerce called for under the recently established African Continental Free Trade Area (AfCFTA). As relative latecomers to digital governance, African governments can consider the different regulatory models on offer globally within latest-generation PTAs and adopt those provisions best tailored to the continent’s needs, capacities and policy priorities.

### **Digital trade governance: African challenges and perspectives**

The potential for digital trade to drive economic development and transformation in Africa remains largely

unexplored. While there is still a long way to go to bridge the continent's digital divides, important recent gains in connectivity have helped improve lives in many parts of the African continent. Of all regions of the world, Africa registered the strongest growth in internet use, with the percentage of people using the internet increasing from 2.1 per cent in 2005 to 24.4 per cent in 2018, according to ITU data (ITU, 2019).

While e-commerce is thriving in several individual African countries, has spawned far-reaching gains in inclusiveness, and led to significant innovation, notably regarding electronic payments, all too often advances have been confined to domestic markets and inadequately scaled for regional or continental uptake. Moreover, in many parts of the continent, digital trade proceeds within embryonic regulatory ecosystems still in the process of being established.

The AfCFTA, which came into effect on 30 May 2019 and features a built-in negotiating agenda on e-commerce and digital trade, provides African countries with a ready-made setting in which to design a Pan-African digital strategy and action plan aimed at accelerating the development and regulatory sophistication of the continent's digital ecosystem and enhancing the volume of digitally enhanced cross-border transactions.

As noted above, in coming late to the dance, African governments retain considerable policy space within which to develop a continent-wide governance regime for digital transactions. African countries can in effect learn from the doing of others and reap the late-mover benefits deriving from the normative experimentation of other countries and regional groupings in the digital sphere. By drawing on selected aspects of an evolving mosaic of PTA-embedded rules on e-commerce and digital trade, the AfCFTA's built-in agenda can help governments adopt digital rules that are best aligned to the continent's diverse development, infrastructure, regulation and digital literacy landscapes.

**“Building a robust African digital economy will require deepened regional cooperation and the pooling of resources and information sharing on emerging best practices across several key areas.”**

Digital trade and its benefits for development can essentially be harnessed in two ways. First, through the growth of e-commerce and its use of digital platforms to facilitate trade in goods and services capable of both physical and digital delivery. Expanded opportunities for African economies can materialize through the increased connectivity of both local and foreign markets that AfCFTA-led integration will help promote on a continental scale.

Growing internet use in Africa has been instrumental in providing new sources of market access for the continent's micro, small and medium-sized enterprises (MSMEs) and entrepreneurs long shackled by weak cross-border connectivity, punitively high trade costs and a host of asymmetries in market information.

Second, and perhaps of even greater importance for Africa's longer-term growth prospects, digital uptake can speed up the adoption and diffusion of innovative technologies, leading to economy-wide gains in efficiency and productivity and boosting the competitiveness of the continent's agricultural and manufacturing sectors.<sup>3</sup> Increased digitization in both sectors will also fuel demand for ICT and business services, enhancing the performance of tertiary production and exchange in the process.

Many WTO members from Africa have expressed reservations about ongoing negotiations on e-commerce at the WTO, arguing that considerable uncertainty continues to surround the regulation of digital trade domestically and how it should be governed across borders. For many, engagement in negotiations at the global level appears premature in light of prevailing digital and technological divides and inadequate or incomplete domestic regulatory frameworks. The AfCFTA is seen by most players as offering a more attractive setting in which to pool regional efforts to strengthen capabilities and progressively scale-up digital economies. There is much to learn from and draw on from recent PTA experiments in doing so.

A sophisticated legal and regulatory framework that enables digital transactions is vital for fuller participation in digital trade, be it regionally or globally. To date, only a few African countries have put in place the regulatory toolkit required for secure cross-border transfers of data, the protection of personal data and consumer rights on digital platforms, the policing of cybercrime, and the recognition of electronic transactions,

all of which are critical building blocks for an effective digital economy.

Regulatory frameworks also need to be supported by efficient ICT infrastructures, which provide the critical backbone of the digital economy. As the note by the WTO Chair in Cotonou documents well, Africa needs to close its digital gap with the rest of the world if more of the continent's consumers and businesses are to operate online and for levels of internet connectivity, digital literacy and access to latest-generation ICT infrastructure and broadband are to converge with global norms.

Plurilateral negotiations on e-commerce at the WTO have offered the somewhat disquieting spectacle of non-engagement by a majority of African members who have chosen to stay on the side lines and effectively leave to others the task of developing agreed norms of digital governance. In so doing, they forego the significant learning externalities embedded in a multilateral negotiating journey characterized by considerable normative discovery and to which, as sovereign nations, none need be bound by at the end of the process. Care will therefore need to be taken to ensure that the AfCFTA's potential for strengthening the continent's digital capabilities is harnessed in full and constitutes a key building block for heightened regional and global connectivity.

While there is still time to hop on the digital train and to do so first at the continental level, Africa does not have the luxury of acting slowly. Absent faster digital transformation, African nations will likely not generate the huge number of new jobs needed to match their population growth. Moreover, as noted above, trade rules alone will not suffice.

Building a robust African digital economy will require deepened regional cooperation and the pooling of resources and information sharing on emerging best practices across several key areas, including digital infrastructure, digital literacy and skills, digital financial services, digital platforms and digital entrepreneurship and innovation.

## Endnotes

<sup>1</sup> Joint Statement on Electronic Commerce, WT/MIN(17)/60, Eleventh Ministerial Conference, World Trade Organization, 13 December 2017.

<sup>2</sup> See [https://www.wto.org/english/news\\_e/spra\\_e/spra300\\_e.htm](https://www.wto.org/english/news_e/spra_e/spra300_e.htm).

<sup>3</sup> For instance, the combination of the Internet of Things, big data and cloud computing for precision agriculture results in more accurate crop and weather monitoring. For a fuller discussion of sources of innovation in agriculture, see WIPO (2017). See also Fuglie, Gautam, Goyal and Maloney (2020).

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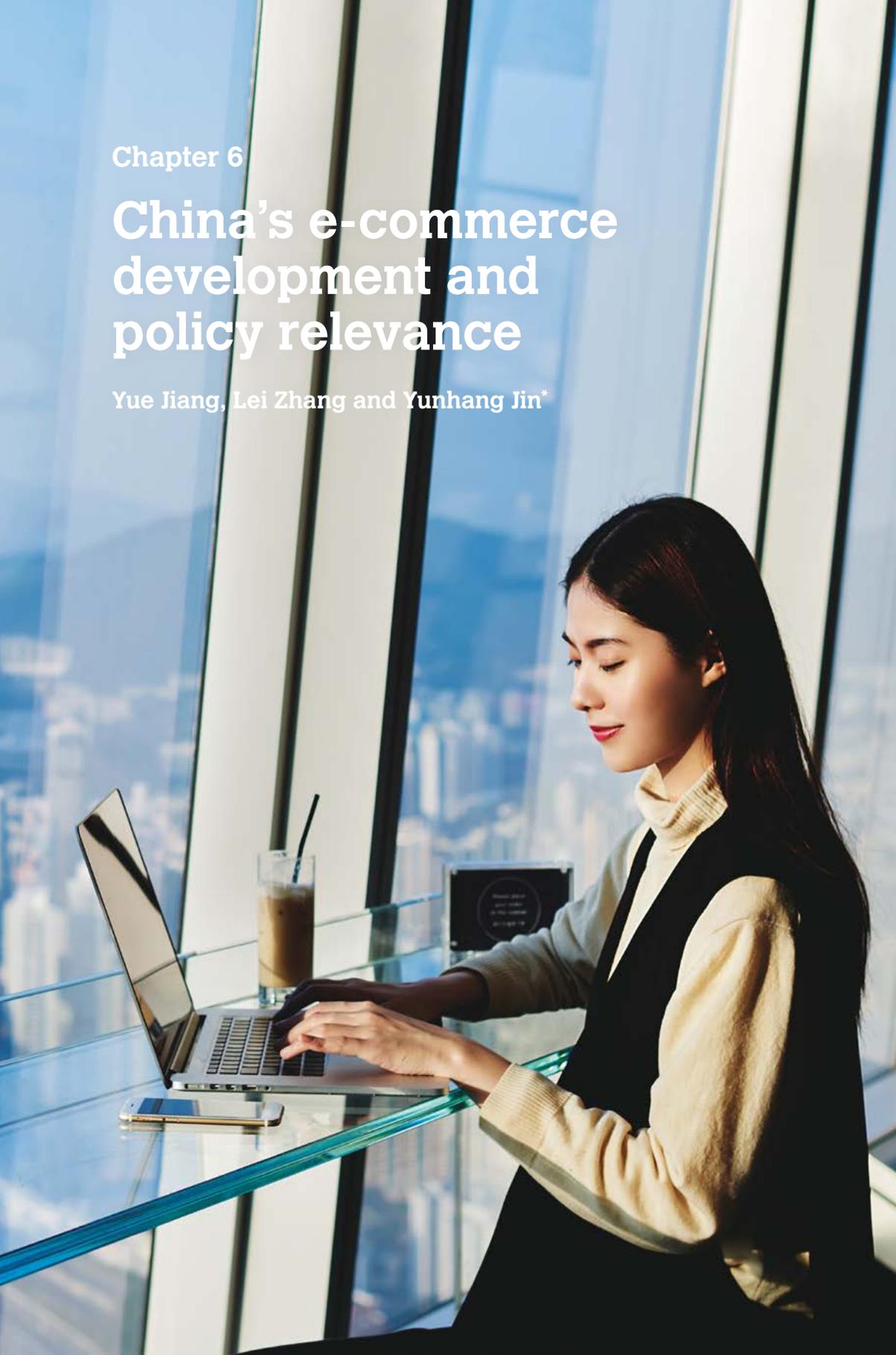
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Chapter 6

# China's e-commerce development and policy relevance

Yue Jiang, Lei Zhang and Yunhang Jin\*





## **Abstract**

The dollar value of e-commerce transactions in China has increased enormously over the past 20 years, supported by improved infrastructure, the rapid growth of mobile telephony and increased financing. The market also is characterized by increasing diversity, for example, the growth of e-medical services, the expansion of cross-border e-commerce and the development of online-offline transactions. China's national government has played an important role in the development of e-commerce through policies elaborated in five-year plans, while regional governments also have participated in planning and adjusting the e-commerce policy framework in light of local conditions.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## China's e-commerce development: past and current situations

China's e-commerce market emerged 20 years ago. China's e-commerce transactions increased from only US\$ 1.16 trillion (CNY 8 trillion) in 2012 to US\$ 4.58 trillion (CNY 31.63 trillion) in 2018 (Figure 1). In 2018 (the last year for which data are available on the composition of e-commerce), e-commerce transactions of goods and services equalled US\$ 4.44 trillion (CNY 30.61 trillion) with a year-on-year growth rate of 14.5 per cent.<sup>1</sup>

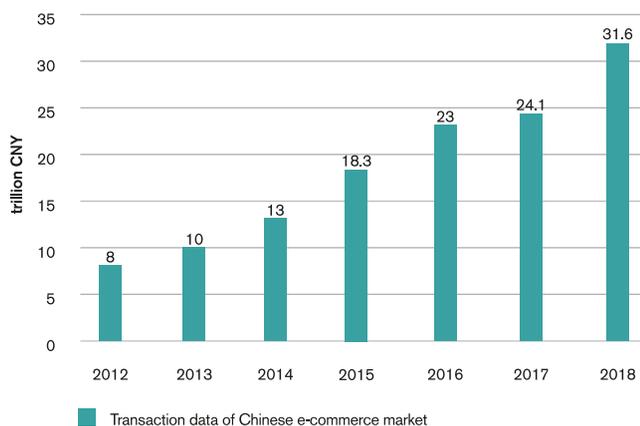
In 2018, the transaction scale of China's online retail sales reached US\$ 1.3 trillion (CNY 9 trillion), accounting for 28.5 per cent of the market.<sup>2</sup> Sales of e-commerce services have increased rapidly since their development in 2013. According to Yang (2016), the online-to-offline (O2O) transaction volume of local living services was expected to reach

US\$ 144.81 billion (CNY 999.2 billion) in 2017, with a year-on-year growth rate of 71.5 per cent.

China's e-commerce development has experienced four phases (Yin, 2018):

1. Germination stage (1997–1999)  
During this period, few people were informed about the market or participated in online shopping, and online shopping platforms were in their infancy. The main impact of e-commerce was to assist small and medium-sized enterprises (SMEs) to participate in international business-to-business (B2B) transactions. The demand for customer-to-customer (C2C) transactions had not yet arisen. Major e-commerce companies during this period were Alibaba, 8848 and EachNet.
2. Construction stage (2000–2007)  
The internet bust led to a reshuffling of e-commerce firms, as over one-third of internet websites

**Figure 1: China's e-commerce transactions have increased rapidly**



**Source:** Research report on market prospects and investment opportunities of China's e-commerce industry in 2019–2024, China Business Industry Research Institute, 2019, available at: <https://www.askci.com/news/chanye/20190722/1129101150117.shtml>.

disappeared. Nevertheless, increased acceptance of online shopping led to the rapid development of C2C transactions. However, there were important defects in logistical support for e-commerce, and sales of counterfeit goods were a major issue.

### 3. Evolution stage (2009–2015)

China's e-commerce market was fully developed, and competition among e-commerce enterprises was fierce. 3G was officially commercialized in 2009 (Shen and Chen, 2018). The number of user clicks for online shopping reached 100 million. The business-to-consumer (B2C) platform Tmall went online. Purchases of clothing, shoes and handbags, as well as of household goods and services, increased. The number of internet users and firms providing express logistics services showed explosive growth, while the use of mobile phones to undertake e-commerce transactions rose sharply.

**“The market also is characterized by increasing diversity, for example, the growth of e-medical services, the expansion of cross-border e-commerce and the development of online-offline transactions.”**

### 4. Mature stage (2016 until the present)

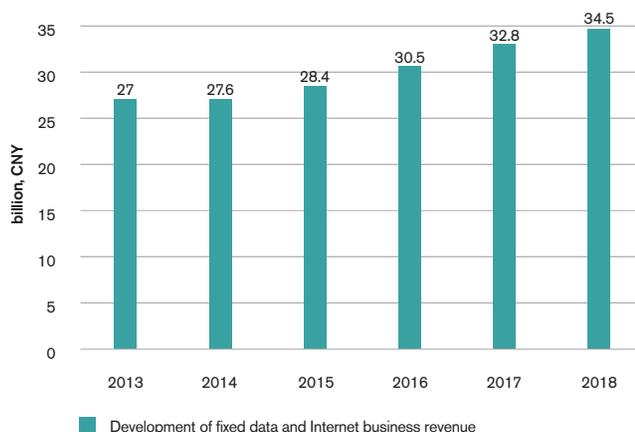
China's e-commerce platform pattern has evolved into a new stage with the emergence of new business models. After several years of high-speed growth, the mobile shopping market growth rate started to slow down in 2016 and the e-commerce Monthly Active Users (MAU) increment also decreased. At

the end of 2016, Alibaba launched a new retail concept, leading e-commerce enterprises to enter the offline market. At present, Alibaba has emerged into a relatively mature operational mode. In addition to continuous increases in the variety of goods and services offered and improvements in logistics and after-sales services, e-commerce enterprises are also actively expanding their cross-border online shopping, developing rural e-commerce, and providing maternal and child medical care, home decoration, local living services and other services to consumers. SMEs have joined the platform, and market segment competition is intense.

Key segments of the e-commerce market, in particular B2C transactions in rural areas and cross-border transactions, are expected to continue to grow. The collection and analysis of user data, particularly through use of artificial intelligence techniques to mine “big data” to glean insights into consumer behaviour, is an important and growing market.

The rapid growth of e-commerce is inseparable from the development of internet software and hardware, as well as other infrastructure. In 2018, revenue from fixed data and internet services reached US\$ 34.5 billion, with a period average of US\$ 32.6 billion (Figure 2). Revenue from mobile data and internet services reached

**Figure 2: Revenues from fixed data and internet businesses in China have increased sharply**



**Source:** Ministry of Industry and Information Technology of the People's Republic of China (billion CNY), <http://www.miit.gov.cn/n1146312/n1146904/n1648355/c6633265/content.html>.

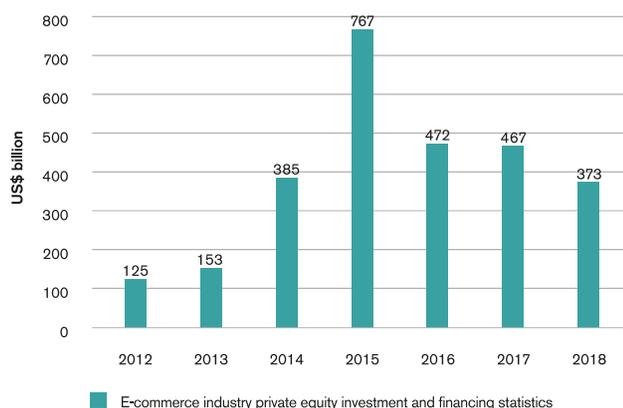
US\$ 100.95 billion, and accounted for 46.6 per cent of total telecom revenue (Shen, 2016).

The use of mobile phones has risen sharply. As of September 2019, about 1.6 billion mobile phone subscriptions

had been registered in China.<sup>3</sup> However, the increase in the share of the population using a mobile phone is expected to slow.

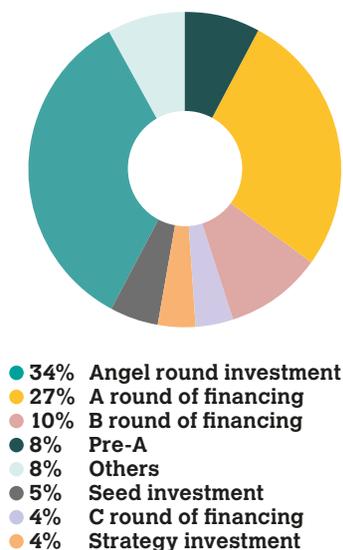
Firms involved in e-commerce have absorbed considerable equity

**Figure 3: Financing of e-commerce firms**



**Source:** "E-commerce industry private equity investment and financing statistics: China mobile internet industry private equity investment and financing pattern analysis", China Business Industry Research Institute, 2019, available at: <https://www.askci.com/news/chanye/20190722/1129101150117.shtml>.

**Figure 4: Forms of equity investment in e-commerce firms, 2018**



**Source:** "E-commerce industry private equity investment and financing statistics: China mobile internet industry private equity investment and financing pattern analysis", China Business Industry Research Institute, 2019.

investment and other forms of financing. Total private equity investment and financing peaked at US\$ 767 billion in 2015, but had fallen to US\$ 373 billion by 2018 (Figure 3). The largest share of financing came from angel investors, followed by the A round of financing and the B round of financing (Figure 4).

## Characteristics of Chinese e-commerce

### 1. Industry distribution

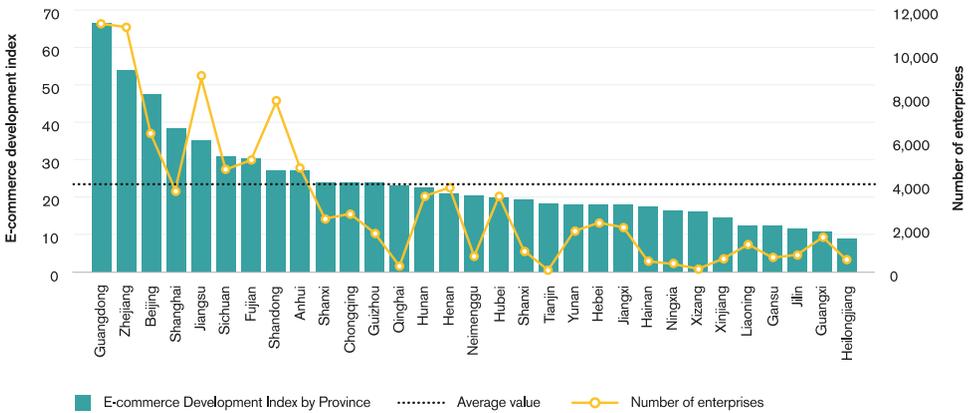
Of the CNY 85,597.78 billion in e-commerce purchases<sup>4</sup> in 2018, the bulk represented manufacturing (44.2 per cent) and wholesale and retail trade (39.1 per cent). The rest of the market consisted of information

services, including information transmission, software and information technology services (3 per cent) and leasing and business services (2.1 per cent). The gross merchandise volume (GMV) of China's e-commerce in 2018 totalled CNY 152,424.5 billion, again dominated by manufacturing (36.7 per cent) and wholesale and retail trade (22 per cent), followed by information transmission, software and information technology services (7.3 per cent), transportation, storage and postal services (3.4 per cent), and leasing and business services (2.8 per cent).<sup>5</sup>

### 2. Spatial distribution

The level of e-commerce development varies greatly across provinces in China. In 2018, e-commerce enterprises were mainly located in the eastern coastal areas, including the provinces of Beijing, Fujian, Guangdong, Jiangsu, Shandong and Zhejiang. The total number of enterprises engaged in e-commerce transactions was more than 5,000 per province, and Guangdong, Shandong and Zhejiang reached more than 10,000 each in 2018. From the coast to the inland, the development of e-commerce in the provinces of Anhui, Chongqing, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, Liaoning, Shanghai, Shanxi, Sichuan and Yunnan is only moderate, with the number of enterprises engaged in e-commerce transactions ranging from 1,000 to 5,000 per province. The development of e-commerce in the vast central and western regions and parts of the northeast provinces is limited, with the number of enterprises engaged in e-commerce transactions below 1,000 per province. On the whole, the level of e-commerce development declines as one moves

**Figure 5: An index of the development of e-commerce across provinces is closely related to the number of firms, 2017**



**Source:** 2017–2018 China E-commerce Development Index Report.

from east to west, which is closely related to the level of economic development and degree of marketization in each region.

The number of firms is not a very precise indicator of the potential of the e-commerce market. An index has been constructed to measure the level of e-commerce development in each province, taking into account the scale, growth potential, market penetration and supporting environment. According to this e-commerce development index, Guangdong, Zhejiang, Beijing, Shanghai and Jiangsu have had the highest level of e-commerce development for some time. While each province's ranking in the e-commerce development index is closely associated with the number of enterprises engaged in e-commerce transactions, the ordering of provinces according to these two indicators of e-commerce development is not identical. For example, in 2017, Shanghai was ranked fourth according

to the e-commerce development index, but ninth according to the number of firms engaged in e-commerce. In 2017, the e-commerce development indexes of nine provinces were above the average, and the indexes of two more provinces were very close to the average (Figure 5).<sup>6</sup>

### 3. Platform distribution

New e-commerce platforms in China have emerged in recent years. Alibaba, JD.com and NetEase Koala are the major traditional e-commerce platforms, while WeChat, Pinduoduo and Xiaohongshu are promoting the use of social e-commerce, which has intensified competition for the traditional platforms. Alibaba has accounted for more than 90 per cent of traditional e-commerce transactions since 2014. The total turnover of Tmall products (owned by the Alibaba Group) reached CNY 2.13 trillion in 2018, accounting for the largest market share of China's e-commerce industry. Social e-commerce remains smaller, but its growth has been quite

rapid. WeChat transactions have increased seven times from 2014 to 2019, and Pinduoduo has doubled its sales since 2017. Xiaohongshu released e-commerce services on its platform for the first time in 2015, and its average annual turnover has increased by 100 per cent since then.<sup>7</sup>

### The central government's plan for the development of e-commerce

The Chinese government formulates a plan every five years to promote the development of e-commerce. Since 2006, there have been three five-year plans addressing e-commerce development, each emphasizing different issues.

#### 1. The characteristics and changes of the three five-year plans

The 11th five-year plan in 2007 put forward the strategic task of developing the e-commerce service industry for the first time. The plan defines e-commerce services to include web-based transaction services (web-based procurement, sales and related authentication, payment, credit investigation and other services), business outsourcing services (web-based product design, manufacturing, management and other outsourcing services) and information technology system outsourcing services (mainly web-based equipment rental, data hosting,

information processing, application systems, technical consulting and other outsourcing services).<sup>8</sup>

First, the 11th five-year plan clearly emphasizes the construction of public e-commerce service projects and promotes the formation and development of e-commerce service formats with third-party platform services (Mao, 2007). The plan urges government departments to make full use of specialized third-party e-commerce service platforms to outsource information processing, data hosting, application systems and other information technology applications.

These efforts should help to establish stable and large-scale demand for such services. Second, the 11th five-year plan emphasizes the importance of popularizing e-commerce applications to attract greater involvement by SMEs and consumers (Qiongni, 2014). The plan urges SMEs to use third-party e-commerce service platforms, comprehensively implement outsourcing of various production and business activities, and strengthen their management and profitability. At the same time, the plan

encourages the development of new services for different levels of consumers, focusing on the development of mobile e-commerce including new technologies, new applications and new models, and further enhancing the market penetration of e-commerce applications (Wang, 2007).

**“The dollar value of e-commerce transactions in China has increased enormously over the past 20 years, supported by improved infrastructure, the rapid growth of mobile telephony and increased financing.”**

The 12th five-year plan emphasizes various efforts to boost the role of e-commerce in economic and social development. Key areas include research to accelerate the transformation of the e-commerce market, efforts to popularize and deepen e-commerce applications, creation of a strong institutional and social environment to support e-commerce security and improving the efficiency of resource allocation (Meng, 2017). The plan calls for pragmatic steps to support the healthy and orderly development of e-commerce, a focus on innovation and effectiveness, and development of technical standards.

The 13th five-year plan pointed out the importance of integrating traditional industries into e-commerce. According to the 13th five-year plan, e-commerce development should be led by “coordination and innovation” that promote the integration of e-commerce into traditional economic fields; steadily promote the integrated development of e-commerce in agriculture, manufacturing, logistics, related services and other sectors; and comprehensively drive the transformation and upgrading of traditional industries. Policies should strengthen the integrated development of e-commerce in manufacturing, agriculture and industry. Efforts should be made to support innovative enterprises (to demonstrate the value of innovations to other firms) and to assist manufacturing enterprises in

**“Key segments of the e-commerce market, in particular B2C transactions in rural areas and cross-border transactions, are expected to continue to grow.”**

the use of e-commerce platforms to expand marketing channels by means of market-based operations such as equity investment, risk compensation and interest rate discounts. The regions should encourage e-commerce platforms to cooperate with manufacturing enterprises to optimize the product supply chain and supporting services and to build a new generation of e-commerce platforms closely connected with manufacturing enterprises. Efforts also are required to promote innovations in O2O e-commerce applications and to facilitate the combination of online and offline trading, with an emphasis on innovations in business models and technology innovation. Finally, the regions should also create O2O e-commerce models and cultivate new formats for the provision of e-commerce services.

The 13th five-year plan provides for improvements in the legal framework for e-commerce, based on the three principles of simultaneous development and standardization, parallel competition and coordination. Compared with the previous exhortation of “standardizing in the development and promoting the development by standardizing”, the new development principle not only guarantees and maintains stakeholders’ rights, but also requires them to fulfil corresponding obligations and responsibilities. New ideas are required to promote development

**Table 1: Evolution of the five-year plans**

	11 <sup>th</sup> five-year plan	12 <sup>th</sup> five-year plan	13 <sup>th</sup> five-year plan
E-commerce applications	Popularize	Deepen	
E-commerce regulation		Standardize	Open
E-commerce platform	Construction	Upgrade	
Traditional industries			Integration

and standardization and to create a more open e-commerce business environment. The government also will continue to standardize development through innovative approaches to establish an open, fair and honest e-commerce market. Efforts to ensure competition and coordination will be designed to protect fair competition and minimize administrative interference in the market. At the same time, the government will promote the complementary and coordinated development of e-commerce and traditional industries, online and offline, as well as e-commerce activities in urban and rural areas. The government gives equal emphasis to openness and security, and encourages enterprises to actively participate in international market competition, so as to develop international e-commerce featuring convenient logistics, mutual recognition of standards, complementarity of production capacity and market sharing.

In general, three five-year plans have specific emphasis in regard to e-commerce based on different development periods. Because 2007 witnessed the construction

period of e-commerce development, the 11th five-year plan emphasized the construction of public e-commerce service projects and the importance of popularizing e-commerce applications. With the gradual popularization of e-commerce applications, the 12th five-year plan emphasized deepening e-commerce applications in order to improve the efficiency of resource allocation. The 13th five-year plan highlighted strengthening the integration of e-commerce and traditional industries and improving the legal framework for e-commerce.

The changes in the plans concentrate on four aspects over time (see Table 1). The 11th five-year plan proposed to construct the e-commerce platform, while the 12th five-year plan proposed its upgrade. The emphasis in the plans changed from popularizing e-commerce applications to deepening them over time. E-commerce regulation in the plans changed from emphasizing standardized principles to emphasizing open norms. Additionally, because e-commerce development has now entered the mature stage, the 13th five-year plan proposed the integration of traditional industries and e-commerce.

## 2. The value of the plans

The plans facilitate the upgrade of e-commerce platforms. The plans regard e-commerce platforms as a core to improve the efficiency of allocation of social resources, and they advocate for enterprises to take full advantage of the “internet +”. To illustrate, firms need to make full use of the internet, cloud computing, big data, mobile internet and other technologies, with the aim of constantly improving platform functions to make them more user friendly. E-commerce platforms should promote the integration of multiple resources in the industrial chain, including producers, traders, users, financial institutions, logistics agencies and technical service agencies; eliminate information barriers; optimize resource allocation; and realize operation coordination and optimization on the whole. By upgrading e-commerce platforms, firms could use the advantages of internet connectivity and resource integration to create more value.

**“Fast logistics is the foundation for the rapid development of China’s e-commerce.”**

The plans help to build a standardized service system. Standardization of product information and delivery processes is the basis for the efficient operation of e-commerce. However, China is relatively lagging in standardization of product information and delivery process, lacking a standard process for warehouse management, logistics distribution, financing management and contract management. Plans encourage enterprises to actively participate in the construction of e-commerce regulations and establish a real-name

system for the e-commerce market based on a unified social credit system. E-commerce enterprises take the five-year plans as guides, establish a traceability mechanism that includes online product transactions and offline service, and gradually develop standardized operations, professional management, standardized logistics and scientific supervision.

The plans are conducive to creating a benign and open e-commerce environment. The plans propose to optimize the governance environment of e-commerce, emphasizing the need to strengthen the construction of

e-commerce information infrastructure, and to implement effective supervision based on internet technology regulations and law. The development of e-commerce needs to reinforce industry guidance and create a healthy and open environment. The

development of e-commerce also needs to abide by the basic principles of equal emphasis on competition and coordination, adhere to the promotion of fair market competition and open development, prevent and suppress monopolistic and vicious competition, and establish an open, fair and honest market order through supervision.

The plans contribute to deepening the integration of traditional industries and e-commerce. Due to incomplete market competition and asymmetric information, enterprises are faced with four major difficulties in production and operation decisions – what to produce, how much to produce, for whom and how to produce. The plans proposed

that e-commerce firms may effectively solve the difficulties of what to produce, how much to produce and for whom by integrating online and offline transaction resources and creating an integrated ecosystem of production and distribution, including procurement, sales and logistics, etc. In order to solve the problem of how to produce, e-commerce enterprises need to further promote the integration of big data into the traditional industrial chain, including manufacturing, operation management and sales services. Through the sharing of knowledge and information, e-commerce enterprises may break down the boundaries between sectors and realize intensive production and the coordination of production, service, procurement and sales. The deep integration of the e-commerce and traditional industries facilitates the cultivation of modern online businesses and the upgrade of production.

### **The role of government in the development of e-commerce**

Government has the opportunity to play a leading role in the development of e-commerce in four areas.

1. The government promoted the development of the basic e-commerce infrastructure based on the development characteristics and realities of local enterprises.
2. The government helped facilitate the popularization of e-commerce. The primary task of government is to carry out a wide range of e-commerce training and popularization activities. In addition, government can guide the spontaneous formation of business associations and other non-governmental organizations within the region to promote the popularization, dissemination and penetration of e-commerce awareness, knowledge and skills (Deng, 2013).
3. The government can take steps to support production and processing supply chains, find and cultivate modern online businesses and assist with operation and marketing links. A key principle is to encourage trials and innovation, which allows for mistakes and failures.
4. The government should provide policy and legal guarantees for the development of e-commerce and help solve data security and related problems.

Local governments also play an active role in boosting the development of e-commerce. Zhejiang province, for example, is a leader in the field of e-commerce in China, and it vigorously promotes the e-commerce applications of industrial enterprises and encourages SMEs to rely on third-party e-commerce platforms to carry out online sales. Zhejiang also encourages qualified enterprises to develop online brands and supports the rapid establishment of online retail and distribution systems for industrial products that suit the characteristics of Zhejiang industry.

### **Lessons from China's experience of rapid e-commerce development**

#### *1. Fast logistics*

Fast logistics is the foundation for the rapid development of China's e-commerce. There are many logistics companies in China's e-commerce

market, such as Shunfeng, Yuantong and Yunda. China's goods delivery systems consist of a "backbone transportation network" with high-speed rail, highways and civil aviation; a "general mainline network" with high-grade highways, ordinary speed railways and inland waterways; and a "service network" with rural roads and branch railways.<sup>9</sup> Developing countries should strengthen transport infrastructure and promote competition among various courier companies to improve the speed and quality of their logistics services.

### 2. Convenient platform

The availability of a user-friendly internet platform is a major feature of the rapid development of China's e-commerce. Consumers can easily search for various products and compare their function and price through the platform. Various means of payment are available, including through online commercial banks, Alipay and WeChat. Upgrading e-commerce shopping platforms is essential to facilitating consumers' online purchases.

### 3. Regulating market

The rapid development of China's e-commerce also benefited from regulating e-commerce, based on international agreements. China continues to fulfil the Agreement on Information Technology proposed at the WTO Ministerial Conference in Singapore in 1996. In addition, China has participated in the negotiation of the Information Product Agreement, and China may participate in the negotiation of the e-commerce agreement. Accordingly, developing countries should actively join the WTO's agreement on e-commerce, which will facilitate the

entry of their information technology products in international markets and promote the development of e-commerce.

## Endnotes

- <sup>1</sup> Research report on the development and market prospects of China's e-commerce industry in 2019, China Business Industry Research Institute, available at <https://wk.askci.com/details/410b8e0556bd4223b5085696e00028d0/>
- <sup>2</sup> China E-commerce Development Report 2018–2019, 2019 Global Electronic Commerce Conference, Xiamen, 8 September 2019.
- <sup>3</sup> See <https://www.statista.com/statistics/278204/china-mobile-users-by-month/>
- <sup>4</sup> E-commerce purchases here refer to the total goods and services purchased by enterprises through online orders.
- <sup>5</sup> Data from National Research Network Database, available at: [data.drcnet.com.cn](http://data.drcnet.com.cn) (accessed 13 January 2020).
- <sup>6</sup> *Ibid.*
- <sup>7</sup> "WPP China Social E-commerce White Paper", 2019.
- <sup>8</sup> Liu, Guiqing, 2007, Highlights of the 11th five-year plan for the development of e-commerce Shanghai Business (08): 28-29.
- <sup>9</sup> "Backbone transportation network", "general mainline network" and "service network" refer to three types of logistics in China based on transport infrastructure developments and geographical features. "Backbone transportation network" is the most common one, followed

by “general mainline network” and “service network”.

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## Comments



**QING YE\***

E-commerce transactions, including the cross-border ones, have been growing rapidly and have transformative effects on the global economy. As Chapter 6 indicates, China's e-commerce transactions have seen a tremendous growth in the past 20 years. In fact, China has become one of the largest e-commerce markets in the world. The global value of e-commerce reached US\$ 29 trillion in 2017, which corresponds to 13 per cent growth over the previous year, according to estimates by the United Nations Conference on Trade and Development (UNCTAD, 2019b). China's total e-commerce sales value was estimated at US\$ 1.9 trillion in 2017, making it the third largest e-commerce market after Japan and the United States. However, according to UNCTAD's Digital Economy Report 2019, China's total e-commerce sales value in 2017 represented only 16 per cent of its gross domestic product (GDP) (UNCTAD, 2019a). This share was nearly three times less than in the United States and four times less than in Japan. It indicates China's e-commerce market still has tremendous potential to grow, particularly in business-to-business (B2B) e-commerce and cross-border e-commerce.

Statistics typically include both domestic and international transactions, so it is important to single out cross-border

e-commerce. This chapter discusses China's e-commerce growth in general; China's cross-border e-commerce development could also be included and further illustrated. In fact, cross-border e-commerce in China began to grow significantly in 2011 and has become an important part of Chinese foreign trade. Cross-border e-commerce transactions, particularly in business-to-consumer (B2C) terms, encompass e-transactions, e-payments and logistics. There are a mass of cross-border e-commerce market players in China, including e-platforms, e-payment operators, e-vendors, warehousing operators and express shippers, which jointly operationalize massive online transactions and offline deliveries on a day-to-day basis. According to Chinese Customs' statistics,<sup>1</sup> the value of China's cross-border e-commerce trade in goods was around CNY 134.7 billion in 2018, with an annual growth rate of 20 to 30 per cent for the period from 2013 to 2018. It is noteworthy that exports took the majority share of China's total cross-border e-commerce transactions in goods at the level of 83.1 per cent in 2015; however, imports surpassed exports in less than three years and reached 58 per cent of the total share in 2018.

Cross-border e-commerce impacts economies in different ways. For example, it: (i) enables diversified

\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.

products from all over the world to be supplied to consumers; (ii) encourages small and medium-sized enterprises (SMEs) to participate in international trade; (iii) improves economic competitiveness; (iv) spurs innovation (e.g. many Chinese e-platforms are utilizing “big data” to analyse and monitor cross-border e-commerce transactions); and (v) creates jobs – there are over 2 million people working in the field of e-commerce in China (WCO, 2017).

Chapter 6 divides China’s e-commerce development into four phases – germination, growth, accelerate and mature – that follow the same logic as that of other scholars.<sup>2</sup>

Differences mainly occur when defining the later stages; if marked by milestones in government policies, later stages could also be classified as “The Standardization Stage” and “The Globalization Stage” (Yue, 2017), which is compatible with Chapter 6’s government policy discussion. The Standardization Stage covers the period from

2008 to 2014, when key policies to promote e-commerce development in China were formulated and regulatory policies for China’s e-commerce had launched by its end. The Globalization Stage has developed with the significant growth of China’s cross-border e-commerce. In June 2015, the Chinese government rolled out its strategy to foster cross-border e-commerce in a document titled “Guiding Opinions to Promote Healthy and Rapid Development of Cross-Border E-commerce”,<sup>3</sup> which encompassed the following measures:

- encouraging enterprises to engage in international trade through e-commerce;
- strengthening major e-platforms;
- enhancing customs and quarantine procedures;
- improving cross-border payment services;
- providing financial support to e-commerce companies; and
- promoting the functions of trade associations.

**“E-commerce transactions, including the cross-border ones, have been growing rapidly and have transformative effects on the global economy.”**

Other initiatives include encouraging e-commerce cooperation with countries along the Belt and Road, increasing the efforts to support Pilot Free Trade Zones to deepen reform and opening up and facilitating cross border e-commerce. At the local level, municipal governments in some cities are encouraged to explore ways in which they can integrate

different administrative resources and provide comprehensive services in order to promote cross-border e-commerce. For example, Zhejiang Province has established a cross-border e-commerce work mechanism, with Hangzhou and Ningbo as the main pilots, for a management system and set of rules on global cross-border e-commerce, especially a “single window” for logistical and legal matters.

Critical lessons learned from China’s experience of rapid e-commerce

development can be summarized as follows: (i) creating well-designed national strategies and roadmaps for boosting the development of e-commerce; (ii) refraining from measures that may stifle the development of e-commerce, such as streamlining the administrative procedures for taxing related businesses and enhancing services; (iii) providing a more conducive business environment based on trust, fostering entrepreneurship and innovation, and providing access to financing for digital start-ups; and (iv) strengthening the protection of intellectual property in the cross-border e-commerce industry and cracking down on counterfeiting and infringement.

Most of the debate on digitalization and development has concentrated on the extent to which countries have affordable access to various technologies and whether the technologies benefit each country. The digital divide remains a real concern to many developing countries, particularly least-developed countries (LDCs), and many face challenges of drawing benefits from vibrant digital trade owing to the lack of adequate digital capacities. Further studies on the policy implications of China's e-commerce development can help developing countries to engage in and benefit from the expansion of e-commerce. In practice, the following key policy areas need to be addressed when formulating national e-commerce strategies: information and communications technology (ICT) infrastructure, trade logistics, legal and regulatory frameworks, online payment solutions, digital skills, public e-procurement and stakeholder participation in policy formulation and implementation (OECD and WTO, 2017, Chapter 7).

Improving access to reliable and affordable ICT infrastructure is essential for e-commerce to thrive. Strengthening logistics and transport infrastructure is imperative for both domestic and cross-border e-commerce facilitation. Poor logistics remain a barrier to e-commerce in many developing countries, and investment in infrastructure is often much needed. The solution may partly lie in providing direct government funding in infrastructure investment or adopting private-public partnerships for the deployment of networks, as China did in its e-commerce development growth phase. Taking the best practice from the globalization phase of China's e-commerce development, policymakers could explore and harness relevant opportunities to embrace cross-border e-commerce and create conditions, procedures and resources that enable cross-border e-commerce to thrive.

On a global scale, international cooperation plays an important role. In certain markets, regulatory requirements regarding cross-border e-commerce fail to keep up with the dynamics and trends of e-commerce in terms of their efficiency and effectiveness, posing substantial demands for international cooperation on trade facilitation, customs revenue collection, cybersecurity, etc. Existing trade facilitation solutions, such the WTO Trade Facilitation Agreement (TFA), include provisions that aim to modernize border clearance procedures and streamline processes. Such efforts become even more important in the evolving development of cross-border e-commerce. Implementation of the TFA will improve customs procedures and formalities so that shipping time can be reduced, which is critical for small parcels sent

from SMEs on the cross-border e-commerce platforms.

When considering legal frameworks, a key question for policymakers is to ascertain whether existing laws and regulations allow for a level playing field between e-commerce and regular trade. This particularly applies to physical goods that can be digitized and sent across borders digitally. Since the WTO General Council adopted the Work Programme on Electronic Commerce in 1998, WTO members have periodically renewed, on a provisional basis, the commitment not to apply customs duties on electronic transmissions. Other cross-cutting issues include an adequate legal and regulatory framework on cross-border data flow, cybersecurity, competition laws and intellectual property rights. To facilitate cross-border e-commerce, it is important to develop a global regulatory framework that supports the growth of digital trade for all. This will require an ongoing dialogue and a collaborative effort among all countries, from all regions of the world and all levels of development.

## Endnotes

<sup>1</sup> See <http://english.mofcom.gov.cn/article/newsrelease/press/201902/20190202837696.shtml>

<sup>2</sup> Mao and Zhao (2015) present in six phases: germination, growth, accelerate, mature, outbreak and transformation. From the perspective of industry economic theory cycle, Wang (2017) identified China's e-commerce evolution in four periods: germination, growth, eruption and integration.

<sup>3</sup> See <https://www.chinalawupdate.cn/wp-content/uploads/sites/206/2015/06/E-Commerce-guidelines.pdf>

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Chapter 7

**Engaging in the digital economy: issues and agenda in the quest to adopt Indonesia's e-commerce roadmap**

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## Abstract

The study explores structural and practical issues following the adoption of Indonesia's e-commerce roadmap (2017–2019) and its implications for the future of the country's digital economy. Two major categories of issues are examined in order to identify problems and challenges confronted by related stakeholders. The first category, i.e. the structural one, relates to the larger governance context of the country's digital economy to which e-commerce activities are attached. The governance context includes the legal and regulatory context, the institutionalizing mechanism and the implementing phases, which involve socio- and politico-economic interplays among its key players. The second category represents practical dimensions, which involve questions on the mitigation of and adaptation to concepts, models and practices in the digital economy. Indonesia's position on the moratorium on e-commerce and the local initiatives on digital economy are presented to illustrate mitigation efforts by related stakeholders in areas where disagreements and negotiations on certain structural and practical policy issues have arisen, i.e. on Indonesia's position on the World Trade Organization (WTO) moratorium on e-commerce and local initiatives (such as the ones in Yogyakarta) to develop a digital economy.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

The importance of e-commerce has been indicated in various international policy contexts, particularly under the existing WTO Work Programme on Electronic Commerce since its establishment following the adoption of the Declaration of Global Electronic Commerce at the 2nd WTO Ministerial Conference (Geneva, May 1998). E-commerce is defined as the production, distribution, marketing, sale or delivery of goods and services by electronic means (WT/L/274, 30 September 1998). The scope of e-commerce includes good and services transacted or exchanged both domestically and internationally.<sup>1</sup>

International e-commerce services are mainly taken in the form of Mode 1 and 2 of the General Agreement on Trade in Services (GATS) involving the cross-border supply of services that could include: (i) digital products (music, videos, apps and games) downloaded and paid online; or (ii) services transactions completed online between a consumer and a supplier located in different countries. Traditional commerce includes all four modes of supply (as defined under the GATS) not necessarily involving online transactions as a major feature (e.g. international shipping, international tourists, companies with foreign investments supplying a service to local consumers or the temporary movement of a service supplier to another country to supply a service) (Tuthill, 2016).

**“For emerging economies, e-commerce can contribute to the reduction of transaction costs along the commodity chain.”**

For emerging economies, e-commerce can contribute to the reduction of transaction costs along the commodity chain. This occurs particularly in sectors where global buyers have created production and distribution systems to meet the requirements without themselves taking ownership of production or distribution facilities (Humphrey et al., 2003, p. 29). Open foreign investment policy has contributed to more flexible market encounters between domestic and international market players (Tan and Ouyang, 2002). The conduct of e-commerce also involves continuous interplay between domestic and international policy contexts. Inter-firm networking and the coordination of international trade are important systemic international factors.

Previous studies have provided sufficient ground to locate the Indonesian case within the available analytical framework, theoretical assessment and empirical experience of other countries. This study adopted the “inter-actionist” approach<sup>2</sup> by Molla and Licker (2005) to understand the contextual and organizational factors that affect e-commerce adoption. This approach is articulated in the Perceived eReadiness Model (PERM), which is built on two constructs: Perceived Organizational eReadiness (POER) and Perceived External eReadiness (PEER). POER indicates innovation imperative attributes, the commitment of an organization’s managers and organizational imperative attributes such as

resources, processes and business infrastructure. Meanwhile, PEER represents environmental imperative attributes. The model allows an analysis that connects the organizational adaptive capability shaped by culture and the broader environmental settings (including national policy and international competitiveness) (Molla and Licker, 2005, p. 882).

National practices contribute to a unique combination of state leadership and market mechanism that shapes opportunities and constraints for e-commerce beneficiaries. The role of government is considered very crucial in providing the overarching national framework that allows e-commerce entrepreneurs to expand their business with sufficient degrees of risk management especially in developing countries (Durbhakula, Vijay and Kim, 2011) and in the legal and policy environment that ignites substantial impacts (such as internet taxation, encryption and digital signature, online patent and copyright protection, network security and privacy safeguards) (Zhu, 2009). Examining how e-commerce operates in the context of a national governance framework, this study discusses the current governance landscape that provides an overarching framework for government leadership in e-commerce in Indonesia and the contemporary issues that emerge in the public debate as regards to the practical and structural dimensions of the adoption of an e-commerce roadmap.

## Indonesia's e-commerce roadmap 2017–2019

The Government of Indonesia launched Presidential Regulation (Peraturan Presiden No. 74/2017 (Perpres No. 74/2017)) on the Indonesia E-Commerce Roadmap 2017–2019. Enacted in August 2017, the roadmap highlights eight main points in the country's e-commerce development: (1) funding; (2) taxation; (3) consumer protection; (4) education and human resources; (5) logistics; (6) communication; (7) cybersecurity; and (8) management. Key ministries and institutions, including the Ministry of Communication and Informatics (MOCI), the Central Bank (Bank Indonesia), the Coordinating Ministry of Economic Affairs (CMEA) and the Ministry of Finance (MOF), were involved in the formulation of this regulation.<sup>3</sup> Table 1 outlines the focal points and featured plans and programs outlined in the roadmap.

Challenges in implementing the roadmap came from introducing implementing provisions (Government Regulation (Peraturan Pemerintah (PP) on trading transactions over electronic systems). Three issues are

currently unresolved: (i) e-commerce data collection; (ii) local e-commerce participants' empowerment; and (iii) the definition on digital goods/products and services.<sup>4</sup> The resolution of the issues is subject to a complex coordination mechanism among different state ministries and agencies/institutions, harmonization of their respective roles/functions and legal administration.

**“E-commerce also involves continuous interplay between domestic and international policy contexts.”**

**Table 1: Indonesia's e-commerce roadmap focal points and plans and programs**

Focal points	Featured plans and programs
<b>Funding</b>	<ul style="list-style-type: none"> <li>• Small Businesses (SMEs) Credit (Kredit Usaha Rakyat (KUR)) for Platform Developer Tenants</li> <li>• Grant for Business Incubator of Start-up Partners</li> <li>• USO Fund to Digital SMEs and Start-up E-commerce Platform</li> <li>• Angel Capital</li> <li>• Seed Capital in the Forms of Venture Capital</li> <li>• Crowd Funding</li> <li>• DNI Opening</li> </ul>
<b>Taxation</b>	<ul style="list-style-type: none"> <li>• Tax Redemption for Local Investors who Invest in Start-ups</li> <li>• Simplification in License and Taxation Procedures for E-commerce Start-up whose Profit Is Below IDR 4.8 Billion/year</li> <li>• Tax Regulations Equality for All E-commerce Entrepreneurs</li> </ul>
<b>Consumer protection</b>	<ul style="list-style-type: none"> <li>• Government Regulation on Trading Transaction using Electronic Systems</li> <li>• Regulatory Harmonization</li> <li>• Payment System for Government Goods/Services Trading via E-commerce</li> <li>• Progressive National Payment Gateway (NPG)</li> </ul>
<b>Education and human resources</b>	<ul style="list-style-type: none"> <li>• E-commerce Awareness Campaign</li> <li>• National Incubator Program</li> <li>• E-commerce Curriculum</li> <li>• E-commerce Education for Consumers/Players</li> <li>• Law Enforcement</li> </ul>
<b>Logistics</b>	<ul style="list-style-type: none"> <li>• Utilization of National Logistics System (Sislognas)</li> <li>• Local Courier Company Empowerment</li> <li>• SMEs Logistics Data Development</li> <li>• Logistics Development from Village to City</li> </ul>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Communication Infrastructure via Broadband Network Construction</li> </ul>
<b>Cybersecurity</b>	<ul style="list-style-type: none"> <li>• National System Supervision Arrangement in E-commerce Transaction</li> <li>• Cyber Crime Public Awareness</li> <li>• Standard Operating Procedure (SOP) in the Arrangement related to Consumer Data Records</li> <li>• Certification for Consumer Data Security</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>• Establishment of Executing Management for Monitoring and Evaluating E-commerce Roadmap Implementation</li> </ul>

Source: Majalah ICT No. 50 (December 2016).

## Indonesia's e-commerce current situation and state of play

Implementation of the roadmap has reached a new stage with the enactment of Government Regulation (PP) No. 18 (25 November 2019), which offers implementing provisions on trading transactions over electronic systems (Perdagangan Melalui Sistem Elektronik (PMSE)). The regulation covers three major issues relating to e-commerce: (i) data collection; (ii) the

empowerment of local e-commerce participants; and (iii) the definition on digital goods/products and services. Recent e-commerce policy dynamics indicate that data queries are a major aspect to be integrated in the adoption of the national roadmap given the ongoing coordinating mechanism that evolves across government agencies. Additionally, the roles of key stakeholders need to be strengthened to mitigate the anticipated structural and practical policy issues in Indonesia's e-commerce governance.

## E-commerce and digital economy in Indonesia: data queries

Under the roadmap, two key parties contribute to e-commerce and digital economy data collection: (i) the Indonesian E-commerce Association (IdEA),<sup>5</sup> which is the main partner/targeted agency of the central government's statistics agency (i.e. the Central Statistics Bureau or Badan Pusat Statistik (BPS)) for data recording (as of January 2018), including statistics on e-commerce transactions, local and foreign investments, transactions, payment methods, employees and technologies; and (ii) the Indonesian Internet Service Providers Association (Asosiasi Penyelenggara Jasa Internet Indonesia (APJII)), which provides surveys on internet users and uses (for example, it conducted surveys on business sectors in 2013; user profiles in 2014; the device, network and apps (DNA) ecosystem in 2016; and penetration and user behaviors in 2016 and 2017).

APJII surveys offer a basic estimation and overview of the Indonesian digital landscape over the past five years. As of 2017, Indonesia had more than 143 million internet users, with the highest penetration rate among 34- to 54-year-olds and 19- to 33-year-olds, who comprise 30 per cent and 49 per cent, respectively, or a combined 79 per cent of the total users. The highest penetration rate, however, is among 13- to 18-year-olds, who comprise 75 per cent of the total users. Ninety per cent of internet users in the country use smartphones, with 88 per cent of users spending time on apps on a daily basis (on average, using 40 apps and having 80 apps installed on their phones).<sup>6</sup>

Indonesia's e-commerce sales have made up only 3.1 per cent (2017 figure, as recorded by GDP Venture 2018) of total retail sales.<sup>7</sup> Approximately 65 per cent of e-commerce users prefer to use cash on delivery (COD), while the rest prefer to use debit or credit cards. E-commerce or digital buyers make up 10.6 per cent of Indonesia's total population (of approximately 260 million people). There are three major factors that have driven Indonesian digital buyers: (i) payment options (which they consider to be fast and secure); (ii) deals (which include special price offers); and free home delivery service. The average time spent on e-commerce or digital shopping is 90 minutes per month, ranking second globally. Indonesia is also ranked second in terms of digital travel growth in the Asia Pacific region, first in mobile gaming revenue in Southeast Asia, and first in growth of fin-tech-related apps worldwide (with a 200 per cent increase from 2016 to 2017). MOCI, CMEA and MOT are in the process of selecting an agency to serve as an integrated data centre for data-collection activities.

## The roadmap: key stakeholders and structural and practical policy issues

The analytical frameworks of POER and PEER, in conjunction with the roadmap's eight focal points, allowed delineation of issues and agenda to be taken into account by the Indonesian government in light of the roadmap implementation (see Table 2). Policy issues categorized under "practical" focal points refer mainly to questions relating to POER at the firm level. Policy issues under "structural" focal points concern PEER, which are linked to governance, regulation, implementation aspects and the role of government.

**Table 2: Mapping of key stakeholders and structural and practical policy issues in Indonesia's e-commerce roadmap 2017–2019**

Focal points: key stakeholders	
<p><b>Funding</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: Coordinating Ministry of Economic Affairs (CMEA), Ministry of State Owned Enterprises (MSOE) and Ministry of Communications and Informatics (MOCI) (as lead agencies), Ministry of Cooperatives and Small Medium Enterprises (MCSME), Otoritas Jasa Keuangan/Financial Services Authority (OJK/FSA), Bank Indonesia/Central Bank (BI), Ministry of Trade (MOT), Ministry of Industry (MOI), Ministry of Research and Higher Education (MRHE), Ministry of Finance (MOF), Badan Ekonomi Kreatif/Creative Economy Agency (BEKRAF), MNDP/Bappenas (Ministry of National Development Planning/Badan Perencanaan Pembangunan Nasional (National Development Planning Agency))</li> <li>• Private/firm associations: Indonesian E-Commerce Association (IdEA), Asosiasi Penyelenggara Jasa Internet Indonesia/Indonesian Association of Internet Service Providers (APJII), State Owned Enterprises (SOEs), venture/angel capital associations</li> <li>• Academia/non-governmental organizations: media, universities</li> </ul>	
<p><b>Taxation</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: MOF, MOT and CMEA (as lead agencies), MCSME, BEKRAF and MOCI</li> <li>• Private/firm associations: IdEA</li> <li>• Academia/non-governmental organizations: media</li> </ul>	
<p><b>Consumer protection</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: MOT, CMEA, MOF and BI (as lead agencies), Ministry of Labour and Human Resources (MLHR), Ministry of State Secretariat (MSS), MNDP/Bappenas, MOCI, Badan Pusat Statistik/Central Statistics Agency (BPS), Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah/Government Goods and Services Procurement Policy Agency (LKPP), Otoritas Jasa Keuangan/Financial Services Authority (OJK/FSA)</li> <li>• Private/firm associations: IdEA</li> <li>• Academia/non-governmental organizations: Yayasan Lembaga Konsumen Indonesia/Indonesian Consumer Agency Foundation (YLKI) and media</li> </ul>	
<p><b>Education and human resources</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: MOCI, MOT, BEKRAF, Ministry of Research and Higher Education (MRHE) and Ministry of Education and Culture (MEC) (as lead agencies), MCSME, MSOE, Lembaga Administrasi Negara/State Administration Institute (LAN) and MOI</li> <li>• Private/firm associations: IdEA, APJII and Kamar Dagang dan Industri Indonesia/Indonesia Chamber of Commerce and Industry (KADIN)</li> <li>• Academia/non-governmental organizations: YLKI, media and universities</li> </ul>	
<p><b>Communication infrastructure</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: MOCI (as a lead agency), Coordinating Ministry for Political, Legal and Security Affairs (CMPLSA), MNDP/Bappenas</li> <li>• Private/firm associations: APJII</li> <li>• Academia/non-governmental organizations: media and universities</li> </ul>	

	Structural/governance (PEER)	Practical/firm level (POER)
	<ul style="list-style-type: none"> <li>• Scheme of funding and SMEs loan financing (e.g. on Kredit Usaha Rakyat (KUR) distribution, banks/non-banks as KUR distributors)</li> <li>• Scheme of grants and subsidies for business incubators and start-ups, including the ones originated from SOEs and private firms' corporate social responsibilities</li> <li>• Alternative funding and schemes of grants and subsidies for digital economic ecosystem, including by utilization of: (1) Universal Service Obligation funding and public services agency as Universal Service Obligation fund distributors for digital SMEs and start-ups, (2) angel capital and seed capital, (3) crowd funding, and by opening up Daftar Negatif Investasi/Investment Negative Lists</li> </ul>	<ul style="list-style-type: none"> <li>• E-commerce SMEs and start-ups encounter initial difficulties when they begin in the registration phase of accessing KUR due to business licensing processes and lack of collateral assets, thus a solid funding scheme to face such difficulties is a must</li> <li>• Media and universities could serve as catalysts and facilitators to meet the needs of start-ups and early-stage incubators, SOEs and large e-commerce firms, e.g. in the form of workshop series, trainings and installation of co-working spaces where proposed scheme of grants and subsidies are collaboratively designed and implemented</li> </ul>
	<ul style="list-style-type: none"> <li>• Simplified tax procedures for e-commerce players with turnover below IDR 4.8 billion (approximately US\$ 330,000 with an exchange rate of US\$ 1 = IDR 14,500) per year, plus additional tax incentives</li> <li>• Registration procedures for e-commerce players via issuance of Transaksi Perdagangan Melalui Sistem Elektronik/Trade Transaction via Electronic System (TPMSE) identity numbers (or e-commerce licensing) by MOT</li> <li>• Tax parity principles and regulation for e-commerce players, both local and foreign</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulties relating to classification of e-commerce goods/services that affect licensing processes by e-commerce players as changes of e-commerce goods/services trade patterns are common</li> <li>• Ease of access to logistics and increasing variety of virtual payment systems cause difficulty in imposing taxes on e-commerce transactions, thus creating certain challenges not only for tax agencies but also for e-commerce players</li> </ul>
	<ul style="list-style-type: none"> <li>• Government Regulation on TPMSE</li> <li>• Harmonization of regulations related to TPMSE for classification of e-commerce players, electronic certification, accreditation process, payment mechanism policy, e-commerce consumers' and players' protection, online dispute settlement, adoption of e-commerce consumer protection principles, application of e-commerce information system</li> <li>• Development of Progressive National Payment Gateway (NPG), especially for electronic retail payment</li> </ul>	<ul style="list-style-type: none"> <li>• As there is not yet a specific law regulating e-commerce consumer protection in Indonesia, reference shall be made to the existing law regulating general consumer protection, i.e. Law No. 8 (1999)</li> <li>• In terms of transparency, LKPP's best practice on having an online government procurement procedures and database could set a model to emulate and adopt</li> <li>• NPG shall offer an explicit link to the proposed cybersecurity schemes/programs under the roadmap</li> </ul>
	<ul style="list-style-type: none"> <li>• Awareness campaign/education for e-commerce SMEs, consumers and ecosystems, including informal programs such as Harbolnas</li> <li>• Training of Trainers (ToT) for public officials related to e-commerce and TPMSE</li> <li>• Incubator programs for e-commerce start-ups</li> <li>• Formal education for e-commerce talent</li> <li>• Development of TPMSE facilitators</li> </ul>	<ul style="list-style-type: none"> <li>• Indonesia ranks 73rd (out of 139) in the networked readiness index (World Economic Forum, 2017), so e-commerce participants (and also other related stakeholders, including YLKI representing consumers) encounter quite a significant challenge in terms of the country's overall e-commerce ecosystem preparedness and how each participant mitigates such a challenge</li> </ul>
	<ul style="list-style-type: none"> <li>• Enhancement of communication infrastructure, particularly internet speed, networks and security</li> <li>• Broadband internet infrastructure, free domains for TPMSE growth</li> </ul>	<ul style="list-style-type: none"> <li>• The existing infrastructure, which is insufficient, presents a major challenge</li> <li>• Due to its geographical conditions as an archipelagic country, Indonesia has a significant gap in communication infrastructure networks (ranking 105 of 139)</li> </ul>

**Table 2: Mapping of key stakeholders and structural and practical policy issues in Indonesia's e-commerce roadmap 2017–2019 (continued)**

Focal points: key stakeholders	
<p><b>Logistics</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: CMEA and MSOE (as lead agencies), Ministry of Transportation (MOTR), MOF, MOT, MOCI, Ministry of Public Works and Housing (MPWH), BI, OJK/FSA, Ministry of Agriculture (MOA), MOI, MCSME, Ministry of Villages, Development of Disadvantaged Regions, and Transmigration</li> <li>• Private/firm associations: PT Pos Indonesia, National Logistics Association</li> <li>• Academia/non-governmental organizations: media and YLIK</li> </ul>	
<p><b>Cybersecurity</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: CMPLSA and MOCI (as lead agencies), CMEA, MOF, BI, MOT, OJK/FSA, police headquarters</li> <li>• Private/firm associations: IdEA, APJII</li> <li>• Academia/non-governmental organizations: YLKI, media and universities</li> </ul>	
<p><b>Operational management of e-commerce roadmap</b></p> <ul style="list-style-type: none"> <li>• Governmental agencies: CMEA and MOF (as lead agencies), MOCI and MNDP/Bappenas</li> <li>• Private/firm associations: IdEA, APJII</li> <li>• Academia/non-governmental organizations: media and universities</li> </ul>	

**Source:** Compiled by authors from various sources.

	Structural/governance (PEER)	Practical/firm level (POER)
	<ul style="list-style-type: none"> <li>• Enhancement of e-commerce-based logistics industry via Sistem Logistik Nasional (Sislognas)/ National Logistics System blueprint and electronic data standardization/exchanges under Sislognas for e-commerce</li> <li>• Outsourcing of logistics facilities for e-commerce SMEs</li> <li>• Capacity building for local and national logistics service providers, including PT Pos Indonesia revitalization, modernization and restructuring</li> <li>• Development of "village to city" logistics system via application of electronic-based trade for fishery, agriculture, etc.; e-commerce education; IT-based local/regional distribution centres; village-level ICT infrastructure; and pilot projects on certain agricultural products, such as onions, chilis and other vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• From the point of view of local logistics service providers, schemes on funding, incentives, grants and subsidies for e-commerce players need to be in parallel with their capacity building and restructuring programs</li> <li>• Schemes of logistics facilities that outsource to e-commerce SMEs need to take into account SMEs' levels of business capacity and digitalization to meet with their specific "localized" digital and e-commerce ecosystem</li> <li>• As an SOE, PT Pos Indonesia could serve as a "localized and <i>ad hoc</i> distribution centre" for the proposed pilot projects, which could also be a "clearing house" for "village to city" logistics systems (given its nationwide outreach)</li> </ul>
	<ul style="list-style-type: none"> <li>• Enhanced security for electronic transactions activities by adoption of cybersecurity principles for e-commerce players and any other online operators, i.e. via Standard Operating Procedure and regulation on cybercrime, certification on consumer data protection</li> <li>• Public awareness campaign on cybercrime</li> <li>• Development of National Cyber Surveillance/ Monitoring System for E-Commerce Transactions</li> </ul>	<ul style="list-style-type: none"> <li>• A real-time surveillance and monitoring system is needed as issues on anonymity in electronic transactions are the most apparent challenges in the overall e-commerce ecosystem</li> <li>• A moral hazard inducement – which might be a loophole in the current proposed cybersecurity programme and scheme – shall be mitigated by linking it to education and human resources focal points, i.e. under an awareness campaign on cybercrime</li> </ul>
	<ul style="list-style-type: none"> <li>• Establishment of implementing agency of the e-commerce roadmap, including appointment of experts and setting up a task force or an implementing body</li> </ul>	<ul style="list-style-type: none"> <li>• Media, universities, think tanks and NGOs, as well as IdEA, APJII and other e-commerce associations, are partners offering expertise, technical assistantships, apprenticeships, internships and networks</li> </ul>

Key stakeholders are attempting to mitigate disagreements among themselves, particularly relating to the local practice and e-commerce initiative by the Yogyakarta city government within the framework of national roadmap implementation (Box 1) and on Indonesia's position on the WTO moratorium on e-commerce (Box 2).

## Conclusion

The study explores issues (the possibilities and problems encountered by key stakeholders) and agenda (the difficulties and challenges in the policy design) that occurred during the implementation of Indonesia's e-commerce roadmap (2017–2019). It begins with the idea that e-commerce involves the continuing interplay between domestic and international policy contexts, within which its scope and definition are negotiated and eventually agreed. This study offers a conceptual framework/model that fits the organizational and external environment of e-commerce players in a developing country such as Indonesia. This specific model has mapped out key stakeholders and structural and practical policy issues. Finally, it assesses efforts by relevant e-commerce players and stakeholders to deal with discrepancies in the areas identified and outlined in the roadmap, and as suggested in the overall mapping assessment of the eight focal points.



### Box 1: The Yogyakarta city government initiative on digital economy

Yogyakarta city provides a good example of local government initiatives, which a number of districts and municipalities in the country aspire to. Aimed at gaining from the growth in the digital economy, such initiatives focus on local regulations and policy incentives, local digital entrepreneurs, human resources and capacity building, cooperation among key stakeholders and local policy innovation. Yogyakarta has collaborated with its provincial government to boost digital transformation by establishing technology centres resembling those of Silicon Valley in the United States (*Jakarta Post*, 22 February 2018). In addition, the city participated in the 100 smart cities programme initiated by MOCI. During the programme's implementation from 2017 to 2020, Yogyakarta also collaborated with the city of Bandung (West Java) to adopt the smart cities programme.

Regarding the development of its digital ecosystem, the city has also hosted a variety of digital start-ups and business incubators, of which Jogja Digital Valley (JDV) is one of its major initiatives.<sup>8</sup> Initiated and funded by PT TELKOM

(a telecommunications SOE), JDV is the second ICT business incubator after Bandung Digital Valley (BDV), its debut initiative in Bandung. It aims to increase the number of game, music, edutainment, animation and other software services developers in Yogyakarta by facilitating co-working and meeting spaces for potential developers and start-up companies in the field of creative content development. In the area of communication and telecommunication infrastructure, the city has also collaborated with a private digital firm to procure and use the city's existing fibre optic poles (as outlined in the city cooperation agreement with PT Media Sarana Akses).<sup>9</sup>

Seen from the enactment of a national-level e-commerce roadmap, the Yogyakarta city initiative (as also applied in other cities involved in the 100 smart cities programme) works in parallel with other proposed programmes and schemes. The designated focal points of funding, taxation, logistics, communication infrastructure, education and human resources offer a mitigation map for local e-commerce and digital economy players in the city. The local regulatory framework currently being discussed will eventually have common ground as its foundation. Also in the realm of the development of digital and e-commerce entrepreneurship, a variety of schemes and

programs offered at the national level have provided a springboard for local players to help them set up convenient departure strategies both as start-ups and incubators. Because the city is surrounded by clusters of creative industries (such as handicrafts, art galleries, performance spaces, festivals, MICE (Meetings, Incentives, Conferences and Exhibitions)-related events, culinary and thematic tourism, etc.), an integrated logistics system that adopts digital technology and promotes e-commerce (in light of adoption of the designated village to city electronic-based logistics system) would be of great benefit to the development of the city's digital economy.



### **Box 2: The moratorium on e-commerce (WTO Work Programme): Indonesia's position**

Despite the setback it encountered during the last WTO MC 11 in Buenos Aires in 2017, the Government of Indonesia insisted on proceeding with imposing e-commerce tax and import duties on digital products, such as downloadable music, e-books, software and the like, to be started in 2018 (Ribka, 2017). The government has consulted with the WTO Director-General, following the WTO decision to extend the moratorium on e-commerce in MC 11 for another two years. The results of the consultation were then circulated among members during MC 11 as reflected in the statement by Indonesia titled "Facilitator's Consultation on Electronic Commerce, MC 11 Declaration and Other Relevant Plenary Session" (WTO, 2017).

Prior to and after the decision, key stakeholders have mitigated and are ready to implement the decision. The lead agencies (in parallel with the roadmap focal points on taxation) are MOF, MOT and CMEA. MOT, whose minister was the head of the Indonesian delegation at MC 11, carries out the country's mission to call for an end to the moratorium. MOT also has the task of communicating and disseminating the position, and eventually the

decision, to impose tax and customs duties on digital goods by 2018 to other key stakeholders, e-commerce players (especially via IdEA), other relevant ministries and government agencies, media, NGOs and universities.

Such dynamics bring to light both the differences among key stakeholders and their willingness to compromise, as shown during a focused group discussion facilitated by MOT and hosted by the WTO Chairs Programme at the Center for World Trade Studies, Universitas Gadjah Mada (WCP-CWTS UGM) in Yogyakarta on 30 May 2018. Disagreement over legal harmonization on tax incentives and supports for e-commerce SMEs were shared between MOT, MOF's Customs Bureau, MCSME and IdEA representatives. These stakeholders do not agree on the scope and definition of digital goods and services and data collection. During the WTO General Council meeting in December 2019, WTO members agreed to maintain the current practice of not imposing customs duties until MC 12 in Kazakhstan. This issue is a domestic priority for Joko Widodo's presidency, particularly in order to maintain an equitable market for both traditional and e-commerce players. Indonesia will also make a careful consideration of the structured discussions under the Work Programme on Electronic Commerce initiated in 2020.

## Endnotes

- <sup>1</sup> E-commerce is distinguished from traditional commerce along domestic and international lines. In terms of trade in goods, domestic e-commerce allows a consumer to buy a product from a domestic online store. In traditional commerce, consumers buy products from a domestic retail store. Internationally, a consumer orders a product from an online store and the product is shipped from the producer/retailer in another country directly to the consumer. In traditional commerce, the major feature is bulk import and export of goods by international trading companies. In terms of trade in services, a service is supplied from a domestic supplier through the internet (e.g. e-banking services provided by domestic banks or online educational or training services provided by domestic educational institutions/organizations). Traditionally, a consumer receives a service offline from a domestic supplier (e.g. conventional banking services via a teller in a local bank office or conventional education services at local schools/colleges or a haircut in a local salon) (Tuthill, 2016).
- <sup>2</sup> Molla and Licker (2005) differentiate the “inter-actionist” approach from four other dominant perspectives, i.e. managerial, organizational, technological and environmental (see pp. 878-879).
- <sup>3</sup> This particular part of the section, including discussions on provisions/programs of those eight focal points presented in the two subsequent paragraphs, is based on and summarized from Agarwal (2017).
- <sup>4</sup> These issues need to be discussed thoroughly among MOCI, CMEA and MOT.
- <sup>5</sup> As of September 2018, IdEA had 319 members classified as follows: online retail (online shops with their own websites/domains where sellers have product stocks/services and sell them to online buyers (147); marketplace (business models where related domains/websites conduct not only product promotion, but also facilitate online transactions for online traders (52); payment gateway (21); travel (17); logistics (19); infrastructure (30); directory (1); daily deals (6); classified ads (19) and banks (7).
- <sup>6</sup> The survey also finds that the digital video viewer penetration rate for the country reached 67.4 per cent of all internet users in 2017, or approximately 68 million viewers, and that there are three main factors behind such a phenomenon: (1) affordable smartphones; (2) better connections; and (3) shorter attention spans (GDP Venture, 2018).
- <sup>7</sup> Other sources, such as ASEANup.com, have recorded an even more conservative figure – 1 per cent of total retail sales (ASEANup.com, 2019). As recorded by Bahar (2017), percentages of e-commerce sales have been steadily increasing since 2013: 0.5 per cent (2013), 0.63 per cent (2014), 0.76 per cent (2015) and 0.83 (2016). In 2016, the country’s overall retail sales were estimated at US\$ 543.1 billion with e-commerce/online sales of US\$ 4.5 billion (Bahar, 2017).
- <sup>8</sup> See <http://jogjadigitalvalley.com/>.
- <sup>9</sup> City cooperation agreement for 2017–2020 with PT Media Sarana Akses (2017), document no. 83/PERJ.YK/22017.

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## Comments



**MARCELO OLARREAGA\***

The chapter by Arfani, Hapsari and Perdana provides an interesting and illuminating description of Indonesia's e-commerce roadmap that can be useful to other countries trying to jump-start their e-commerce sector. It clearly identifies the main stakeholders one needs to consider when countries engage with the technological and societal challenges associated with the Fourth Industrial Revolution (Schwab, 2016).

A perhaps surprising element for a country trying to invest in the competitiveness of its digital economy is Indonesia's push at the multilateral level for lifting the World Trade Organization's (WTO) e-commerce moratorium (see Chapter 7, Box 2) to be able to tax electronic transmissions of digital goods. Consistent with this strategy at the multilateral level, the government of Indonesia amended its customs law in 2018 to be able to tax digital goods such as downloadable music, e-books and software. Below I survey a few of the reasons why placing barriers to imports of digital goods is unlikely to help Indonesia's e-commerce competitiveness.

The comparative disadvantage that countries such as Indonesia may have today on electronically transmitted goods and services is clearly due to their relatively weak infrastructure; a strong one is needed to support the digital sector. Low internet e-commerce and credit card penetration and problems with postal services are hard barriers to overcome when trying to increase the competitiveness of electronically transmitted goods and services.

However, it is difficult to see how taxing imports of electronically transmitted goods and services can help address this. The economic principle of first best suggests that the best policy solution to an economic problem is the one that directly tackles the problem. Therefore, if the problem is low internet penetration, then one needs to fix low internet penetration. If the problem is credit card penetration, then this is what needs to be addressed. Trade-distorting taxes are never going to be the first-best policy instrument, as by definition, they are not targeting the source of the problem.

**“Placing barriers to imports of digital goods is unlikely to help Indonesia’s e-commerce competitiveness.”**

\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.

An argument that is often advanced when arguing for the lifting of the WTO's e-commerce moratorium is that it hurts developing countries' ability to collect revenue at the border, and for many low-income countries, this can be an important source of government revenue. This foregone revenue could have been used to fund some better internet and credit card penetration, or more efficient and reliable postal and transport services.

There are at least two problems with this argument. First, as shown by Lee-Makiyama and Narayanan (2019) in an excellent study of the revenue impact of the WTO moratorium, the lifting of the moratorium would result in a loss of overall tax revenue in most low-income countries. The reason is that taxes on digital goods hurt the competitiveness of these countries and their gross domestic product (GDP) growth. There will certainly be more taxes collected on digital goods through these digital taxes, but this will be done at the cost of larger tax losses on other goods and services. In the case of Indonesia, Lee-Makiyama and Narayanan (2019) estimate the tax revenue loss at around US\$ 23 million (associated with a GDP loss of US\$ 164 million).

If there is a need to fund better internet, e-commerce and credit card penetration, or better postal services,

I would suggest issuing government bonds: borrowing at the current interest rates is likely to be the cheapest way of funding growth-enhancing policies. If borrowing is not

an option, many other taxes are less distorting than tariffs. Land taxes, sales taxes, VAT and taxes on firms' profits will all be less distorting and, therefore, more likely to increase overall government revenues.

If none of these taxes are available because of a government's low capacity to tax, we are left with import tariffs at customs. However, at this stage, one should probably start wondering whether improving the competitiveness of electronically transmitted

goods should be a priority for such a country. Let us assume that this still makes sense, thus the question is why tax electronically transmitted goods. Taxation theory tells us that we should be taxing the products that will generate the largest amount of revenue, and this will be the products with the less elastic demand. These are unlikely to be electronically transmitted goods. In fact, the products with the lowest average import demand elasticity is waste and scrap beryllium (used for copper), followed by brakes for motor vehicles. So large tariffs on these products will generate a lot of tariff revenue. And this additional tariff revenue can be used to fund the projects that will help improve the competitiveness of Indonesia's digital economy.

**“Low internet e-commerce and credit card penetration and problems with postal services are hard barriers to overcome when trying to increase the competitiveness of electronically transmitted goods and services.”**

Note that I carefully chose the term “tariff revenue” and not “customs revenue” or “government revenue”. As tariff revenue increases, it is possible that customs revenue declines, because other taxes are collected at customs and as you reduce the volume of trade coming through customs with the higher import tariffs you will be collecting less sales tax or VAT. So, again, it is not clear that these tariffs on relatively inelastic products will result in higher overall revenue for the government (and this is before you take into account the growth impact of these higher tariffs).

A related and important point is that the Uruguay Round Agreement on Implementation of Article VII of the General Agreement on Tariffs and Trade 1994 (Customs Valuation Agreement) allows for the valuation of electronically transmitted products using the value of the carrier medium alone, excluding the value of the

software content if WTO members notify it to the WTO Secretariat. We know how unreliable WTO members have been at notifying anything to the WTO, but 48 members have notified that they are excluding the value of the software content. These countries include Brazil, Canada, China, the European Union, Japan, the Russian Federation, South Africa, the United States and even Indonesia itself. They represent more than 80 per cent of world trade.

So if one of these countries were to tax electronic transmission of software, it would be introducing a distortion that creates incentives to send software by physical means through customs rather than electronically. This would be clearly inefficient and, more importantly, it does not help efforts to address global warming as all that software and those e-books would be unnecessarily shipped across oceans and transported by truck.

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Chapter 8

# Taxation of international e-trade: Russian particularities

Alexander Pogorletskiy and Sergei Sutyryn\*<sup>1</sup>



## Abstract

Tax rates on e-commerce in Russia should remain moderate, given the small size of its digital trade operations (so the rise in tax revenues from higher rates would be small) and substantial growth prospects (so future tax revenues from a developed sector could be quite large). The Russian Federation's (Russia's) taxation of e-commerce activities presents two important challenges. First, consumer goods purchased directly from foreign online sellers enjoy significant tax advantages compared to imports purchased in Russian retail outlets, undermining the profitability of Russian importers and reducing tax revenues. Second, the value-added tax (VAT) levied on foreign exporters of electronic services creates uncertainty because the legal definition of electronic services is unclear and impedes the operations of multinational companies in Russia because VAT is taxed on intra-firm imports of services. Russian authorities are establishing effective automated systems for collecting taxes and customs duties on cross-border e-commerce, calculating VAT compensation to exporters and accounting for receipts from online stores. These systems will help to prevent abuse of the tax system, as well as reduce the cost of compliance by firms.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

Issues of tax regulation on international e-trade transactions became relevant immediately following the emergence of the virtual component of international trade at the turn of the 21st century. Over the past 20 years, the most obvious problems in this area have been solved, for example, the remoteness of transactions and the related complexity of determining the jurisdiction of the sales revenues formation, the qualification of sales revenues in the context of existing double taxation agreements, and the application of indirect taxes, especially VAT and sales taxes, to e-commerce transactions. Modern information technologies and the digitalization of the economy contribute to the improvement of tax administration methods and the tax control of electronic foreign trade transactions, including those operating on the basis of intergovernmental cooperation. At the same time, the taxation of cross-border e-commerce transactions in national economies in the current conditions of global economic development is still beset by a number of challenges actively discussed by the academic community.

This chapter analyses features of the tax regulation of international (cross-border) e-trade operations in the Russian Federation (Russia). We note the particularities of foreign trade and its virtual component development in Russia, discuss the intricacies of cross-border e-commerce transaction taxation and consider the tax specifics of international e-trade operations with digital content in Russia, as well as tax administration issues.

The basic idea developed by the authors is that the tax regulation of international e-trade should be implemented very cautiously. Cross-border e-commerce transactions in value terms are still very modest compared to traditional trade in goods and services. At the same time, they have a clear potential for impressive growth. Thus, a large portion of the revenues from taxing international e-trade incomes and operations in the short term could be foregone in the interest of supporting the long-run growth of the sector through low/moderate taxation. We also argue that expansion of international e-commerce in its turn would facilitate overall trade and gross domestic product (GDP) growth (see also Sokolovska, 2016).

## Particularities of foreign trade and its virtual component development in Russia

Some of the necessary tools to encourage foreign trade are taxes and duties, which can also be used to obtain the necessary resources for the targeted budget financing of state programmes that support foreign economic operations. With the digitalization of the national economies and the entire system of international economic relations, an increasing number of transactions take place in a virtual form. This is also true for international trade, which firstly can be carried out in the field of export and import of tangible goods and services based on new digital technologies, and secondly gradually includes in its turnover an increasing amount of virtual digital content. Taxation should also adapt to such e-commerce operations by properly

regulating related transactions with tangible goods and digital items, including e-services and virtual content.

Both e-trade as a whole and its cross-border component are small in comparison with retail sales in the domestic market or with the foreign trade in goods and services (Table 1). Nevertheless, while e-commerce is only 4 per cent of Russia's retail trade turnover, cross-border e-trade is already 27 per cent of the total Russian internet trade market (Central Bank of the Russian Federation, 2018, pp. 52-53). Moreover, cross-border e-commerce sales have increased rapidly (by 20 per cent in 2018), as have international parcels related to the delivery of tangible goods ordered in foreign internet stores to Russian buyers (25 per cent in 2018) (IEP,

2019). The rapid growth rate of the cross-border e-commerce segment is obviously an interesting issue for tax regulation in Russia, especially in the context of the stimulating role of taxation (OECD, 2018; Sperling, Orszag and Gale, 2001). That is, maintaining moderate tax rates on e-trade (rather than increasing tax rates) would support its continued, rapid growth. And given economies of scale in this market, encouraging the growth of e-trade could eventually result in large, profitable firms that provide substantial extra tax revenues.

The small size of e-commerce in Russia is roughly in line with international trends. Currently, less than 1 per cent of the value of world exports and imports are digital products, and their share has in fact decreased: in the early 2000s, it exceeded 2 per cent (WTO,

**Table 1: Key characteristics of cross-border e-trade in Russia**

	2017	2018	2019 (estimated)
Sales (in billions, RUB)	262	316	360–380
Sales (in billions, US\$)	4.5	5.0	–
Share in total e-commerce sales in Russia	25%	26%	27%
Share in total retail sales in Russia	3.5%	4%	–
Share in total export and import goods and services trade of Russia	0.60%	0.61%	–
Share in GDP	0.35%	0.44%	–
Volume of international parcels of Russian Post (in millions)	264	330	–
The main country of departure of international parcels to Russian recipients (share of all countries)	China (91%)	China (94%)	–
Average declared value of an international parcel to the Russian recipient (RUB, with equivalent in (EUR))	–	564 (7.6)	–

**Source:** The Gaidar Institute for Economic Policy; Bank of Russia, available at: [http://www.cbr.ru/collection/collection/file/5913/bulletin\\_18-03.pdf](http://www.cbr.ru/collection/collection/file/5913/bulletin_18-03.pdf).

2018, p. 93). E-trade accounts for a relatively small proportion of the total amount of retail operations. The share of e-commerce in global retail sales is just over 10 per cent (Amasty, 2018). Thus, for all its potential attractiveness, e-commerce – especially cross-border – is not yet a significant component in the business-to-consumer (B2C) segment.<sup>2</sup> At the same time, it is necessary to consider its high growth potential; the growth of sales in global e-commerce transactions in 2018 was 21.6 per cent (Merehead, 2018), significantly outstripping both the growth of the world economy (3.1 per cent in 2018) and the growth of global exports in goods and services (4.3 per cent in 2018).<sup>3</sup>

All of the above suggests that, at present, due to the limited importance of e-commerce, including cross-border, the fiscal effect of its taxation on national budgets (including the Russian one) is insignificant. Thus, the tax regulation of cross-border e-commerce should not focus on increasing the collection of direct and indirect taxes, but rather should seek to support the rapid growth of e-commerce activities.

### **Features of taxation of cross-border e-commerce transactions**

The United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce provides for the inclusion in the relevant transactions of any sales carried out through an electronic data interchange (UN, 1999). Accordingly, if the order, payment or delivery of products (tangible goods, virtual content and services) is carried out through the channels of information

exchange using the internet, then such operations can be characterized as electronic commerce (e-commerce or e-trade). Thus, any purchase of both material goods or services and virtual digital content, if carried out using a computer or a mobile device connected to the internet, can be characterized as e-commerce in a broad sense of the word. In view of the rapid spread of relevant technologies, many worldwide trade operations – as interpreted by UNCITRAL in 1996 – are based on electronic channels of data exchange between the seller and the buyer. Major components of the process include the search for goods, services and digital products; their order; order confirmation by the seller; non-cash payment by the customer of the purchase using electronic bank payments; and issuance of an electronic cash receipt to inform the buyer of the delivery of the paid goods.

From the point of view of our discussion, e-commerce transactions should be divided into two components:

1. Remote purchase of material goods through virtual stores or platforms, where the delivery of goods is carried out through the sales channels mechanically with electronic payment or cash to the courier (representative of the seller); and
2. Remote purchase of digital content (including electronic services) and its order, payment and delivery, which is carried out virtually using modern information and communications technologies.

The problems in the first case are related to the tax regulation and control

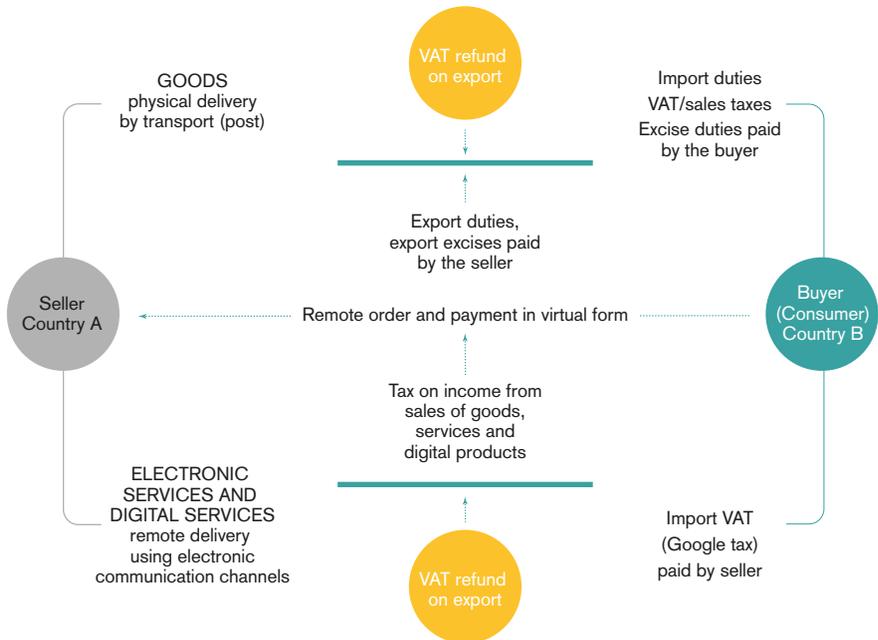
of sellers' activities, but the movement of goods can be tracked and subject to indirect taxes. In the second case, the digitalization of trade complicates external controls of the receipt of payments by sellers, as well as the fact of delivery of virtual content to consumers.

Figure 1 presents the main tax implications for cross-border e-commerce transactions in goods and digital content (including e-services). As is evident from the scheme, cross-border e-trade may affect revenues from the income tax (corporate profit tax), the VAT/sales tax, export and import customs duties, and excise taxes.

From the international tax law perspective, cross-border operations of e-commerce are notable for the fact that indirect taxes and duties

(VAT/sales tax, customs duties and excise duties) are involved as the main tools of regulatory impact on the movement of tangible goods, electronic services and digital content. This is not typical for international tax law, the object of which is usually only direct taxes. At the same time, VAT (sales tax) payers also can have cross-border fiscal consequences, which are particularly unusual in international tax law. Indeed, the already established world practice for remote sales of electronic services and digital products requires the seller from country A to register as a VAT payer in destination country B. Thus, the seller from country A will pay VAT on its intangible products imported by the buyer from country B to the budget of the destination country B. Thus, in addition to the two generally accepted principles of international taxation, the residence principle and source

**Figure 1: Tax consequences of cross-border e-commerce transactions**



principle, the sphere of international tax regulation has gradually included a third principle – the destination one. This principle was formerly applied for VAT imposition in international transactions with tangible goods. Previously VAT was used only as an incoming tax for importers of commodities to equalize domestic prices in comparison with foreign ones. Now VAT is applicable both for commodities and services plus virtual context in e-trade.

In the process of cross-border e-commerce transactions, the movement of tangible goods between countries can be tracked and the payment of the relevant indirect taxes and duties can be controlled. At the same time, the country of the buyer location does not claim to tax the income of the remote seller – a resident of a foreign jurisdiction. However, the jurisdiction in which the goods are finally consumed may require remote retail exporters to pay VAT as well as excise duties, which are based on the customs value of the goods in their budget. This is done to equalize the conditions of competition. In the case of the cross-border supply of digital content, which is closely related to intellectual property rights, as well as taking into account the rapid digitalization of services, it is also difficult to control the fact of delivery of such virtual products (crossing the border of the destination country). That clearly complicates taxation.

In the case of remote order and virtual payment via electronic communication channels, the seller, as an exporter, is reimbursed for the value of VAT upon delivery of tangible goods. Meanwhile, the seller will have to pay export duties (if any) and excise taxes.

Furthermore, after the goods cross the border of the buyer's jurisdiction, the obligation to pay the import duty for remote deliveries (without the participation of resellers in the country of destination) is assigned to the buyer. In certain instances, especially in wholesale deliveries for resale, the buyer will also have to pay VAT (sales tax) and excise tax (for excisable goods).

When providing remote cross-border services, the seller (exporter) in its jurisdiction is exempt from VAT but will have to pay VAT ("Google tax"<sup>4</sup>) in the country of the services' final destination. The delivery of digital content largely resembles the export of electronic services. In addition, of course, the seller pays tax on the income from the cross-border sales of goods, services and digital products in its own jurisdiction.

The issues concerning taxation in the cross-border supply of digital content have been resolved by the Organisation for Economic Co-operation and Development (OECD). Since 1998, the OECD has defined criteria for the classification of the place of origin of income from a sale transaction and the interpretation of existing tax agreements, taking into account e-commerce transactions with digital products. Accordingly, the main problems in the area of the taxation of cross-border e-commerce transactions currently relate to the movement of tangible goods ordered through electronic channels of data exchange between sellers and buyers, as well as the application of destination-based VAT to the remote seller upon delivery of electronic services and digital products. Now, let us consider the

relevant features of the taxation of cross-border e-commerce transactions in Russia.

### **Tax consequences for international e-commerce operations with tangible goods in Russia**

The main taxes applied in the field of cross-border electronic trade in goods in Russia are as follows:

1. Transactions in which a Russian remote retail seller delivers goods purchased in an online store to a foreign buyer (consumer) – B2C export transactions:

- Russian profit tax of 20 per cent of the seller's income from sales of goods.

2. Transactions in which a Russian remote wholesaler delivers goods purchased in an online store to a foreign wholesale buyer (reseller) – B2B export transactions:

- Russian profit tax of 20 per cent of the seller's income from sales of goods; and
- Russian export duties (rates 0–80 per cent (Garant, n.d.)) apply mostly for raw materials and mineral oils and export excises paid by the seller.

The Russian remote wholesalers that export excisable products (such as tobacco, alcohol, mineral oils, etc.) of their own production are exempt from the payment of excise taxes. In addition, the wholesaler receives a VAT refund on export (VAT rates in Russia are 0, 10 or 20 per cent).

3. Transactions in which a Russian personal buyer (consumer) receives a parcel of goods ordered in a foreign online store from a foreign retail seller – B2C import transactions:

- Russian import duties according to the rates shown in Table 2; for postal items weighing less than 31 kg and a declared customs value of less than EUR 500 during one calendar month, import customs duties in Russia are not applied (starting in 2020, the cost limit becomes EUR 200 while removing restrictions on time and number of received parcels).

4. Transactions in which a Russian wholesale buyer purchases goods online from a foreign wholesaler for resale – B2B import transaction:

- Russian import duties according to the rates shown in Table 2; and
- Russian import VAT (rates of 10 or 20 per cent) and excise taxes for excisable products.

One of the problems of e-commerce development in Russia is the tax competitive advantages of foreign remote sellers of goods sold through internet platforms. Indeed, differences in taxation in cross-border and domestic online sales often put Russian online retailers in a less advantageous position. For instance, Russia currently has a very high share of cross-border e-commerce transactions with China: more than 90 per cent of foreign orders of Russian retail customers come via parcels from Chinese online stores (Lenta, 2019). Given the low value of most purchases (usually less than EUR 200), customs duties are not charged

when sending goods to Russia by mail. Import VAT (standard rate is 20 per cent) is also not charged to retail buyers in the case of purchase for personal consumption. Accordingly, the final price of foreign goods for the Russian buyer is only the cost of their production plus a small profit for the manufacturer and distributor of the goods, as well as the constantly decreasing cost of postal delivery. After crossing the Russian border, the price of Chinese goods will not change in any way in comparison with the cost of the internet order (moreover, a remote exporter/Chinese seller can even return VAT, the amount of which in China is 17 per cent). The price of goods imported from China by a legal Russian wholesale importer is at least 25 per cent higher than the price of goods purchased from the Chinese online store (the import customs duty equals 5–20 per cent plus 20 per cent for VAT, which can be offset by the compensation of Chinese export VAT). In other words, e-commerce makes direct retail purchases from Chinese manufacturers with the delivery of goods to the final consumer by mail more lucrative. At the same time, the Russian budget suffers both from the loss of potential import customs duties and import

VAT, and from the reduction in tax revenues from the incomes of large importing companies and individuals employed in the import-oriented sector of the national economy.

In contrast, if the Russian online retailer supplies goods to China, then almost 70 per cent is added to the original price of goods when crossing the Chinese border – import VAT (17 per cent), consumption tax (its rate varies between 1–56 per cent depending on the type of commodity products, on average about 42 per cent) and customs duty (about 10 per cent). Considering the previously withheld and included in the customs value Russian VAT of 20 per cent (which is impossible to compensate for when exporting through electronic trading platforms in retail format), the price of Russian goods intended for the Chinese market is almost twice the price of those for the domestic Russian market. As a rule, these products cannot compete with similar goods made in China.

Thus, the task of the tax regulation of e-commerce operations in Russia with tangible goods is to create equal competitive conditions for domestic and foreign internet sellers by levelling

**Table 2: Rates of customs duties on imports delivered by post in Russia in 2019**

Customs value (RUB)	Standard rate customs duty (RUB)	Customs duty rate for electronic declaration (RUB)
Less than 200,000	500	375
200,000.01–450,000	1,000	750
450,000.01–1,200,000	2,000	1,500
1,200,000.01–2,500,000	5,500	4,125
2,500,000.01–5,000,000	7,500	5,625
5,000,000.01–10,000,000	20,000	15,000
More than 10,000,000.01	30,000	22,500

Source: <https://www.glavbukh.ru/art/97949-tamojenny-sbor-import-2019>.

the low tax burden of remote retailers from countries that actively stimulate their exports. At the same time, increasing the fiscal burden on imports through online stores should be a goal approached with caution, as higher prices due to higher taxes would have a negative impact on consumers, reducing their disposable income.

Most Russian purchases in foreign online stores are of relatively low-cost goods (the average declared value of an international parcel to the Russian recipient in 2018 was less than EUR 8 – see Table 1). Since consumers are turning to foreign online stores to save money, any attempt to tighten tax and customs control over imports in the field of e-commerce instead of increasing tax collections and protecting the domestic market from foreign competitors could lead to opposite results. In contrast to that, a large volume of mail at low customs tariffs will bring additional revenues to the budget. Therefore, it is necessary to increase the fiscal burden on consumers and operators of e-trade very carefully, and in some cases this should be completely avoided, taking advantage of the economies of scale from the growth of trade in goods through internet platforms with low taxes.

Another important problem with the participation of Russia in the cross-border e-trade in goods relates to the framework of the Eurasian Economic Union (EAEU). The difference in VAT

and excise rates between the EAEU countries could stimulate cross-border e-commerce but significantly distort tax revenues for the budgets of the member states, especially Russia.

For example, the excise duty on beer in Russia is twice the duty in the Republic of Belarus, and almost two and a half times the duty in Kazakhstan (Table 3). In addition, there is a noticeable difference in the standard VAT rate, which in Russia and Belarus is 20 per cent, and in Kazakhstan only 12 per cent. Accordingly, beer ordered in Belarusian or (especially) Kazakhstani online stores delivered to the Russian consumer will, due to differences in national tax rates, be significantly cheaper compared to the retail price in Russia.

The solution to this problem lies in the tax harmonisation (coordination) process in the EAEU. This process has already begun: from 1 January 2019 in the EAEU countries, a single customs tariff for imported parcels has been introduced (Pro2019god, 2019), and the harmonisation of VAT and excise duties is the next step.

### **Tax consequences for international e-commerce operations with electronic services and digital content in Russia**

The main types of taxes and their rates in Russia in the implementation of

**“Two main directions should be distinguished in contemporary cross-border e-commerce activity in Russia: transactions in tangible goods and transactions in digital goods and services.”**

**Table 3: Differences in level of excise duties on beer in Russia, Belarus and Kazakhstan (2018)**

	Russia	Belarus	Kazakhstan
Excise duty per 1 litre of beer with a volume fraction of ethyl alcohol up to 7%	RUB 21	BYN 0.35 (RUB 10.9)	KZT 48 (RUB 8.6)

Sources: <http://znaybiz.ru/licenzirovanie/otdelnye-vidy-deatelnosti/akcizy/na-pivo.html#i-2>; <https://nalogikz.kz/taxcode/2018/51.html>; <https://www.gb.by/novosti/nalogi/kakie-stavki-aktsizov-deistvuyut-segodny>.

cross-border e-commerce with e-services and digital products are as follows:

1. Transactions in which a Russian remote seller delivers electronic services and digital products to a foreign buyer (consumer), both individual and corporate – B2C and B2B export transactions:
  - Russian profit tax of 20 per cent for the seller's income from sales of e-services and intangible products; and
  - VAT refund on export operations (excluding e-services and digital products initially exempt from VAT under Article 149 of the Russian Tax Code: medical intangible products and services, educational and financial e-services, licences and exclusive rights for software, data bases etc.).
2. Transactions in which a Russian buyer (consumer), both individual and corporate, receives e-services or digital products ordered online from a foreign seller – B2C and B2C import transactions:
  - VAT at the appropriate rates of 0, 10 or 20 per cent imposed on the foreign remote seller that has to be registered as a VAT payer (using corresponding tax accounting) in the Russian jurisdiction.

Currently, one of the serious tax problems in Russia for cross-border e-commerce in terms of trade in digital content is VAT levied on foreign exporters of electronic services and products, the so-called "Google tax". This tax has a clearly expressed fiscal orientation: after the introduction of the "Law of Google tax" in 2018, foreign internet companies in Russia paid RUB 12 billion VAT on sales of electronic content (digital products and services) to individuals (B2C segment), and the amount of VAT paid to the Russian budget after the appearance of the Law (1 January 2017) increased in 2018 by 28 per cent.<sup>5</sup> "Electronic services" in accordance with Russian tax legislation include the transfer of rights to use programmes, advertising, website support, storage and the processing of information. At the same time, the definition of electronic services in the Russian legal field is blurred; many documents, including licences and technical contracts, come under the law. Therefore, due to the current uncertainty, large parts of Russian subsidiaries suspended payments for services to foreigners provided via electronic communication channels.

From 1 January 2019, the provisions of the Tax Code came into force, according to which foreign companies that remotely supply electronic services to Russia must pay VAT when working with corporate customers (B2B segment). The problem is that

even transactions related to the provision of cross-border electronic services within the same corporate structure fall under the Russian “Google tax”. In particular, the German company Siemens bears additional tax costs when working in the Russian market, a point emphasized by its representatives. In addition, many foreign companies delivering their digital products and services in Russia (including Cisco, IBM, Qiwi, Opera Software, Siemens and NokiaSolutions) via the mode of remote access from abroad had to register with the Federal Tax Service of Russia (FTS) to pay the “Google tax” (Vesti Ekonomika, 2019). Under the circumstances, transnational companies will be reluctant to establish subsidiaries in Russia, with a resulting loss in investment and technology transfer. Presumably the imposition of VAT on B2B services will reduce Russian firms’ access to new technologies.

In total, approximately 1,500 foreign companies that are suppliers of electronic services and products in Russia were registered with the FTS as “Google tax” payers by the end of spring 2018. The first 200 of these began paying the “Google tax” back in 2017 for selling online games, music, e-books and other digital content as B2C transactions. In the first year of the introduction of the “Google tax” (2017), the FTS managed to collect RUB 9.4 billion in VAT, and it collected RUB 12 billion in 2018 (Finmarket, 2019).

### **Tax administration issues in Russia related to cross-border e-commerce**

The FTS and the Federal Customs Service of Russia have already created and are successfully testing fairly

effective automated systems for collecting taxes and customs duties in terms of cross-border e-commerce incomes and operations. In Russia, there are digital platforms on which the accounting of VAT revenues, the control of the movement of excisable goods and the payment of customs duties are built. In addition, special electronic algorithms are used to identify possible abuses by companies and individuals engaged in foreign economic activity.

There are also mechanisms for VAT compensation to exporters and even accounting for receipts in online stores. This prevents abuses in e-trade, making the sale of virtual content similar in its tax transparency to the sale of tangible goods. The future lies in the exchange of data between national specialized VAT and excise control systems, as well as their integration, especially within regional trade and economic communities such as the EAEU. This can be of serious help to the process of tax harmonisation (coordination), contributing to the convergence of tax base calculation methods and the equalization of tax rates and tax benefits.

In modern Russia, the regulator, which often used rather strict methods of tax administration and control during the initial stage of the national tax system formation (in the 1990s), including the demonstrative power to affect taxpayers, has now moved to cooperative methods of working with business and individuals. The FTS currently positions itself as a service structure that convinces businesses and individuals of the importance of the reputation of an honest taxpayer. The activities of the FTS are supported by advanced digital technologies, which on the one hand facilitate the payment

of taxes, including in the field of e-commerce, and on the other hand highlight the possibility of the rapid identification of unfair taxpayers.

## Conclusion

Based on the above, we can draw the following conclusions:

- The rather modest share of e-commerce transactions in the total amount of foreign trade operations in Russia does not make e-trade fiscally attractive for the Russian budget. Moreover, the high positive dynamics of cross-border e-trade development and its significant share of internet trade transactions in Russia imply the need for caution in imposing substantial taxes on the sector.
- Two main directions should be distinguished in contemporary cross-border e-commerce activity in Russia: transactions in tangible goods and transactions in digital goods and services. In each case, tax implications will vary – customs duties and excise duties are more important for visible goods, while the VAT on imports is more important for e-services and digital products. This is also relevant to the global trends in e-trade.
- Russia has the necessary practical experience in the taxation of cross-border e-commerce transactions (for example, in terms of VAT collection from international e-trade transactions or via the concept of the friendly interaction of tax authorities, businesses and citizens, which is the basis of national tax policy), and this experience is a useful asset that can be utilized by other countries.

## Endnotes

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<sup>2</sup> According to Statista's preliminary data for 2019, the value of the global business to business (B2B) e-commerce market (US\$ 12.2 trillion) is six times more that of the B2C market (Statista, 2019).

<sup>3</sup> The World Bank (<https://data.worldbank.org/> indicator).

<sup>4</sup> The law of the Russian Federation No. 244-FZ dated 3 July 2016 (Consultant, 2016) obliged from 1 January 2017 that VAT should be paid by foreign companies providing electronic services and selling digital content to buyers in Russia. Since the list of electronic services subject to VAT includes internet search engines, including Google, this law in Russia was unofficially named "the law of Google tax".

<sup>5</sup> FTS: "Tax on Google" in 2018 brought in RUB 12 billion to the budget. Rambler, Finances, 8 February 2019, available at: <https://finance.rambler.ru/money/41679127-fns-nalog-na-google-v-2018-godu-prines-byudzhetu-12-mlrd-rublej/>.

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## Comments



**DÉSIRÉE M. VAN GORP\***

The growth of e-trade in the past years has done more than revolutionize the way business is done around the globe. It eliminates distance-related barriers to trade increase, while it may also increase the digital divide between technologically advanced and less advanced countries with technological deficiencies. At the same time, it may serve as a tool for many developing countries to further engage in international trade by entering the online marketplace with a global increase in the number of internet users. Traditional tax systems need to be reviewed because the taxation issues of e-trade are more complex and demand new frameworks for fair taxation while at the same time allowing enough room for innovation. Russia, as

discussed in Chapter 8, is an interesting case because the country's budget suffers from tax losses reflected in the fact that despite the growing significance of e-trade as a portion of overall international trade, the fiscal effect of its taxation on national budgets is insignificant. This chapter suggests focusing on the stimulating role of taxes in international trade rather than on increasing the collection of taxes, whereby the emphasis on customs duties and excises is more important for visible goods, while for e-services and products, import VAT becomes more important. This line of thinking may be useful to consider for other countries in their effort to make their tax systems e-trade proof.

*\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*



A photograph of an elderly man with white hair and glasses, wearing a white button-down shirt, looking intently at a large fish on a market stall. The background shows a busy market with other people and stalls under a metal structure with hanging lights.

Chapter 9

**Assessing trade  
facilitation implementation  
in the era of e-commerce:  
a comparative analysis  
of Jordan, Oman and  
Hong Kong, China**

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and Youwon Hwang\*



## Abstract

The emergence of e-commerce is driving important changes in the ways of conducting international trade. It has become clear that improvements in trade facilitation implementation should be supported by electronic systems. Through a comparative study of a number of reports issued by international organizations – the International Telecommunication Union (ITU), the Organisation for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and the World Bank – on topics of e-commerce, logistics and trade facilitation, we examined the status and performance of Jordan, Oman and Hong Kong, China. Based on this analysis, Hong Kong, China, shows one of the best practices of modern trade facilitation and customs, and we found that governmental willingness is influential in expediting trade facilitation provisions. Jordan and Oman recently made trade reforms to improve trade facilitation, but they still need to bridge the gap between policy and actual practice in all governmental organizations in terms of trade facilitation and e-commerce, as well as build citizens' capacity. By improving the implementation of trade facilitation measures and increasing e-commerce capacity as Hong Kong, China, has done, Jordan and Oman will succeed through trade prosperity driven by the global digital economy.

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## Introduction

When e-commerce crosses countries' borders, trade facilitation becomes one of the most critical issues to global consumers, because the status of trade facilitation implementation in each country significantly affects the cost of trade. Improving the efficiency of trade logistics is a key element to reducing trade costs and promoting global and regional trade. Trade costs are still high despite the reduction in trade barriers and improvement of communication brought by the digital technology. Trade costs are estimated to be equivalent to a 170 per cent tariff on international trade globally and 231 per cent for developing countries (WTO, 2016c). Trade facilitation has been referred to as the "the grease in the wheel" of international trade, as it focuses on reducing all the transactions costs associated with the enforcement, regulation and administration of trade policies (Staples, 2002). Available figures indicate that implementing the multilateral Trade Facilitation Agreement (TFA) would reduce trade cost by an average of 14.5 per cent (Hillberry and Zhang, 2015) and increase global export between US\$ 750 billion and US\$ 1 trillion per annum (WTO, 2016c). Developing countries gain proportionally more from trade facilitation as they have more room for improvement.

## E-commerce and trade facilitation

Any sales activity, whether conducted domestically or internationally, is composed of a set of processes: ordering, paying, shipping and delivering. A transaction is considered to be e-commerce if the ordering takes

place digitally, while the delivery process can be either online or offline. E-commerce can facilitate the sales of goods and services whether domestically or across borders through reducing the final costs of transactions and enabling closer customer relations among different actors from businesses, households and governments. However, to succeed on the e-commerce front, it is crucial to have a well-developed logistics system, that is, smoothly working road transport, ports, postal delivery services and customs, to help ensure effective order fulfilment. Trade logistics, including trade facilitation, is one of the seven policy areas that, according to the United Nations Conference on Trade and Development (UNCTAD), are essential to help create an environment that is more conducive to reaping the benefits of e-commerce (UNCTAD, 2017).

A large number of studies found a positive relationship between improving the trade facilitation environment and international trade flows. According to Anderson and Marcouiller (2002), a 10 per cent increase in a country's index of transparency and impartiality leads to a 5 per cent increase in its imports. Hoekman and Nicita (2008) found that improvements in logistics performance and trade facilitation have a greater effect on increasing trade for a country than lowering tariffs. According to gravity trade model, reducing transaction costs related to trade, by changing public policies and improving regulations and procedures for import and export supply chains, is critical for enabling a country to expand its trade opportunities.

The emergence of e-commerce is driving the huge movement in the

international trade arena. Estimated global sales through e-commerce are expected to surpass US\$ 2.3 trillion (Gain, 2017). In order to provide e-commerce-based services, other technologies, such as telecommunications, internet, logistics, transportation and electronic systems, should be available in advance. Therefore, it is important to identify whether current infrastructures are available to support e-commerce and trade facilitation implementation in the selected economies – Jordan, Oman and Hong Kong, China – for the comparative study.

## Logistics, trade facilitation and e-commerce

### Jordan

Transportation infrastructure in Jordan has been evaluated as comparatively well-developed among the Middle East and North Africa (MENA) region (Jordan Investment Commission, 2018). Thanks to Jordan's strategic location, the transport sector contributed around 10 per cent of the GDP in Jordan, and employed about 7.2 per cent of the work force (Harake, 2019). The annual growth of the transportation and logistics sector is estimated to increase from 5 to 6 per cent by 2030 (Jordan Investment Commission, 2018). In Jordan, the air transport infrastructure and connectivity is among the highest in the MENA region (World Economic Forum, 2017). Jordan's abundance of electricity and telecommunications services support

the provision of efficient infrastructure of transportation and logistics (Jordan Investment Commission, 2018). Jordan identified digital development as a high priority for the country's social and economic development (Harake, 2019). The launch of 4G LTE services in Jordan has led to a growth in data revenues for mobile operators (De Rosbo, 2020).

Revenue in the e-commerce market in Jordan is expected to reach US\$ 525 million in 2020, and the number of e-commerce users will be around 3.3 million (Statista, 2020b). Jordan became one of the first countries in the MENA region to enact laws regarding information and communications technology (ICT) related transactions following the spread of internet use. The Electronic Transaction Law (ETL), drafted first in 2001, covers a wide

area of internet transactions including computer information transactions, general sale of goods and services via the internet and other inter-party transactions conducted online (Yaseen, 2016). Jordan and the United States signed the Joint Statement on Electronic Commerce in 2000. However, a clear set of regulations and tax laws

covering e-commerce transactions has not been prepared yet.

In 2019, the Cabinet decided to impose customs fees on online purchases of foreign clothes, shoes, foodstuffs and children's toys over JOD 200 per month, with an annual cap of JOD 500 (Jordan Post, 2019).

**“Improving the efficiency of trade logistics is a key element to reducing trade costs and promoting global and regional trade.”**

The Jordanian people were concerned that imposing higher customs fees on e-commerce commodities might have a negative effect on online trade. Still, Jordan Post referred the establishment of a special centre to deal with e-commerce items and took the first step to develop an electronic tracking system for serving the global market and its customers (Jordan Post, 2019).

### **Oman**

The logistics sector plays a vital role in Oman's modern economy and is viewed not only as a core sector but also as the backbone of the economy, facilitating the growth of many other sectors. With revenues amounting to US\$ 7.87 billion in 2013 (Ithraa, 2016), the sector contributed 4.9 per cent to Oman's GDP in 2015 (Ithraa, 2016). The logistics industry is expected to grow at an annual growth rate of 7 per cent between 2015 and 2020, enhanced by government investments in ports (Duqm and Sohar), free zones (Sohar, Duqm, Salalah and Al Mazunah), industrial estates, roads, airports (Sohar, Muscat, Salalah, Adam and Duqm) and the rail network. These investments would facilitate trade with neighbouring Gulf Cooperation Council countries and also open a window with Asia and Sub-Saharan Africa as trade destinations (Ithraa, 2016).

An empirical assessment was conducted to look at the probable economy-wide and sectoral impacts of improving efficiency in the logistic sector in Oman (Al Shammakhi, Akintola and Boughanmi, 2018). The assessment considers a scenario of trade facilitation whereby Oman improves its trade facilitation by 10 per cent. This scenario is built on the fact

that, in its five-year development plan, Oman is expecting to invest OMR 6 billion in building and expanding airports and seaports in three main hubs: Salalah, Sohar and Duqm). The full operation of these three main ports is expected to reduce trade cost by 10 per cent (Al Shammakhi, Akintola and Boughanmi, 2018). The results show that trade facilitation improvement will have a positive gain in terms of GDP (an increase of 4.3 per cent) and welfare (an increase of almost 1.3 per cent) (Al Shammakhi, Akintola and Boughanmi, 2018).

The Omani government issued the Electronic Transactions Law in 2008, which covered the fast development of technology and the internet in processing operations and concluding transactions locally and internationally (Al Barwani, 2018). Furthermore, the government established the Information Technology Authority (ITA) to ensure proper implementation of the provisions of the Law. ITA indicated that the development of e-commerce depends on policies and laws, as well as access to goods and services via the internet and logistics services, among other factors (Times of Oman, 2019). Oman's Ministry of Commerce and Industry announced new regulations that will be issued to maintain the rights and the confidence of e-traders (Al Nasserri, 2020). The revenue in the e-commerce market in Oman will be expected to reach US\$ 800 million in 2023 (Statista, 2020c).

### **Hong Kong, China**

The Hong Kong Trade Development Council (HKTDC) states that trading and logistics accounted for 22 per cent of the city's GDP and provided 727,500 jobs in 2017 (2019). Also, the logistics industry alone contributed

3.2 per cent to the GDP and 180,600 jobs in same year (HKTDC Research, 2019). E-commerce revenue in Hong Kong, China, is estimated to be US\$ 5,511 million in 2020, and the number of e-commerce users will be 5.7 million in 2020 (Statista, 2020a). “Given the externally-oriented and open nature of Hong Kong’s economy, the development of international trade policy in and through the WTO is of vital importance to Hong Kong because of the possible impact on external trade, and its knock-on effect on industry and employment” (GovHK, 2016). As a matter of fact, Hong Kong, China, became the first member to ratify the TFA (WTO, 2015a). Hong Kong, China, offers customs procedures that are among the easiest and fastest worldwide, with virtually all customs declarations and related documents processed electronically in its entirely free port.

Doing business in Hong Kong, China, is beneficial to e-commerce store owners in particular because it has access to the planet’s leading manufacturing centre: mainland China (Yatprom, 2019). The government of Hong Kong, China, first enacted the Electronic Transactions Ordinance to provide a clear legal framework for the conduct of e-business in 2001. The ordinance was mostly focused on the use of electronic records and electronic and digital signatures. The Commerce and Economic Development Bureau has taken responsibility for the operation of e-commerce, and the Hong Kong Monetary Authority has ensured

different forms of digital payment (Ince, 2018).

## Comparative analysis

In order to understand the e-commerce environment and trade facilitation implementation in each country, international organizations have developed several indices. UNCTAD, for example, developed the B2C E-commerce Index to measure a country’s preparedness to support online business. The UNCTAD B2C E-commerce Index includes various indicators, such as share of individuals using the internet, share of individuals with an account, secure internet servers and postal reliability. The 2019

ranking of Jordan, Oman and Hong Kong, China, were 87th, 59th and 15th, respectively, among 152 economies (Table 1). Jordan’s score on the B2C E-commerce Index shows that it needs to improve in all indicators, whereas Oman received relatively good scores except in the category of secure internet servers. Hong

**“The emergence of e-commerce is driving important changes in the ways of conducting international trade.”**

Kong, China, received better scores for all indicators than did Jordan and Oman. The percentages of internet users in Jordan, Oman and Hong Kong, China, were reported as 85.3 per cent, 78.5 per cent, and 89.3 per cent in other sources (Internet World Stats, 2020).

On the ICT Development Index 2017, which reflects ICT access, ICT use and ICT skills, Jordan, Oman and Hong Kong, China, were ranked as 70th, 62th and 6th, respectively, among 176 economies (ITU, 2017)

**Table 1: UNCTAD B2C E-commerce Index, Jordan, Oman and Hong Kong, China**

	2019 B2C E-Commerce rank	Share of individuals using the internet	Share of individuals with an account	Secure internet servers	Universal Postal Union (UPU) postal reliability score
Hong Kong, China	15	89	95	85	92
Oman	59	80	74	47	72
Jordan	87	67	42	43	44

Source: UNCTAD (2019).

(Table 2). ICT access indicators include the data of the available ICT infrastructure and individuals' access to basic ICTs. ICT usage indicators reflect ICT intensity and usage. Also, ICT skills were determined by years of schooling and secondary and tertiary enrolment ratios. In the 2017 ICT Development Sub-Index, Hong Kong, China, was ranked higher than Jordan and Oman in all three subcategories. However, although Oman had better ranking than Jordan in the main index, Jordan scored better than Oman in the Sub-Index of ICT use and ICT skills.

Both the UNCTAD B2C E-commerce Index and the ICT Development Index help us to understand the general level of support for e-commerce, but they cannot indicate the nature of the relationship between e-commerce and trade in the three countries. To study

the specific aspect related with trade, the World Bank's Logistic Performance Index (LPI) was used to compare the performance of the three economies. Jordan, Oman and Hong Kong, China, ranked 84th, 43th and 12th, respectively, out of 160 economies in the LPI Index (Table 3). Jordan's ranking is in the middle range, while Oman ranked 3rd in the MENA region in 2019 following the United Arab Emirates (UAE) and Qatar. As per the LPI Index, Hong Kong, China, stands as the world's top performer in logistics, particularly in the categories of international shipments and customs. The World Bank indicates that global logistics have changed as a result of the development of e-commerce, use of technology, new risks (cybersecurity), etc. Six indicators in the LPI Index are closely related to ICT development, however, they have

**Table 2: ICT Development Index, Jordan, Oman and Hong Kong, China**

	2017 ICT Development Index ranking	2017 ICT access sub-index	2017 ICT use sub-index	2017 ICT skills sub-index
Hong Kong, China	6th	3rd	10th	32th
Oman	62th	48th	55th	90th
Jordan	70th	83th	54th	77th

Source: ITU (2017).

**Table 3: World Bank LPI indicator ranking 2018 of the MENA Region, Jordan, Oman and Hong Kong, China**

Indicators	MENA		Jordan		Oman		Hong Kong, China	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Overall LPI	2.78	-	2.69	84	3.20	43	3.92	12
Customs	2.54	-	2.49	88	2.87	44	3.81	9
Infrastructure	2.76	-	2.72	70	3.16	39	3.97	15
International shipments	2.73	-	2.44	119	3.30	36	3.77	8
Logistics competence	2.68	-	2.55	93	3.05	49	3.93	12
Tracking and tracing	2.79	-	2.77	84	2.97	66	3.92	15
Timeliness	3.18	-	3.18	76	3.80	29	4.14	15

Source: World Bank (<https://lpi.worldbank.org/international/global>).

a limited ability to explain the effect of e-commerce on logistics.

According to the Doing Business report Trading Across Borders, both the cost of and the time to export and import are decreasing in Jordan, Oman and Hong Kong, China (Table 4). The report shows that Hong Kong, China, takes only 2 hours of procedures to export and 20 hours to import. Cost

and time to import are declining in all three economies, but not as much as cost to export in Hong Kong, China. It can be inferred that the recent reduction of cross-border trade cost and time was supported by electronic infrastructure.

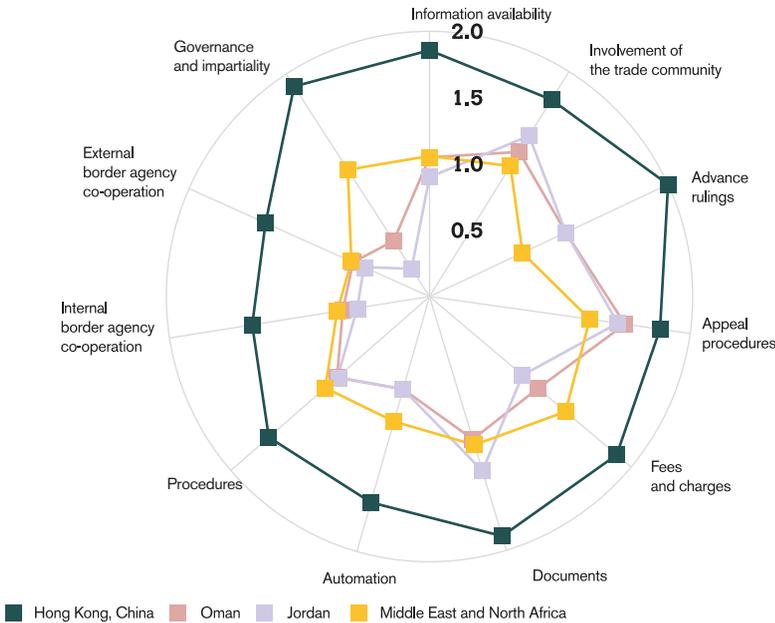
To understand the trade facilitation efforts in Jordan, Oman and Hong Kong, China, OECD Trade Facilitation

**Table 4: Changes in cost and time to export and import in Jordan, Oman and Hong Kong, China (2013, 2016 and 2019)**

Indicator Year	Jordan			Oman			Hong Kong, China		
	2013	2016	2019	2013	2016	2019	2013	2016	2019
Cost to export (US\$ per container)	825	577	231	745	630	386	575	557	12
Average time to export (hours)	312 (13 days)	38	59	240 (10 days)	91	59	120 (5 days)	22	2
Cost to import (US\$ per container)	1,335	606	396	680	674	518	565	619	323
Average time to import (hours)	360 (15 days)	141	134	216 (9 days)	101	77	120 (5 days)	22	20

Source: World Bank, *Doing Business Report* (2013, 2016, 2019).

**Figure 1: Trade facilitation performance by OECD indicators in Jordan, Oman, MENA and Hong Kong, China, 2019**



Source: OECD, 2019.

Indicators and the OECD “Compare your country: trade facilitation” tool was also used for the analysis. The Average Trade Facilitation Performance scores of Jordan and Oman are 0.93 and 0.97, respectively out of 2, while Hong Kong, China’s score is 1.72 (Figure 1). Hong Kong, China, received the highest score, 2, on the “Advance rulings” indicator, and it received high scores on “Fees and charges” and “Documents”. By examining 11 OECD indicators, we found that all subcategories of “Automation” and parts of subcategories of “Information availability”, “Fees and charges” and “External border agency co-operation” have a close relationship with internet and ICT technology. Hong Kong, China, shows better performance than both Jordan

and Oman in most subcategories related to e-commerce, with the exceptions of “Processing system-electronic payment” and “ITC quality”. Both Jordan and Oman got the best score in “Customs website”, “Online feedback” and “ITC quality”. Jordan is working better than Oman in “Electronic import declarations” and “Full-time automated processing”. Oman performs better than Jordan in “Information on fees”, “Electronic pre-arrival processing”, “Electronic payment”, “Processing system-electronic system”, “Automated risk management” and “External data harmonisation”. The comparative analysis of subcategories of OECD Trade Facilitation Indicators clearly shows the specific areas in which Jordan, Oman and Hong Kong, China,

need to make improvements regarding e-commerce infrastructure for trade.

Recently, the governments of Jordan and Oman introduced a number of trade reforms to address some of the issues outlined above and to improve trade facilitation. For example, Jordan also implemented the UNCTAD Automated System for Customs Data (ASYCUDA) to administer customs' clearance operations (WTO, 2015b). The WTO stated that Jordan's customs practices lead the Middle East in the implementation of a "single window" system (WTO, 2015a). In addition, Jordan makes trade-related information available in a transparent manner. Jordan completed the implementation of UNCTAD ASYCUDA (Automated System for Customs Data), computerization of customs procedures in 2010, which has resulted in reduced declaration processing time and increased accuracy of verifying declarations without additional manpower (UNCTAD, 2011). Likewise, in 2016, Oman transferred all cargo operations from Sultan Qaboos port to the more modern Sohar port. This will reduce time for border compliance for both exporters and importers. In 2017, Oman also introduced a new single window, a one-stop facility, to allow for fast electronic clearance of goods. The empirical assessment indicates that other countries in the region can be affected by trade facilitation improvement in Oman (Al Shammakhi, Akintola and Boughanmi, 2018). Both Jordan and Oman are making efforts to improve trade facilitation implementation with more advanced systems and ICT development in order to meet the rapid changes of global trade environment.

## Conclusion

The emergence of e-commerce is driving important changes in the ways of conducting international trade. We can say that every single improvement of trade facilitation implementation should be supported by an electronic system. In order to provide e-commerce-based services, other technologies, such as telecommunications, internet, logistics, transportation and electronic systems, should be implemented in advance. Fortunately, the statistics show that Jordan and Oman have better infrastructures than surrounding countries. Jordan and Oman issued laws to oversee electronic transactions early on, and trading activities through e-commerce have been increasing in both countries.

Through a comparative study in terms of e-commerce, logistics and trade facilitation, we have reviewed the status and performance of Jordan, Oman, and Hong Kong, China. The study showed that Hong Kong, China, implemented modern trade facilitation measures compatible with its reputation of being the world's best open market. Hong Kong, China, provides the easiest and fastest customs procedures in the world with virtually all customs declarations and related documents processed electronically in its free port. Also, comparisons of data from the UNCTAD B2C E-commerce Index, the ITU ICT Development Index, the World Bank LPI and the OECD Trade Facilitation Indicators showed that Jordan and Oman need to prepare a better e-commerce environment and to work on several of the trade facilitation indicators in order to catch up with the performance of Hong Kong, China.

It is important to understand the goal of Hong Kong, China, of free trade influences in all areas related to customs, transportation, logistics and infrastructure. As the case of Hong Kong, China, shows, governmental willingness is influential in expediting each trade facilitation provision. Jordan and Oman need to bridge the gap between policy and actual practice in all governmental organizations in terms of trade facilitation and e-commerce. Oman's ITA calls attention to improve citizens' e-commerce skills through awareness and training programs (Times of Oman, 2019). It means that building citizens' capacity is also an important factor of e-commerce along with government intervention. By improving the implementation of trade facilitation measures and increasing e-commerce capacity, Jordan and Oman can better prepare for trade prosperity driven by the global digital economy.

## Annex 1

### Brief background on the economies of Jordan, Oman and Hong Kong, China, and their trade patterns

#### *Jordan*

Jordan was reclassified from an upper-middle-income to a lower-middle income country by the World Bank in 2017 (World Bank, 2017). Unlike other countries in the Middle East, Jordan's economy is not oil-dependent. Hence, Jordan mainly consumes the imported energy that accounts for 25-30 per cent of its imports (CIA, 2019). Jordan's economy is one of the smallest among Middle Eastern countries, and it heavily relies on foreign assistance due to the insufficient supplies of natural

resources, such as water and oil (CIA, 2019). Jordan had a budget deficit of approximately US\$ 9.78 billion in 2017, and the current account balance is estimated to minus 8 per cent of GDP in 2020 (World Bank, 2019a).

Since 2000, Jordan has been expanding foreign trade in order to attract foreign investment (CIA, 2019). Recently, Jordan revitalized trade with its neighbours, especially Iraq, Syria and Iraq, where crises disrupted major trade routes (World Bank, 2019b). The percentages of exports and imports were 34.2 per cent and 58 per cent of GDP, respectively, in 2017 (CIA, 2019). The simple average tariff rate was 9.9 per cent, and the final bound tariff rate went up to 16.3 per cent in 2017 (WTO, 2016a). Jordan's main exported products are garments, agricultural products, potassic fertilisers, medications, natural calcium phosphates and so on. Jordan's top imports are agricultural products (22.3 per cent), fuels and mining products (15.8 per cent) and manufactures (57.9 per cent), according to WTO statistics (WTO, 2018).

Jordan's export percentages by destination are the United States (21.5 per cent), the Kingdom of Saudi Arabia (11.3 per cent), Iraq (7.3 per cent), India (6.9 per cent) and the United Arab Emirates (UAE) (4.7 per cent). The most imports come from the European Union (28) (21.9 per cent), China (13.5 per cent), the Kingdom of Saudi Arabia (13.5 per cent), the United States (9.8 per cent) and the UAE (4.9 per cent). The statistics inform that Europe and China supply in total around 35.4 per cent of Jordan's total imports. Also, the Kingdom of Saudi Arabia is Jordan's biggest trading partner among Gulf countries.

### Oman

As classified by the World Bank, Oman is considered to be an upper-middle income country with a relatively small oil-exporting sector compared to its GCC neighbours. However, the hydrocarbon sector (oil and gas) continues to be the main driver of the economy, accounting for 30 per cent of GDP, 73 per cent of government revenues and 53 per cent of merchandise exports in 2017 (CBO, 2017). Despite the recovery of oil prices and fiscal consolidation, Oman still had a budget deficit amounting to US\$ 9.1 billion, or approximately 13 per cent of GDP in 2017 (CBO, 2017). The government invigorated its economic diversification policy in recent years by improving the investment climate, promoting tourism and enacting laws to encourage investment in the logistics sectors and trade-related activities.

Over the years, Oman has opened up to international trade to boost its economy. In 2015, the value of exports and imports taken together equalled 108.5 per cent of GDP (WITS, 2015). The average applied tariff rate was 5.5 per cent while its bound tariff stood at 14.01 per cent (WTO, 2016a). Oman's main exports are crude petroleum, gas, refined petroleum, nitrogenous fertilizers and acyclic alcohols. Its top imports are food and agricultural products (12.9 per cent), fuels and mining products (13.4 per cent) and manufactures (73 per cent) (WTO, 2018).

The top export destinations of Oman are China (43.6 per cent), the UAE (7.5 per cent), India (3.8 per cent), Chinese Taipei (3.6 per cent) and the United States (3.3 per cent). The main imports originate from the UAE

(45.1 per cent), the European Union (28) (7.8 per cent), China (4.8 per cent) and India (4.8 per cent). Within the GCC, the UAE is Oman's biggest trading partner, supplying around 45 per cent of Oman's imports. The European Union and Central Asia supply around 11 per cent of Oman's total imports (WITS, 2015).

### Hong Kong, China

The economy of Hong Kong, China, depends heavily on the service industry and trade due to the lack of many natural resources. Hong Kong, China, is dedicated to providing the best trade-related services to international businesses and is a great example to study the trade facilitation experience. Therefore, Hong Kong, China, has earned the reputation of being the world's freest economy (Heritage Foundation, 2019). The economy of Hong Kong, China, is classified as high-income by the World Bank (World Bank, 2020). In addition, Hong Kong, China, was the first member of the WTO that decided to ratify the TFA.

In 2017, the total value of trade exceeded the GDP in Hong Kong, China, and the percentage of the value of trade over GDP was 189.2 per cent (WTO, 2018). Hong Kong, China, has no tariff on imported goods and levies excise duties on only four products: hard alcohol, tobacco, oil and methyl alcohol. The major exported products are electronic integrated circuits, gold and radio-telephony electrical apparatus. Trade in commercial services also accounts for a huge portion of trade in Hong Kong, China. Main imported goods are electronic integrated circuits, radio-telephony transmission tools, line telephony electrical apparatus, gold and automatic data-processing machines.

The main export destinations of Hong Kong, China, are mainland China (54.1 per cent), the European Union (28) (8.7 per cent), the United States (7.7 per cent), India (3.8 per cent), Japan (3 per cent) and Other (22.6 per cent). The high-ranked imports originate from

China (44.6 per cent), Chinese Taipei (7.2 per cent), the European Union (28) (6.5 per cent), Singapore (6.4 per cent), Japan (6.1 per cent) and Other (29.3 per cent). Because Hong Kong, China, is the world's best trade hub, many other countries engage in trade with Hong Kong besides main trade partner countries.

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## Comments



**ALEXANDROS SARRIS\***

Electronic commerce and digital trade have transformed both the nature of trade as well as the nature of trade facilitation in the last three decades. Digitalization has increased the scale, scope and speed of trade (Lopez-Gonzalez and Ferencz, 2018). On scale, digitalization enables firms to reach larger numbers of digitally connected customers across the globe and facilitates outsourcing. On scope, digitalization allows many services such as warehousing, logistics, e-payments, etc. to become more tradable and be combined with goods trade. Finally, trading has become faster, especially for services, but also enabling goods to move faster across borders by lowering the cost of customs clearance and processing of relevant paperwork. The latter are parts of what is commonly defined as trade facilitation.

The efforts of countries to improve trade facilitation is based on the perceptions that trade facilitation reduces trade costs (Moisés, Orliac and Minot, 2011) and that lower trade costs increase trade (Hornok and Koren, 2015; Martincus, Carballo and Graziano, 2015). Moisés, Orliac and Minot (2011) estimate that the trade cost reduction potential of all trade facilitation measures could reach 10 per cent of trade values.

Trade facilitation via digitalization is affected by the degree of digital economy maturity, which in turn depends on communications and digital infrastructure, such as internet coverage of the area of the country, speed of connections and the proportion of the population who are knowledgeable users of digital platforms and the internet. Countries,

**Table 1: Ratio of trade facilitation indicator value in 2019 to that of 2013 in the three economies analysed in Chapter 9**

	Jordan	Oman	Hong Kong, China
Cost to export (US\$ per container)	0.28	0.52	0.019
Average time to export (hours)	0.189	0.246	0.034
Cost to import (US\$ per container)	0.297	0.762	0.572
Average time to import (hours)	0.372	0.356	0.167

**Source:** Computed from Chapter 9, Table 1.

\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.

**Table 2: Logistic Performance Index rankings of top 10 and bottom 10 economies in 2007 and 2018 and world competitiveness report rankings 2019**

Top 10 in 2007	LPI index ranking in 2007	LPI index ranking in 2018	World Bank world competitiveness ranking 2019
Singapore	1	7	1
Netherlands	2	9	4
Germany	3	1	7
Sweden	4	2	8
Austria	5	4	21
Japan	6	5	6
Switzerland	7	13	5
Hong Kong, China	8	12	3
United Kingdom	9	9	9
Canada	10	20	14
Bottom 10 in 2007	LPI index ranking in 2007	LPI index ranking in 2018	World Bank world competitiveness ranking 2019
Guyana	141	132	*
Chad	142	123	141
Niger	143	157	*
Sierra Leone	144	156	*
Djibouti	145	90	*
Tajikistan	146	134	104
Myanmar	147	137	*
Rwanda	148	57	100
Timor-Leste	149	*	*
Afghanistan	150	160	*

**Source:** Computed from World Bank Excel sheet on international LPI from 2007 to 2018; World Bank, Doing Business 2020.

\* Not reported.

in turn, are uneven with respect to digital economy maturity, with developed countries more advanced than developing countries.

The heterogeneity of countries' digital maturity suggests that efforts to improve digital infrastructure and digital connectivity will produce uneven results, with advanced economies achieving faster and larger improvements in trade facilitation than developing countries. This is documented in Chapter 9 by Awad-

Warrad, Boughanmi and Hwang, who examine the improvements in trade logistics performance, in the form of cost and time to export, between 2013 and 2019 in the three economies they study, two of which are high-income economies (Hong Kong, China; Oman), while the other (Jordan) is considered as upper middle income. In Table 1, we use data from Chapter 9, Table 1, to indicate the ratio of the relevant indicator in 2019 to that of 2013. It is notable that all ratios are smaller than 1, with some being much

lower than 1, suggesting large trade facilitation improvements in a short period.

The point of the above is to indicate that advanced economies are likely to achieve faster trade facilitation decline than less developed ones. Hence trade costs are likely to decline faster in developed economies. This is likely to give these economies a further competitive advantage compared to developing ones.

To explore this idea, Table 2 indicates the Logistics Performance Index (LPI) compiled by the World Bank for the top 10 (in LPI score) and bottom 10 economies in 2007, and their ranking in 2018. It appears that the top 10 in LPI 2007 largely kept their relative position in 2018. Similarly for the bottom 10 in 2007 (out of 150), their rankings in 2018 (among 160 economies) apart from two economies (Rwanda and Djibouti) seem to have stayed near the bottom. The table also exhibits the 2019 world competitiveness rankings for the economies as reported by the World Bank. It appears that the LPI rankings are related to the world

competitiveness rankings for both developed and developing economies, and this suggests that competitiveness and trade facilitation go together.

An aspect of the new international economy is the proliferation of value chains, with products and services that are intermediate inputs to a final product going through many countries or many times through the borders of one country before reaching the final assembly. This suggests that the longer the product value chain the higher the proportion of final product value that

**“Digitalization has increased the scale, scope and speed of trade.”**

can be affected by border measures. It follows that the reduction in trade costs, via increases in efficiency of trade procedures, could expand the length of a given value chain, by reducing the costs of extra steps in the chain. This in turn could reduce obstacles for many small and medium-size enterprises to enter some segments of the value chain, and hence enlarge the production and trade opportunities for such firms. Countries with large improvements in trade facilitation will thus have more chances of entering long global value chains.

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Chapter 10

# The new rules on digital trade in Latin America: regional trade agreements

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## **Abstract**

While recent technological advances have supported an increase in digital trade, this growth has occurred with a lack of clear and defined rules. This deficiency has become an issue for Latin American countries. With the multilateral trade regime impasse, more complex regional and bilateral agreements have emerged. The formulation of digital trade regulation raises many questions. In this chapter we deal with the new rules on digital trade in regional trade agreements (RTAs) recently negotiated by Latin American economies. In this work, special emphasis is given to comparing the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the United States-Mexico-Canada Agreement (USMCA), the most advanced RTAs regarding these issues.

*\* The contents of this chapter are the sole responsibility of the authors and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

The emergence of digital trade is a new phenomenon that governments are not sure how to confront. In this context, many Latin American countries are dealing with international commitments where they do not have domestic regulation. The main concern is how these regulations are created in international agreements and what challenges they represent for the countries. As Wolfe (2018) indicates, “the digital trade story is about how states are learning to solve the problems of state responsibility for something that does not respect their borders while still allowing 21st century commerce to develop”.

Given that digital trade is a recent topic and has appeared in an open World Trade Organization (WTO) new era, direct trade restrictions on digital trade have not yet evolved, so there is little need to liberalize it in the traditional sense. Rather, the focus is on preventing countries from adapting non-digital trade protection measures in this new area (Ciuriak & Ptashkina, 2018, p. 6), as well as facilitating the growth of digital trade.

Government policies can impede digital trade due to differences in regulatory frameworks, some for legitimate or defensible reasons like privacy, consumer protection and national security, and others for reasons considered less legitimate, like protectionism or the promotion of domestic businesses (Monteiro and

Teh, 2017). These policy and regulatory frictions limit the cross-border flows of digital goods, services and data, and the potential gains of digitization for trade and growth are not automatically translated to developing economies (Suominen, 2017a, 2017b). As such, there is a need for clear digital trade provisions in trade agreements to create certainty through new rules.

Currently, digital trade has been seen as of particular concern for developed and large economies, but developing economies, like Chile and Mexico, are increasingly affected and active in this domain. The failure of the WTO to develop clear rules for digital trade has

**“There is a need for clear digital trade provisions in trade agreements to create certainty through new rules.”**

meant that the focus has moved to the bilateral and regional levels, where new norms are being proposed and experimented with. The most developed set of norms can be found in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

and the United States-Mexico-Canada Free Trade Agreement (USMCA).

In this chapter, we first examine the WTO and global digital trade regulations. The second section examines regional agreements, Asia-Pacific Economic Cooperation (APEC) and the CPTPP, and the effects on the Pacific Alliance. CPTPP has been considered as key due to its inclusion of a comprehensive set of new digital trade rules and for its effect on countries in the region. We also include a legal analysis of the USMCA

provisions and compare the USMCA with the CPTPP, in order to understand the ways in which new regulations for digital trade are likely to be interpreted. Finally, some concluding remarks are presented.

## **The WTO and global digital trade regulations**

International digital trade presents a challenge due to the lack of clearly defined global rules, meaning that there is no coherent set of guidelines for countries to ensure the free flow of digital trade internationally (Suominen, 2017a). The last major round of negotiations of the WTO to have been completed, the Uruguay Round, predated the rise of digital trade, and, since then, no real progress has been made to update the rules. The need, however, has been present in the multilateral agenda since 1998, when the WTO Work Programme on Electronic Commerce was created to examine all trade issues relating to digital trade. Although the group was not mandated to create a set of rules, there is a general perception that it has made no substantive progress, and multilateral efforts have stalled (Monteiro and Teh, 2017; Wu, 2017). Although the WTO held a ministerial meeting in Argentina in December 2017, which produced a Joint Statement on Electronic Commerce, there is little indication that the idea will be successful (Meltzer, 2018). Ciuriak and Ptashkina (2018) indicate that the WTO has been largely on the sidelines in shaping the framework for digital and digitally enabled trade.

The “multilateral regulatory framework on e-commerce is incomplete” (Giordano, Ramos Martínez, Michalczewsky and Ramos, 2017,

p. 54). Wu (2017) argues that the limitations of existing WTO rules push members to establish additional legal obligations to govern digital trade. The issues that need to be resolved include definitions of what constitutes digitally traded products and non-physical digital goods and services, how to update WTO classifications challenged by technological advances, improving market access, securing and facilitating cross-border data flows, implementing consumer-related regulatory measures like protecting personal data, stopping unsolicited electronic messages and safeguarding the right to be forgotten, as well as improving security, and finally, facilitating trade through digital means like electronic documentation. Callo-Müller (2019) specifically highlights the need for consumer protection and data protection regulations.

## **Regional agreements: APEC-CPTPP, Pacific Alliance and UMSCA**

Due to the failure of the WTO to successfully work towards a set of multilateral digital trade rules, RTAs have become the focus of efforts to develop digital trade rules (Meltzer, 2018). As a result, “RTAs are sometimes viewed as a laboratory enabling countries to design new provisions and address new issues and challenges” (Monteiro and Teh, 2017, p. 70).

When combined with regional integration schemes like the Pacific Alliance (PA) and the APEC forum, RTAs can facilitate intraregional trade and support the creation of large, integrated digital markets (and the creation of digital giants) that enable local firms to reap economies of scale and thus lower operating costs, as well

as encourage investment and the creation of start-ups. In order for economies to benefit from the changes brought about by the digital economy, it is necessary to establish transparent rules, freedom of innovation, a level playing field and interoperability among economies (Suominen, 2017a, 2017b).

Ciuriak and Ptashkina (2018, p. 15), however, argue that the RTA-driven development of new digital trade rules has probably reached its limits and will probably come to an end with the finalisation of the major agreements currently under negotiation. Moreover, RTAs do not always tackle the full range of problems associated with the changes to global trade, and they tend to avoid certain intractable and politically sensitive issues (Wu, 2017).

Wu (2017) dispels the myth that robust digital trade regulations are only demanded by large developed countries. Although countries in Latin America and the Caribbean have shown a commitment to expanding digital trade opportunities, the lack of common regional rules for digital trade limits the scope for expansion in trade within the region (Meltzer, 2018). Specifically, the opportunities that are created by online cross-border data flows depend on regulations to give consumers and companies the confidence to participate in these interactions, protection of the freedom of data flows across borders and cooperation between countries to protect against and limit negative externalities and possible protectionist measures (Meltzer, 2016).

The capacity of the region to capitalize on developments in digital trade is dependent on the modernization of the region's regulatory framework

(Giordano et al., 2017). The authors find that the types and depth of commitments in RTAs in Latin America (16 intraregional and 19 extra-regional agreements) vary widely, with greater inclusion of digital trade facilitation, some rules regarding market access and near exclusion of user protection commitments. Using CPTPP as benchmark, they conclude that only 13 per cent of the actual commitments on digital trade-related provisions included in their agreement were to be replaced by those included in CPTPP.

Although all RTAs that include Latin American countries have worked on issues related to the digital economy, Patiño, Rojas and Agudelo (2018, p. 36) highlight that the most recent ones, in particular the CPTPP and the Pacific Alliance, put special emphasis on trade and development aspects related to the internet and digital trade.

### **APEC-CPTPP**

The Trans-Pacific Partnership (TPP) was originally considered to be the nucleus of a future Asia Pacific RTA that would cover the APEC zone (Stephenson and Robert in Callo-Müller, 2019). All the current members of the CPTPP are members of APEC, and the group represents just over half of all APEC members. As a consensus-based space for dialogue, APEC's commitment to the digital trade economy is built on non-binding agreements and cooperation between its members, rather than on binding agreements like RTAs, as is the case of the Pacific Alliance Additional Protocol (PAAP) and the CPTPP. However, despite this fact and that not all the topics present in the CPTPP are addressed, the discussion panels and the work of the expert groups have served as the basis for the creation of

public policies in APEC countries and the incorporation of key topics into trade agreements entered into by member states. As such, there is a convergence between the topics looked at by APEC and the CPTPP (Observatorio Estratégico de la Alianza del Pacífico, 2017).

The group has a number of initiatives that focus on digital trade. These include the Electronic Commerce Steering Group, based on the principles established in the 1998 APEC Blueprint for Action on Electronic Commerce, which works to promote digital trade through predictable, transparent and consistent legal, regulatory and policy environments. Its work to strengthen privacy protection and to promote cross-border privacy rules via the voluntary Cross-Border Privacy Rules and System, and the Privacy Recognition Processors System programme stands out (APEC Electronic Commerce Steering Group, 2017). Also important is the Paperless Trading Subgroup, which looks to facilitate paperless trading and the use of electronic documents, and the Data Privacy Pathfinder, which looks to secure cross-border flows of personal information (Suominen, 2017a).

Wu (2017) argues that it is nations belonging to the APEC that most frequently push for the inclusion of privacy-related provisions in RTAs. The author highlights that the APEC ministers have already endorsed the APEC Privacy Framework, which looks to protect the data of individual natural persons, as part of its work to “deal with deficiencies in the policies and regulatory frameworks on electronic commerce and seek to promote the free flow of information and data

across borders” (Patiño et al., 2018). Although it has been a useful reference for policymakers of APEC members when drafting domestic privacy regulations, it is not legally binding (APEC Electronic Commerce Steering Group, 2017). On an interesting side note, Elms and Nguyen (2017) state that the TPP data privacy rules originated in the APEC Policy Framework, indicating a complex and at times reciprocal causal relationship between APEC and the CPTPP.

However, despite the importance afforded to the topic in APEC, there are as of yet no APEC-wide agreements that cover digital trade, and the grouping has made little progress in creating a new regulatory framework (Asian Trade Centre, 2016).

APEC is also relevant in the creation of norms, especially digital privacy rules, which were the basis for the provisions in the CPTPP regarding this topic. However, being a voluntary organization, its norms are not binding. As such, APEC depends wholly on the willingness of the parties to use the work of the various organizations and work groups as the foundation for their own domestic public policies and regulations.

Meltzer (2018) identifies the CPTPP as key due to its inclusion of a comprehensive set of new digital trade rules and for its effect on countries in the region, as Chile, Mexico and Peru are either signatories or have ratified the agreement. For these countries, it is the most robust set of rules for this type of trade and includes a binding commitment to allow the free flow of data, prohibits data localization requirements that could function as an impediment to entering the market,

permits the use of all devices on the internet and requires all groups to adopt privacy protection regulations (Giordano et al., 2017). Meltzer (2018) indicates that the agreement covers 12 different digital trade-specific provisions and groups them under the topic of market access, digital trade facilitation and the protection of users.

However, despite the progressiveness of the agreement, Wolfe (2018) indicates that not all the provisions in the CPTPP have the same language, with some being aspirational and others obligatory. Applying the analytical scheme of Horn, Mavroidis and Sapir (2010), WTO+, which are areas where RTAs go beyond WTO obligations, and WTO-X, which are areas not currently covered by the WTO, Wolfe (2018) indicates that the majority of the digital trade provisions in the CPTPP are WTO-X, with the exception of making the WTO moratorium on custom duties on digital trade permanent. Another issue is the legal enforceability of the provisions. Some are aspirational with vague enforceability or look to promote only dialogue and cooperation, so not all provisions in the CPTPP are legally enforceable.

### **Pacific Alliance**

Despite the shortcomings of the CPTPP, it has become a model for other agreements, including the PA and the North American Free Trade Agreement (NAFTA) renegotiations (Meltzer, 2018). According to Michalczewsky and Ramos (2017), the PA agreements regarding digital trade found in the PAAP most closely match the provisions found in the CPTPP when compared to other Latin America intraregional or extra-regional RTAs.

The provisions related to customs duties, consumer protection, personal data protection, paperless commerce, spam and cooperation with SMEs are consistent between the PAAP and the CPTPP (Observatorio Estratégico de la Alianza del Pacífico, 2017). According to Michalczewsky and Ramos (2017), this similarity could arise because the agreements were negotiated at the same time and Chile, Mexico and Peru are members of both the PA and the CPTPP. Also relevant is that fact that Australia, Canada, New Zealand and Singapore are associate members of the PA, as well as States that participated in the negotiations of the original TPP. Due to this participation in TPP negotiations, and its high standards in digital trade, this agreement's text is used as a benchmark for the PAAP (Observatorio Estratégico de la Alianza del Pacífico, 2017).

The PAAP prohibits the imposition of customs duties on digital trade, but permits internal taxes and other charges, as well as mandating the adoption of measures to protect against unsolicited electronic commercial messages and requiring a simple commitment of the parties to consider negotiating a cross-border flow of information provision (Wu, 2017). Interestingly, the PAAP is one of the very few RTAs to incorporate specific provisions on the use and location of computing facilities (Monteiro and Teh, 2017). The agreement also promotes interoperability among the regulatory frameworks of the member countries, promotes the inclusion of small and medium-size enterprises (SMEs) in digital trade, and is working with the objective to generate a regional digital market, cybersecurity and

common public-private dialogues (Suominen, 2017a).

The PAAP is not, however, a simple copy of the CTPP and has been called “a hybrid product that aims to balance the creation of a business-friendly environment (US style) with the need to safeguard consumer and data protection (EU style)” (Callo-Müller, 2019, p. 200). Despite the similarity and the fact that the PAAP replicates two thirds of the standards of the CPTPP, “the PAAP does not include core issues such as a suitable domestic legal framework, guaranteeing freedom of internet access, and avoiding measures that could increase transaction costs (localization of data servers, source codes). It also leaves out cooperation around cyber security, a

key factor in building the confidence needed for consumers and companies to get involved in online transactions”

(Michalczewsky and Ramos, 2017). The PAAP has no intellectual property chapters, and it lacks norms on internet service provider liability.

Neither does it include TPP-style provisions for interoperability, meaning that it does not go as far as the TPP and its successor, but further than the current RTA between the PA members and with the European Union and the United States (Callo-Müller, 2019).

Also missing is a dispute settlement mechanism. In general terms, the PAAP develops the topics found in the TPP and CPTPP in less depth (Observatorio Estratégico de la Alianza del Pacífico, 2017).

## USMCA

Chapter 19 of the USMCA regulates digital trade, but does not apply to government procurement or to measures related to information held or processed by or on behalf of government (Article 19.2(3)). One exception to this exemption for government-controlled information is for “open government data”, which Article 19.18 defines as “government information”, including data that a Party chooses to make available to the public. Article 19.18 requires Parties to “endeavour to ensure that the information is in a machine-readable and open format and can be searched, retrieved, used, reused, and redistributed”. “Government information” is defined as “non-proprietary information, including data, held by the central government”.

Article 19.11(1) bans restrictions on “the cross-border transfer of information, including personal information, by electronic means if this activity is for the conduct of the business of a covered person”. “Personal information” is defined as “information,

including data, about an identified or identifiable natural person”.

Article 19.11(2) provides an exception to the obligation in Article 19.11(1), for measures that are:

[N]ecessary to achieve a legitimate public policy objective, provided that the measure:

(a) is not applied in a manner which would constitute a means of arbitrary

**“Regional rules have emerged to fill the gap left by the absence of multilateral solutions.”**

or unjustifiable discrimination or a disguised restriction on trade; and

(b) does not impose restrictions on transfers of information greater than are necessary to achieve the objective.

This exception uses language from GATT Article XX, which has also been incorporated into the General Agreement on Trade in Services (GATS), and other WTO Agreements. WTO jurisprudence on this language serves as a source of guidance on how to interpret USMCA Article 19.11(2). The party invoking the exception in Article 19.11(2) would have the burden of proof to show that the exception qualifies under this language.

The annex provides a more detailed analysis of how a dispute settlement panel is likely to interpret USMCA Article 19.11(2). The context indicates that many public policy objectives are likely to qualify as “legitimate”. Articles 19.11(2) (a) and (b) are likely to be interpreted in a manner that is similar to interpretations of the same terminology in WTO jurisprudence.

### **USMCA versus CPTPP**

It appears that the CPTPP is less restrictive towards measures taken by national governments, based on the following differences: (1) CPTPP has an explicit recognition that Parties may have their own regulatory requirements, whereas USMCA does not; (2) CPTPP requires Parties to allow cross-border information transfer, whereas USMCA bans prohibitions and restrictions; and (3) USMCA applies a necessity test to justify public policy restrictions, whereas there is no necessity test in CPTPP.

CPTPP Article 14.11 is significantly different from USMCA Article 19.11. First, CPTPP Article 14.11(1) provides that, “The Parties recognise that each Party may have its own regulatory requirements concerning the transfer of information by electronic means”. USMCA Article 19.11 excludes this provision, indicating less tolerance for different approaches to managing cross-border data flows (Casalini & González, 2019; Scassa, 2018).

Second, CPTPP Article 14.11(2) provides that, “each Party shall allow the cross-border transfer of information by electronic means, including personal information, when this activity is for the conduct of the business of a covered person”. This contrasts with the USMCA Article 19.11 equivalent, which bans prohibitions and restrictions, which is arguably a stronger wording for this obligation, particularly in light of the wording of the exception.

Third, CPTPP Article 14.11(3) differs from USMCA Article 19.11(3) in that the former does not use the term “necessary”, whereas that latter uses the term “necessary”, not once, but twice. CPTPP Article 14.11(3) provides:

Nothing in this Article shall prevent a Party from adopting or maintaining measures inconsistent with paragraph 2 to achieve a legitimate public policy objective, provided that the measure:

(a) is not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade; and

(b) does not impose restrictions on transfers of information greater than are required to achieve the objective.

The CPTPP language makes the relevance of WTO jurisprudence regarding the term “necessary” doubtful. Moreover, the term “required” sets a lower bar than the term “necessary”. The result is that the USMCA provisions strengthen the obligation and weaken the exception, thereby changing the balance between the rights of governments to regulate cross-border data flows in the public interest and the rights of big data to engage in cross-border data mining that facilitates the development of new technologies, particularly those based on artificial intelligence.

## Conclusion

This review has examined digital trade rules in key Latin American RTAs: the CTPP, PA and USMCA. These regional rules have emerged to fill the gap left by the absence of multilateral solutions. These RTAs are among the most advanced in the regulation of digital trade, particularly in the key areas of privacy, access to information and data flows. However, the CPTPP and USMCA have diverged in their terminology, resulting in distinct approaches to managing cross-border data flows and divergence in the relevance of WTO jurisprudence to key exceptions. The end result of the absence of multilateral rules is to set the stage for a “spaghetti bowl” of rules in the region on this topic.

## Annex

USMCA Article 19.11(2) does not provide an illustrative list of legitimate objectives. However, USMCA Chapter 19 recognizes the importance of laws governing electronic transactions (Article 19.5), online consumer protection (Article 19.7), personal

information protection (Article 19.8), regulations for spam (Article 19.13), security in electronic communications (Article 19.14), cybersecurity (Article 19.15), as well as intellectual property rights, criminal laws and law enforcement (Article 19.17), so these are likely to qualify as a legitimate objective. USMCA Chapter 11 incorporates Article 2.2 of the TBT Agreement, so its list of legitimate objectives is also part of the interpretative context of Article 19.11(2): national security requirements; the prevention of deceptive practices; and the protection of human health or safety, animal or plant life or health, or the environment. For the purposes of, inter alia, Chapter 19, paragraphs (a), (b) and (c) of GATS Article XIV are incorporated into and made part of the USMCA, *mutatis mutandis*. GATS Article XIV(a) permits measures “necessary to protect public morals or to maintain public order”, GATS Article XIV(b) permits measures “necessary to protect human, animal or plant life or health”, and GATS Article XIV(c) permits measures “necessary to secure compliance with laws and regulations... including those relating to (i) the prevention of deceptive and fraudulent practices...; (ii) the protection of the privacy of individuals in relation to the processing and dissemination of personal data...; (iii) safety”. Given the incorporation and application of these provisions, these should all qualify as legitimate objectives as well. However, in the context of Article 19.11(2), the application of GATS Article XIV provisions would have to be applied in a manner that is consistent with the language used in Article 19.11(2), particularly the language regarding necessity and the incorporation of language from the GATS Article XIV

*chapeau*, which omits the GATS language regarding discrimination “between countries where like conditions prevail”.

The Appellate Body in *US – Gambling*<sup>1</sup> interpreted the term “necessary” in GATS Article XIV(a) to mean the same as the term “necessary” in GATT Article XX. Thus, the term “necessary” has been given the same interpretation in similarly worded exceptions in covered agreements that apply to different sectors (goods and services). While USMCA Article 19.11(2) addresses a more specific sector, *US – Gambling* indicates that this is not an obstacle to applying the same interpretation to the term “necessary”. As the Appellate Body noted in *US – Stainless Steel (Mexico)*,<sup>2</sup> WTO members cite WTO jurisprudence in legal arguments in dispute settlement proceedings and take the jurisprudence into account when enacting or amending national legislation. WTO members also take the jurisprudence into account in trade negotiations. Thus, the interpretation of identical terms should be similar, given the similarities in the language that is used in the GATT, GATS and USMCA provisions, the fact that all three are exceptions and the similar contexts of these provisions.

The context of USMCA Article 19.11(2) is not identical to that of GATS Article XIV and GATT Article XX. The term “legitimate public policy objective” is broader in USMCA Article 19.11(2) because it encompasses a wider range of objectives, some of which are specific to digital trade. Nevertheless, given the similar wording and context, GATT and GATS jurisprudence suggests the following analysis would be appropriate. First, the party invoking

the exception must make a *prima facie* case that the policy goal at issue in its measure qualifies as a “legitimate public policy objective”. Once it is established that the policy goal fits the exception, the party would then have to prove that the measure is “necessary” to achieve the policy goal. This analysis takes place in light of the level of risk that a WTO member has set for itself. To demonstrate that the measure is necessary involves weighing and balancing a series of factors. First, the greater the importance of the interests or values that the challenged measure is intended to protect, the more likely it is that the measure is necessary. GATT Article XX jurisprudence has addressed the importance of human life and health (*EC – Asbestos*<sup>3</sup>) and environmental protection (*Brazil – Retreaded Tyres*<sup>4</sup>), and would be relevant at this stage of the analysis. Second, the greater the extent to which the measure contributes to the end pursued, the more likely that the measure is necessary. In *Brazil – Retreaded Tyres*, the Appellate Body noted that if a party is seeking to demonstrate that its measures are “necessary”, it should seek to establish that need through “evidence or data, relevant to the past or present”, to establish that the contested measures contribute to the attainment of the pursued objectives. However, this requirement can be met with qualitative evidence. Third, the less WTO-inconsistent the challenged measure is, the more likely it would be considered necessary. The final issue is whether a WTO-consistent alternative measure, which the WTO member concerned could reasonably be expected to employ, is available, or whether a less WTO-inconsistent measure is reasonably available. The analysis of the availability of less-

restrictive alternative measures would be relevant to the requirement in USMCA Article 19.11(2) that the measure's restrictions on transfers of information are not be greater than are necessary to achieve the objective.

The party invoking the exception may point out why alternative measures would not achieve the same objectives as the challenged measure, but it is under no obligation to do so in order to establish, in the first instance, that its measure is "necessary". If the other party raises a WTO-consistent alternative measure that, in its view, should have been taken, the party invoking the exception would be required to demonstrate why its challenged measure nevertheless remains "necessary" in light of that alternative or, in other words, why the proposed alternative is not, in fact, "reasonably available". If the party invoking the exception demonstrates that the alternative is not "reasonably available", in light of the interests or values being pursued and the party's desired level of protection, it follows that the challenged measure must be "necessary" (*US – Gambling*).

In *Brazil – Retreaded Tyres*, the Appellate Body decided that an alternative measure cannot be considered to be "reasonably available" when it is simply of a theoretical nature, for example, when the respondent cannot adopt it or imposes an undue burden on that member, such as "prohibitive costs or major technical difficulties". In this case, the alternative of collecting tyre waste and incinerating it in special facilities was rejected. In addition, the alternative measure must maintain the respondent's right to achieve the desired level of protection with respect

to the pursued objective. For a proposed alternative to be viable, it must be less trade-restrictive and make at least an equivalent contribution to the protection of human, animal or plant life or health. Once a viable alternative has been proposed, it is for the respondent to demonstrate why such a measure is not reasonably within his reach. In the USMCA context, this could raise the issue of whether the availability of alternatives might be different for Mexico, given its level of economic and technological development.

The requirement that the measure is not applied in a manner that would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade should be similar to that in the GATT Article XX and GATS Article XIV *chapeau*, minus the analysis of "countries where like conditions prevail". The GATT Article XX and GATS Article XIV *chapeau* prohibits both *de jure* and *de facto* discrimination. Footnote 5 in USMCA Article 19.11(2) would be relevant to determining whether the discrimination is arbitrary or unjustifiable: "A measure does not meet the conditions of this paragraph if it accords different treatment to data transfers solely on the basis that they are cross-border in a manner that modifies the conditions of competition to the detriment of service suppliers of another Party". In *Brazil – Retreaded Tyres*, the Appellate Body held that there is arbitrary or unjustifiable discrimination when the reasons given for this discrimination bear no rational connection to the objective, or would go against that objective. In USMCA Article 19.11(2), the relevant objective would be the legitimate policy objectives noted above.

## Endnotes

- <sup>1</sup> Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, WT/DS285/AB/R, adopted 20 April 2005.
- <sup>2</sup> Appellate Body Report, *United States – Final Anti-Dumping Measures on Stainless Steel from Mexico*, WT/DS344/AB/R, adopted 20 May 2008.
- <sup>3</sup> Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R, adopted 5 April 2001.
- <sup>4</sup> Appellate Body Report, *Brazil – Measures Affecting Imports of Retreaded Tyres*, WT/DS332/AB/R, adopted 17 December 2007.

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## Comments



**ROHINTON P. MEDHORA\***

At a time when international trade is stagnating, e-commerce figures are dazzling, registering double-digit growth rates for the past few years globally and in every major country. Latin America is no exception to this trend. Yet, as this chapter and others in this volume point out, policy and regulatory frameworks for e-commerce vary across countries, reflecting local exigencies and governance capacities to keep up with this very dynamic sector. Moreover, a focus on creating a harmonized regime for the governance of e-commerce quickly bleeds into more contentious “behind the border” matters related to the policy space national authorities require to balance imperatives such as unfettered commerce, the privacy and security of citizens and their data and indeed the ability of countries to safeguard the quality of their democracy.

In the absence of a meaningful multilateral framework in this regard, regional trade agreements (RTAs) are forging ahead. In Latin America alone, as this chapter shows, the Asia-Pacific Economic Cooperation-Comprehensive and Progressive Trans-Pacific Partnership (APEC CPTPP), Pacific Alliance and the United States-Mexico-Canada Agreement (USMCA) have provisions for e-commerce. The differences are instructive, and the chapter is correct

in its conclusion that the USMCA indicates “less tolerance for different approaches to managing cross border data flows”. Worryingly, the chapter is also correct in surmising that in the absence of multilateral rules, RTAs establish precedent and practice that might eventually become the multilateral norm.

There are two areas in particular where the seeming technocratic e-commerce-related provisions of the USMCA mask deeper and more sensitive issues of power and national sovereignty. One is data localization; the other is the capacity of national authorities to hold multinational digital platforms accountable for the content they carry.

The treatment of data localization in the Trans-Pacific Partnership (TPP) and USMCA is instructive. Where the TPP equivocated on the location of computing facilities, the USMCA provision on the matter (Article 19.12) is short and not so sweet, at least for those who read more into data localization policies than simply the enabling of trade: “No Party shall require a covered person to use or locate computing facilities in that Party’s territory as a condition for conducting business in that territory.”

Once data is seen only through a commercial lens and not as an aspect

*\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*

of personal protection and privacy, the logic of ever more openness makes sense. But examples abound of the non-economic dimensions of data, lost when data is treated strictly through the trade agreement medium. A Canadian who legally purchases cannabis online with his credit card might be denied entry into the United States for having bought a substance banned in the United States, just because the “shadow” of the financial transaction was not localized. Or, if the smart city partnership in Toronto with Sidewalk Labs, a subsidiary of Alphabet, had proceeded (it was called off in May 2020), Canadians may well have desired that the detailed data about their city and their lives in it remain in the country (Hirsh, 2018; Scassa, 2018).

Ironically, the human rights community is concerned about forced data localization in countries with authoritarian regimes (Centre for Internet and Society, 2019). But it is safe to say that the categorical language on data localization in the USMCA is not driven by potential human rights violations in Canada, Mexico or the United States.

There are multiple dimensions to this issue. Reductionism to commerce might be good for commerce and result in welfare gains to countries but also misses potential welfare losses.

The USMCA also uses the “safe harbour” provision to liberate digital

platforms from responsibility for the content they carry. Free speech advocates see this as desirable (Geist, 2018). Others look at the “weaponization” of platforms like Facebook, Twitter and YouTube during recent votes such as the 2016 presidential election in the United States and the Brexit referendum and the livestreaming of the terror attacks in Christchurch, New Zealand, in March 2019 as indications that the unwillingness or inability of digital platforms or governments to regulate content has important social and political consequences.

**“Policy and regulatory frameworks for e-commerce vary across countries, reflecting local exigencies and governance capacities to keep up with this very dynamic sector.”**

There is currently an ongoing lively discussion on how content on digital platforms might be best managed (Etlinger, 2019). Safety must be balanced with freedom of speech. Models of content regulation ranging from none to purely government-imposed to self-regulating and public-private partnerships (such as Facebook’s Oversight Board (Klonick, 2019)) are currently being evaluated. It is entirely likely that one size does not fit all in this

case, and that the political economic process in different countries might arrive at different solutions.

Given that in the Western world the major platforms are based in the United States, and that they command attention in the political discourse in the country, the laissez-faire approach taken towards these companies in the United States is

understandable. The projection of this political economy, via RTAs, into other countries removes their ability to view this situation differently. In effect, the RTA entry point is used to manage policy space for areas that go well beyond e-commerce.

Traditionally, one of the arguments for the “spaghetti bowl” of RTAs has been their potential to deal rapidly and creatively with new issues, serving as “hot houses” in which policy approaches are tried before they are

dropped or modified and moved into the multilateral sphere. It is equally possible that RTAs act as a ratcheting mechanism, locking-in norms and practices negotiated by powerful players (whose power is even further enhanced in a regional setting) that stand to become a multilateral standard.

Although the authors of the Latin America chapter do not quite say as much, their analysis points to precisely this risk.

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A man with a beard and glasses, wearing a blue cap and a blue t-shirt, is handling a large cardboard box in a warehouse. He is wearing a blue lanyard with an ID badge. The background is a blurred industrial setting with overhead lights.

**Chapter 11**

# **Convergence on e-commerce: the case of Argentina, Brazil and MERCOSUR**

**Vera Thorstensen and Valentina Delich\***

**Researchers: Fernanda Mascarenhas  
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## Abstract

E-commerce is growing rapidly in Argentina and Brazil, and in both countries the share of the population participating in e-commerce transactions exceeds the Latin American average. Both countries have established a legal framework for data protection, regulation of the internet, consumer protection, taxation of e-commerce, and contracts and e-signatures. Argentina and Brazil also have submitted proposals for negotiations over the treatment of e-commerce transactions in WTO Agreements, and included e-commerce provisions in free trade agreements (FTAs). However, different approaches to internal regulation of e-commerce and differences in positions in international negotiations indicate diverging regulatory approaches that will increase legal uncertainty and thus constrain investments and market expansion in the sector. An exception is the regulation of data protection, where both countries are following principles laid out in the European Union's General Data Protection Regulation (GDPR). Further negotiations between the two countries over regulatory convergence for e-commerce could best be undertaken through the Southern Common Market (MERCOSUR).

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## Introduction

The World Trade Organization (WTO) estimates that, in 2016, global e-commerce sales equalled around US\$ 27.7 billion a year (WTO, 2018a, p. 21). Retail e-commerce is around 10 per cent of global retail and is expected to continue growing at double digit rates (SWS Consulting, 2018). Although there is already a set of agreed definitions of what constitutes e-commerce, including its types, main characteristics and problems, and prospects of its measurement, many different approaches are being taken towards its regulation. In fact, e-commerce challenges both domestic and international rules, and it touches different legal dimensions such as data protection, taxation and intellectual property, among others.

At the multilateral level, key issues under negotiation include e-signatures, (free) flow of data across borders, source code disclosure and the destiny of the moratorium on e-commerce customs duties. Different questions have emerged and challenged policymakers: should countries have the flexibility to restrict cross-border data flows? Should the protection of national security and privacy justify exceptions to the free flow of data? To what extent could a country command or interfere in services provided by local servers?

In Latin America, Argentina and Brazil are in a process of intense socioeconomic policy transformation both at the domestic and international levels. Accordingly, MERCOSUR is being reconfigured so as to open itself to negotiate new FTAs, such as MERCOSUR-Canada, revitalizing old

ones, such as MERCOSUR-European Union, and reinforcing the region by converging with the Pacific Alliance.

This chapter reviews the Argentinean and Brazilian e-commerce regulatory frameworks both separately and as part of MERCOSUR. WTO initiatives on e-commerce negotiations are also discussed in order to examine the countries' positions and contributions at the multilateral level. However, the main concern here is to introduce the challenges to enhance policy regulatory coherence between the two countries.

In order to address those issues, this chapter examines: (i) the B2C retail market for Argentina and Brazil; (ii) both countries' main regulatory frameworks for e-commerce; (iii) both countries' proposals at the multilateral debate, more specifically, internally in the WTO space; (iv) an overview of MERCOSUR's approach towards ongoing FTA negotiations; and, finally, (v) the prospects and challenges Argentina and Brazil share in improving the regulatory environment in order to strengthen e-commerce.

### Characterizing the retail e-markets in Argentina and Brazil

E-commerce transactions can occur either as business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer (C2C) or consumer-to-business (C2B). Examples of B2C companies include Amazon, Dell, Intel and Mercado Libre. Benefits of B2C e-commerce transactions include better customer service and pricing flexibility, the removal of intermediaries, the enhancement of companies' reputation and the broader reach of the products. Moreover, among the several modes used for e-commerce transactions,<sup>1</sup>

it is relevant to distinguish between electronic transactions that occur completely through digital means and those that only rely on digital intermediation.

Although Argentina and Brazil have shown investments in different modes of e-commerce transactions, B2C is still the most representative category in both countries' markets. In 2017, Brazil's e-commerce sales reached US\$ 17.4 billion with 10 per cent annual growth while Argentina achieved US\$ 7.3 billion with 35 per cent annual growth, amounting to a gross domestic product (GDP) share of 0.92 per cent and 1.1 per cent, respectively.

Increases in internet penetration have supported the strong growth of e-commerce in the two countries. Argentina has the highest rate of constant internet users in Latin America (around 71 per cent of its population) and Brazil's internet penetration is around 61 per cent, compared to 59 per cent on average in the region. In addition, both Argentina and Brazil lead the table of active paying customers or accounts (Argentina, 38 per cent; Brazil 37, per cent) (Ecommerce Foundation, 2018).<sup>2</sup>

In addition, the number of digital buyers of goods and services in Brazil was estimated at around 80 million in 2019, which represents 74 per cent of the Brazilian population. For Argentina, the number for 2019 will be around

35.2 million, or almost 80 per cent of the population (Statista, 2019). By now, 54 per cent of all Brazilian internet users have at least once bought goods via online B2C platforms, while in Argentina, due to a higher internet dissemination among its population, this rate is 90 per cent (ABCOMM, 2018).

Both countries also have firms that are major players in the B2C e-commerce market. The Argentina-based digital marketplace Mercado Libre is Latin America's most popular platform – with 56.3 million unique desktop visitors during May 2018. Amazon sites took a distant second place with 22.4 million visitors, followed by

sites owned by Brazil-based B2W Digital (16.1 million) and Alibaba (11.8 million). eBay rounded out the top five retail sites in Latin America, with 9.5 million visitors (Ceurvels, 2018).

Many e-commerce experts argue that Mercado Libre's success in Latin America relates to its know-how of regional culture in a wide sense – including business culture. Among possible explanations, Mercado Libre "offers technological and commercial solutions that address the distinctive cultural and geographic challenges of operating an online-commerce platform in Latin America" (Mercado Libre, 2018) and also that it "knows the idiosyncrasies of the culture, for now at least, this offers it a clear advantage over Amazon" (Duberstein, 2018).

**"E-commerce challenges both domestic and international rules, and it touches different legal dimensions such as data protection, taxation and intellectual property, among others."**

In turn, the Brazilian giant B2W group is the largest online retailer in Brazil and the sixth largest retailer in the country. Operating in several different fields of e-commerce, the companies under its umbrella include Americanas.com, Submarino and Shoptime. In 2016, B2W increased its gross merchandise value (GMV) by 10.6 per cent to US\$ 4.04 billion, an increase of almost US\$ 386,000 in absolute terms. Alone, B2W accounts for 26.2 per cent (B2W, 2017) of the entire Brazilian e-commerce market (UNIDO, 2017).

It is important to highlight that, due to emerging e-commerce markets in countries where a significant share of the population does not own a credit card or even a bank account, companies have developed alternative payment types. In Argentina and Mexico, some online retailers offer cash on delivery (COD) as an option, while in Brazil, the *boleto bancário* (a printable, bar-coded invoice that can be paid online or offline) plays a similar role (UNIDO, 2017).

The main payment method chosen by Brazilian consumers in 2018 was credit card, because they can take advantage of instalment payments (Ebit, 2019). In Argentina, 77 per cent of payments are made through credit cards, 18 per cent in cash, 1 per cent by debit cards and 4 per cent by other methods such as bank transfers and digital wallets. Payment in multiple instalments is also common in Argentina: 70 per cent of shoppers used an instalment plan in their last e-commerce purchase, according to a 2018 CACE Report (Worldline, 2019).

As for consumer tastes and habits in B2C e-commerce, the top-selling

segments by order in Brazil for 2017 were fashion and accessories (14.2 per cent), followed by health and cosmetics (12 per cent) and household appliances (10.8 per cent). However, the top-selling segments by financial volume were telephones (21.2 per cent), followed by household appliances (19.3 per cent) and electronic devices (10 per cent) (SBVC, 2018).

In Argentina, CACE estimates that in 2018 the leading segments were tickets and tourism (28 per cent) and electronics (18 per cent). Measured by billing, the top five leading products were international air tickets, hotels, domestic air tickets, TV and tourism packages (CACE, 2018).

### **Regulatory framework**

Functioning infrastructure services and an appropriate regulatory structure are important for the development of e-commerce. Relevant infrastructure services would encompass a structure guaranteeing access to internet, broadband quality, logistics (including customs and postal services) and payment systems. The regulatory structure should include a framework of rules on e-contracts, taxation, and consumer and data protection, among other areas. This section explores those topics that are relevant to regulatory concerns.

### **Contracts and e-signatures**

Provisional Measure no. 2,200-2/2001 created the Brazilian Public Key Infrastructure (ICP-Brasil) with the plan of ensuring legal recognition of the authenticity, integrity and validity of electronic documents, as well as the performance of secure electronic commercial transactions. This is known as digital signature, once the authentication procedure

is done under ICP-Brasil accreditation chain and is based on ICP-Brasil method of certification.

The Management Committee of ICP-Brasil is responsible for setting out the rules on the offering of electronic certification services. Documents issued using certificates approved by ICP-Brasil are presumed authentic and true, unless proved otherwise. However, documents certified by other means, or not certified, are still valid, but they are not presumed authentic.

In Argentina, the Civil and Commercial Code (CCC) regulates contracts and acknowledges the possibility of using digital means to create and sign them. Both electronic and digital signatures are regulated through the Digital Signature Law (DSL), Law no. 25,506/2001.

The Law defines two forms of signatures. First, there are e-signatures, understood as a set of data linked with other electronic data used by signatories to prove their identity. However, an e-signature does not have the enforceability of a signed document, as it lacks the requirements to be recognized as a digital signature. Therefore, anyone who is questioned about the validity of an electronically signed document bears the burden of proving its authenticity. Second, the Law defines digital signatures as the result of the application of a mathematical procedure that requires information known only to the signatory. A digital signature must be verified by a third party, including administrative authorities, and has a stricter legal framework under the DSL. Unlike with e-signatures, digital signatures are

sufficient when handwritten signatures are required by law, as long as they are accompanied by a digital certificate permitted by a state-approved certifying authority.

At the MERCOSUR level, Resolution GMC no. 22/2004 created a digital signature for certifying copies of documents issued by MERCOSUR's secretariat. MERCOSUR Resolution GMC no. 34/2006 established guidelines for mutual recognition agreements on digital signature among members. In addition, MERCOSUR Resolution GMC no. 37/2006 provides that electronic documents, electronic signatures and advanced electronic signatures in MERCOSUR documents are admitted with the same effect as signed hard copies. Finally, according to Decision 11/19, MERCOSUR members will have mutual recognition of digital certificates, including tax, customs and contract documents. However, Decision 11/19 has not entered into force since it requires at least two National Parliaments to ratify it, which has not happened yet.

### **Taxation**

In Argentina, importers of goods and services must pay the same local taxes that are levied on nationals. Such payment is due at the time of the goods and services' "entry into the country for consumption", where the value added tax (VAT) must be paid, which does not amount to a customs duty.

Accordingly, Argentinean Law 27,430/2017 establishes the application of VAT on digital services when they are used or exploited in the territory of Argentina, which is proved by the existence of: (i) the IP address of the device used by the customer or SIM card country code; (ii) the billing

address of the customer; or (iii) the bank account used for the payment and the billing address of the customer provided by the bank or by the financial institution that issues the credit or debit card with which the payment is done.

It is noteworthy that, between 2004 and 2019, the software industry in Argentina had a special tax regime for national direct taxes: it allowed companies to apply a percentage of the employers' legal contributions to the payment of national taxes and also to reduce the income tax due every fiscal year up to 60 per cent (Law 25,922/2004). At a national level, however, fiscal incentives for e-commerce, which also include incentives for software but are not limited to it, are modest; they equal only 0.0021 per cent of Argentina's GDP and remain much smaller than other fiscal incentives, for instance, those for small and medium-sized enterprises (SMEs) (0.026 per cent of the GDP) (CESSI Argentina, 2018, p. 6). In respect to tax services' exports, in January 2019 and for two years, a general tax at 12 per cent on services' exports. As for SMEs, they are exempted if their exports are less than US\$ 600,000 per year (and if they export more than US\$ 600,000 a year they pay 12 per cent over only what exceeds US\$ 600,000). The norm considers services exports any service done in Argentina and onerous that is used and/or consumed abroad (Decree 1201/18, article 3).

In Brazil, the tax on e-commerce goods differs from the tax on e-commerce services. For goods, it is a state-level tax (Tax on Operations related to the Circulation of Goods and Services of Interstate and Inter-Municipal Transportation and Communication

Services (ICMS)), while services are taxed at the municipal level (Tax on Services (ISS)).

There is also an Integrated System for Payment of Taxes and Contributions of Micro and Small Companies (Simples Nacional), which is an optional tax system that collects simultaneously municipal, state and federal taxes. It is a simpler and lower tax rate system calculated on gross revenues.

According to the United Nations Industrial Development Organization (UNIDO), taxes are among the most complex and challenging issues to resolve in Brazil: they are high and numerous, significantly increasing firms' overall costs. Duties, taxes and fees can double the original price of a product, and can vary considerably depending on product category. It is estimated that when opening a company, entrepreneurs pay 67 per cent of their profit in tax (EOS Intelligence, 2013).

## Consumer protection

Argentina and Brazil have an extensive patchwork regulation system protecting consumers' rights. Both countries have a federal law addressing consumers' rights: the Code of Consumer Defense (BCCD) in Brazil and the Law of Consumer Defense (LDC) in Argentina. These laws mainly regulate consumer protection, standards of conduct, fair practices of information disclosure, penalties and liabilities.

Under both Argentinean and Brazilian laws, the relationship between supplier and consumer is considered uneven due to the asymmetry of the product or service

provided, which places the consumer in a disadvantaged position in comparison with the supplier.

It is important to highlight that, although both countries have extensive laws protecting consumers, these laws do not have specific rules for e-commerce. Rather, the rules governing e-commerce are framed in the same way as the rules governing door-to-door sales. In Brazil, this can cause insecurity for entrepreneurs, since legal discomfort may arise from BCCD rules in case of bad faith of consumers and regarding the right of return within seven days of receipt. In Argentina, “in theory, the same protections apply to consumers on the electronic market; however, in practice, the protections can be difficult to enforce. In e-commerce, transactions are often fast-paced, increasing the possibility of deception. Issues also arise in regard to the formulation of contracts and what constitutes a legally enforceable agreement” (Stile and Fernandez, 2016).

In terms of liability, Argentina and Brazil apply strict liability when the buyer is the end-user or consumer. Argentina’s LDC establishes that, when damages arise from a risk or a defect of products or services, strict and joint liability of the whole supply chain – including anyone using a brand or trademark of the product or service – shall apply. Similarly, Brazilian law establishes that the consumer shall demonstrate only the cause-effect relation between the

damage caused and the action or omission of the supplier. And if the damage was caused by several suppliers, all of them are considered liable. A strict liability regime rebalances the legal relationship between consumers and suppliers.

Finally, the regime of consumer protection was harmonized through MERCOSUR after its members adopted: (i) Resolution no. 21/04 addressing consumers’ rights to information in commercial transactions made through the internet; (ii) Resolution no. 104/05 providing that infringements occurring in internet-derived transactions will be addressed in accordance with the Consumer Protection Law; (iii) Resolution no. 45/06 addressing consumer protection and deceptive advertising; and (iv) Resolution no. 10/96 on the international jurisdiction in cases involving consumer relations.

**“Functioning infrastructure services and an appropriate regulatory structure are important for the development of e-commerce.”**

### **Internet regulatory framework**

Both Argentina and Brazil have enacted regulations on civil rights on the internet. The Brazilian Civil Rights Framework for the Internet (*Marco Civil da Internet*, in Portuguese), Federal Law no. 12,965/2016, sets the main rules governing net neutrality, privacy, freedom of expression and providers’ civil liability.

Argentina’s Digital Law, Federal Law no. 27,078/2014 (*Ley Argentina Digital*, in Spanish), regulates mostly net

neutrality and privacy. In Argentina, freedom of expression is defined in the Constitution as “to publish ideas in the press, without prior censorship” with the status of a fundamental right. However, Decree no. 1,279/1997 extended the meaning of “press” to the internet as well.

The Digital Law guarantees each user the right to access, use, send, receive or offer any content, application, service or protocol through the web without any restriction, discrimination, blockage or interference. Information and communications technology (ICT) service providers cannot block or restrict the use, sending or reception of any content in the transmission of information (traffic shaping), except in the event of judicial order. Internet service providers (ISPs) cannot set prices on internet access based on the content or services to be used or restrict, by their own will, the user’s right to use any software or hardware to access the internet. Jurisprudence has built case law with respect to cases in which the intermediary service providers must retire uploaded content without judiciary intervention, e.g. removing child pornography.

In Brazil, there are only two legal exceptions in which ISPs are authorized to treat data packets differently over the internet: (i) where technical requirements are essential to the adequate provision of services and applications; and (ii) for emergency services. Technical requirements are understood as measures seeking to address internet security issues, such as restricting sending massive amounts of messages (spam), stopping denial of service attacks and addressing network congestion. Possible

measures restricting net neutrality in cases of emergency services can occur to guarantee communication among and with emergency service providers, and when necessary to communicate to the population in case of a disaster, emergency or public calamity. In these scenarios, communication must be free of charge.

Both in Argentina and Brazil a provider may be held responsible and may have to take down specific content if, after receiving a specific court order, it does not remove the content (within its technical capabilities) by a set deadline. In such cases, the provider will be liable for damages. In Brazil, in the case of unauthorized content containing nudity or sex of a private nature, the content is subject only to a notice and takedown procedure, not necessarily requiring judicial order.

### **Data protection**

Argentina and Brazil are taking steps to adapt their regulations to a data protection framework inspired by the European Union’s GDPR. While Brazil has only recently created a framework for data protection, Argentina launched its first law for processing personal data in 2000 (Law no. 25,326/2000, Personal Data Protection Law (PDPL)).

In Brazil, “Lei Geral de Proteção de Dados” (LGPD), the country’s general data protection law, establishes rules on: (i) the legal bases for processing personal data, sensitive personal data and children and teens’ personal data; (ii) termination of data subjects; (iii) data subject rights; (iv) processing of personal data by public authorities; (v) accountability; (vi) international transfer of data; (vii) security and secrecy of data; (viii) good practice and

governance; (ix) administrative sanctions; and (x) other more specific rules regulating these topics. The Law has a multi-sectoral application for the private and public sectors.

LGPD and PDPL reflect a broad concept of personal data, comprising the information related to an identified or identifiable individual. Moreover, the concept of sensitive personal data is defined in both countries as a specific individual's data about racial or ethnic origin, religious belief, public opinion, union affiliation, philosophical or political organizations, and health or sex life, as well as an individual's genetic or biometric data.

Accordingly, both countries established basic rights that provide: (i) the right to access and rectify personal data; (ii) the right to amend, delete or cancel provided personal data; (iii) the right to oppose data processing; and (iv) the right to information and explanation about a particular use of personal data. The LGPD, as well as the bill in discussion in the Argentinean Congress, goes further by specifying the right to data portability, which allows not only the right to request a copy of one's data, but also to have the data provided in an interoperable format, which aims to facilitate the transfer of that data to other services, even to competitors' services.

With regard to the liability regime in Brazil, the "controller" (legal person responsible for the decisions on how data should be processed) and the "processor" (legal or natural person responsible for processing data under the controller's instructions) can be jointly liable for information security incidents, improper and unauthorized

use of the data or for non-compliance with the law. In this regard, the clear definition of the roles played by the controller and the processor under contractual terms is paramount to set the limits of liability. In addition, when no violations of LGPD are found, the liability of the processor may be limited to its contractual and information security obligations.

The role of the Brazilian Data Protection Authority (ANPD), created by Provisional Measure no. 869/2018, is to ensure the protection of personal data, by monitoring and applying sanctions when facing a violation of LGPD, and requesting information, whenever necessary, from the controllers and processors who carry out personal data-processing operations. To the same extent, Argentina's Agency of Access to Public Information, created by Decree no. 746/2017, functions with autonomy under the President's Chief of Staff Office. If data is obtained or transferred inconsistently with PDPL, database controllers and processors may face sanctions, including warnings, suspensions, fines, or closure or cancellation of the file, register or database, without prejudice to any applicable civil or criminal liability. Moreover, the bill in discussion in the Argentinean Congress includes requirements for notification of mandatory non-compliance.

Argentina's Congress is considering legislation to: (i) limit the concept of "data subject" to natural persons only by excluding legal entities, and revise and refine the concepts of "database", "personal data" and "sensitive data"; (ii) include accountability obligations and remove the database registration requirement; (iii) acknowledge the right

to be forgotten and of data portability; (iv) develop rules for sensitive data, background checks and minors' consent, which are more extensive than for other data; (v) establish a duty of notification of data breaches and require an impact analysis in cases where the data processor intends to treat data differently from its original purpose; and (vi) determine the duty to appoint a data protection officer in the case of sensitive data being processed as a principal activity, for public agencies or when big data activities (such as data mining and data analytics processes) are involved.

### **Argentina and Brazil at the multilateral debate**

The discussions on e-commerce at the WTO started as early as 1998, with the creation of the Work Programme on Electronic Commerce to examine all e-commerce-related issues. Although the Work Programme contributed to the consideration of e-commerce within the Organization, discussions did not lead to the creation of a WTO Agreement. As a result, e-commerce chapters were negotiated in some FTAs.<sup>3</sup>

In 2017, at the 11th WTO Ministerial Conference, a group of WTO members agreed to initiate an exploratory work committee on negotiating an e-commerce agreement.<sup>4</sup> In 2019, at the World Economic Forum, a Joint Statement concluded by 76 members confirmed their intent to start negotiations with the participation of as many WTO members as possible.<sup>5</sup>

Most of the proposals are concerned with custom duties, data protection and server localization, international

transfer of data, e-signatures, consumer protection, unsolicited commercial messages, ISPs and platforms' liabilities. The main areas of disagreement concern market access (Canada, the European Union, Japan and the United States would like to widen the extent of the WTO Information Technology Agreement (ITA) and deepen commitments on services, telecom and financial services) and the moratorium issue (China, the European Union and the United States would like to make it permanent while India and South Africa are concerned about the fiscal effect of such a moratorium).

Argentina and Brazil have engaged in the debate by submitting proposals to the General Council and by participating in two collective proposals.<sup>6</sup>

In the Communication from Argentina, Brazil and Paraguay (JOB/GC/115), the three countries proposed rules on e-signatures based on MERCOSUR Resolution GMC 37/06. In a second Joint Proposal, Argentina and Brazil (only) sought to enhance the effectiveness of copyright rules in the digital environment, focusing on: (i) transparency; (ii) jurisdiction; and (iii) the balance of rights and obligations. One main goal is to improve transparency in order to reduce asymmetries of information between intermediaries and artists, bringing to light the rules used for calculation of royalties, notably as regards modes of exploitation, revenues generated and remuneration due. To curb the practice of international forum shopping to find the most favourable jurisdiction, the countries proposed that jurisdiction be determined based on the applicable legislation from where the content is

accessed. On the balance of rights and obligations, it was proposed that Article 13 (Limitations and Exceptions) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) should be extended to the digital environment.

Argentina was part of a collective communication (with Colombia and Costa Rica) that highlighted the following topics: (i) regulatory issues, including the right to implement measures for the protection of individuals' privacy and for the security and confidentiality of information; (ii) specific commitments in e-commerce-enabling infrastructure sectors; and (iii) progress regarding the interests of developing countries and LDCs in relation to promoting connectivity and bridging the digital divide (WTO, 2018b).

Brazil, in turn, has submitted four documents covering more specific issues related to digital trade.<sup>7</sup>

First, Brazil proposed a definition of digital trade as “the production, distribution, marketing, sale or delivery of goods and services by electronic means”. On specific issues, Brazil proposed the following topics: (i) electronic contracts, electronic signatures and digital certification; (ii) unsolicited commercial communications; (iii) taxation; (iv) competition; (v) consumer protection; (vi) cross-border transfer of information by electronic means; (vii) personal data protection; (viii) cybersecurity; (ix) copyrights; and (x) jurisdiction.

Regarding electronic contracts, electronic signatures and digital certification, Brazil suggests that these instruments should have their legal effect founded on objective methods of validation (which could be done based on performance standards certified by authorities), thus preventing their legal effect from being questioned solely due to their electronic form.

In terms of consumer protection, the focus is on rules addressing the protection of consumers from deceiving commercial practices, for which Brazil encourages the

use of alternative dispute resolution mechanisms. In addition, consumers should be able to avoid receiving unsolicited commercial messages, which means that electronic commercial messages should only be sent upon consent.

Brazil also proposes that relevant international principles and

guidelines should be the basis for a legal framework on data protection, especially to guarantee that individuals are able to pursue remedies in case of violation of their personal data.

With respect to the cross-border transfer of information through electronic means, restrictions or conditions on such transfer could be adopted only when pursuing a legitimate policy objective. Although the definition of legitimate policy objective remains open, Brazil suggests a comprehensive list of categories, such as measures

**“The discussions on e-commerce at the WTO started as early as 1998, with the creation of the Work Programme on Electronic Commerce.”**

involving: (i) protection of public morals or public order; (ii) prevention of deceptive or fraudulent practices, or treatment regarding effects of a default on online contracts; (iii) protection of citizens', consumers' and medical patients' privacy in relation to the processing and dissemination of personal data and protection of confidentiality of individual records and accounts; (iv) ensuring safety; (v) cybersecurity; and (vi) counteraction and prevention of terrorism and violations of criminal law.

Brazil also suggests that, in order to enforce national law, access to information and data shall not be denied based on the "lack of national jurisdiction". Finally, Brazil clarifies that no customs duties shall be applied to electronic transactions, but no limitations shall be adopted on the implementation of internal charges and fees by WTO members.

## MERCOSUR

Although MERCOSUR does not have a common regulation on digital trade, Resolution GMC no. 24/2001 created the Working Subgroup on Electronic Commerce (SGT 13). SGT 13 determines priority issues to consider for intraregional relations and for external relations, particularly with, but not limited to, the European Union and the WTO.

SGT 13 met every year from its creation until 2010. It resumed meetings in 2017 and 2018. Members achieved noteworthy results when they met three or four times a year. For instance, between 2004 and 2006, Resolutions on consumer access to information, efficacy of electronic contracts and

e-signatures were adopted. Although the frequency of meetings has diminished over time, in 2017, SGT 13 resumed proposing negotiations for a future protocol, which would encompass not only e-signatures and electronic authentication methods (previously regulated), but also data localization, unsolicited electronic messages, data protection, transfer of data for commercial purposes and consumer protection. SGT 13 has not yet adopted such a Protocol.

MERCOSUR has created the Group for the Digital Agenda to advance the discussions on the digital economy and e-commerce that were initiated by SGT 13. E-commerce needs to be considered as a cross-cutting issue, as it requires the constant intervention and contribution of different ministries. The group also recognizes the great interest of the private sector, setting an open space for companies to contribute to the discussion.

In addition, in the dialogue between MERCOSUR and the Pacific Alliance, a Joint Action Plan was signed. It includes a Digital Agenda between the two blocs, promoting the exchange of information and good practices in order to develop e-commerce within the region.

Furthermore, MERCOSUR is advocating an e-commerce chapter in all its FTA negotiations, some of which include clauses already included in the Pacific Alliance and in the CPTPP.

The MERCOSUR-EU Agreement, which was concluded in 2019 but is not yet in force, includes a subsection

on e-commerce (Articles 42–51) with definitions and some principles. For instance, and taking into account that the moratorium is still being discussed at the multilateral level, the Agreement establishes that neither party shall impose custom duties on electronic transmissions between a person of one party and a person of the other party (however, it does not preclude a party from imposing internal taxes, fees or other charges on electronic transmissions, provided that such taxes, fees or charges are imposed in a manner consistent with this Agreement).

In addition, although it establishes the principle of non-prior authorizations, the Agreement provides that nothing shall prevent a party from adopting or maintaining measures inconsistent with paragraph 1 to achieve a legitimate public policy objective in accordance with: (i) its right to regulate (Article 1.4); (ii) general exception (Article 48); (iii) security exceptions (Article 49); and (iv) prudential carve-outs (Article 36).

Furthermore the Agreement foresees the obligation to ensure that contracts can be concluded by electronic means, that no party could deny the legal effect and admissibility as evidence in legal proceedings of an electronic signature and electronic authentication service solely on the basis that the service is in electronic form, that all parties shall endeavour to protect end-users effectively against unsolicited direct marketing communications (but firms are allowed to send direct marketing communications if they have consumer's contact details in the context of the sale of a product or service for their own similar products or services).

Finally, in terms of consumer protection, parties commit to adopt or maintain measures that contribute to consumer trust, including measures that proscribe fraudulent and deceptive commercial practices. Such measure shall, *inter alia*, provide for: (i) the right of consumers to have clear and thorough information regarding the service and its provider; (ii) the obligation of traders to act in good faith and abide by honest market practices, including in response to questions by consumers; (iii) a prohibition of charging consumers for services not requested or for a period of time not authorized by the consumer; and (iv) access to redress for consumers to claim their rights, including as regards their right to remedies for services paid and not provided as agreed.

## Conclusion

Argentina and Brazil have embarked on a reform process of both domestic and international regulatory policies.

As already mentioned, e-commerce has been subject of discussion in MERCOSUR SGT 13. However, the results are disappointing in terms of regulatory practices or regulatory convergence in this sector, confined to a few initiatives and documents on e-signatures and consumer protection. In order to promote and enhance regulatory convergence among its MERCOSUR members, parties initially should recognize that MERCOSUR can offer the structure necessary to expand digital trade regulations in the region to issues such as data protection, data transfer, ISP liabilities, intellectual property and domain name disputes.

In addition, Argentina and Brazil have presented separated contributions to the debate at the WTO, which reveals a lack of regional coordination on e-commerce regulatory initiatives, hindering regional businesses development and limiting foreign and domestic investment in a sector that has kept growing.

Furthermore, Argentina and Brazil have adopted different approaches internally, which creates a gap in terms of regulatory convergence between the two. For example, Brazil has already included specific rules related to freedom of expression and the internet service provider's civil liability in its regulation, while Argentina is still moving towards that. On net neutrality, Argentina and Brazil allow different types of exceptions: while in Brazil discrimination is possible when some condition previously predicted is found, in Argentina it can only occur with a judicial order.

On data protection, Brazil recently passed a data protection law similar to the European Union's GDPR, while Argentina passed a data protection law in 2000 and currently has a draft bill submitted to Congress, also inspired by the EU law. It appears that steps towards convergence on this topic is due to the influence of the GDPR, and not necessarily because both countries

have made joint efforts to achieve this regulatory outcome.

The build-up of individual practices and regulations for e-commerce by the two countries reveals a lack of cooperation in this field, which will constrain investments and market expansion. Companies (and small companies particularly) require legal certainty, for example, on what happens with intellectual property on the internet, intermediaries' responsibility, taxes and data protection. In the end, however, convergence may occur thanks to FTAs, such as the MERCOSUR-EU Agreement that obligated MERCOSUR members to determine their common legal "floor" and take new regulatory commitments.

The voluntary and purposeful integration of Brazilian and Argentinean regulatory norms would send a signal to investors across the globe. E-commerce is not only about physical infrastructure (internet connection and the like) but also about legal infrastructure, which is critical for both companies and consumers. Reaching a cooperation agreement to regulate e-commerce activities and related services between the two countries would also reduce costs faced by companies and consumers. MERCOSUR still seems to be the best institutional option to put this forward.

## Endnotes

- <sup>1</sup> The “5-Modes” classification is explored in Ciurak and Ptashkina (2018).
- <sup>2</sup> These percentages are about constant internet users compared to the general population and the percentage of active paying consumers.
- <sup>3</sup> These include bilateral agreements signed by the United States with other countries and regional agreements such as TPP, CPTPP and USMCA.
- <sup>4</sup> Document circulated as Work Programme on Electronic Commerce, Draft Ministerial Decision of 13 December 2017, WT/MIN(17)/W/6.
- <sup>5</sup> Document circulated as Joint Statement on Electronic Commerce, dated 25 January 2019, WT/L/1056.
- <sup>6</sup> The Communication of Brazil and Argentina was first submitted by Brazil as JOB/IP/19. In the revision submission (namely, INF/ECOM/16/Rev.1, first circulated as Joint Statement on Electronic Commerce: Electronic Commerce and Copyright, Communication from Brazil and Argentina, dated 24 September 2018, JOB/GC/200/Rev.1), Argentina joined as co-sponsor. The Communication from Argentina, Brazil and Paraguay was circulated as WTO Work Programme on Electronic Commerce: Electronic Signatures, Communication from Argentina, Brazil and Paraguay, dated 21 December 2016, JOB/GC/115.
- <sup>7</sup> Those documents include: Joint Statement on Electronic Commerce, Communication from Brazil, dated 30 April 2019, INF/ECOM/27; Exploratory Work on Electronic Commerce, Non-Paper from Brazil, dated 11 April 2018, INF/ECOM/3, first circulated as JOB/GC/176; Joint Statement on

Electronic Commerce, Communication from Brazil, dated 30 October 2018, INF/ECOM/17, first circulated as JOB/GC/203; Work Programme on Electronic Commerce, Non-Paper from Brazil, dated 20 July 2016, JOB/GC/98.

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## Comments



**MARK WU\***

In recent years, Latin America has become one of the fastest growing markets in the world for e-commerce. Argentina and Brazil, both members of the Southern Common Market (MERCOSUR), are two of the region's major engines driving the development of the regional digital economy. In 2019, the two countries collectively accounted for more than half of the region's business-to-consumer (B2C) e-commerce.<sup>1</sup> Even as their governments change and their economies experience periodic slowdowns, both countries continue to march forward digitally. One recent ranking of the top global start-up hubs crowned São Paulo, Brazil, as the top city in Latin America, with Buenos Aires, Argentina, featuring as the only other Latin American city to rank among the top 50 worldwide.<sup>2</sup>

But it is not just the remarkable e-commerce revenue growth that has garnered the envy of other emerging economies. After all, as this volume highlights, e-commerce and digital trade are expanding rapidly throughout the developing world. Rather, it is the manner through which these two countries have managed to develop digital competitiveness that has attracted the attention of others. Given their recent histories of authoritarian rule, both countries have remained sensitive to civil society's

calls to protect individual data, privacy and human rights. Neither has engaged in crude forms of digital protectionism to effectively close off their markets and build up national champions. Yet, while they have championed openness, neither has fallen squarely in line with the liberal digital trade initiatives advanced by Australia, Japan, the United States and others. Nor have they ceded their markets to American or Chinese platforms. In short, both countries have sought to engage digital trade on their own terms.

At first glance, this gambit may appear to be paying off. Mercado Libre, based in Argentina, is the region's most popular e-commerce site. In Brazil, homegrown B2W is another leading e-commerce marketplace. Whereas e-commerce in much of the rest of the world is dominated by the likes of Alibaba, Amazon, eBay or one of their locally backed companies, Argentina and Brazil have both proven that it is possible for governments to cultivate the right conditions for domestic technology start-ups to acquire competitiveness in cross-border e-commerce and digital trade.

In their chapter, Professors Thorstensen and Delich make three important contributions towards

*\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*

helping us understand the development of e-commerce in Argentina and Brazil. They are worth highlighting, especially for other developing countries.

First, they emphasize the importance of robust regulatory reform. Both countries implemented a series of laws and regulatory frameworks to facilitate online transactions. In so doing, they provided reassurances to companies and consumers alike. What both sides of a transaction require are certainty over rules concerning nuts and bolts issues such as taxation, digital signatures, use of personal data, returns, etc. Simply investing in physical infrastructure by laying cables and building cellular networks to support e-commerce, while a necessary precondition, is insufficient. Governments must also invest in adapting their laws and institutions to fit the digital era.

Second, Professors Thorstensen and Delich highlight the role of participation in external processes in influencing internal developments. Argentine and Brazilian policies are shaped through policymakers' involvement in debates in international organizations as well as through their negotiations of free trade agreements (FTAs), most notably with the European Union. As was true of their experiences in other domains of global governance (e.g. anti-corruption, WTO dispute settlement), Argentina and Brazil both

benefited from knowledge derived through engagement with their counterparts in advanced economies.

Third, although MERCOSUR constitutes a vital component of Argentina's and Brazil's trade and economic policies, neither turned to MERCOSUR as the key forum for developing their policies. Instead, they pushed domestic regulatory reforms on their own terms, without necessarily seeking regional harmonization. While this may have allowed government officials to operate more in accord with Silicon Valley's

mantra to "move fast and break things", Professors Thorstensen and Delich express a valid concern that this lack of regional coordination may hurt both countries in the longer run. In their closing paragraph, they speculate that the lack of a single digital market in MERCOSUR will prevent regional firms from acquiring the scale economies necessary to become competitive globally.

**"Argentina and Brazil have both proven that it is possible for governments to cultivate the right conditions for domestic technology startups to acquire competitiveness in cross-border e-commerce and digital trade."**

This raises the question of whether Argentina and Brazil are bound

to continue as success stories. Certainly, unlike many other parts of Latin America, they have succeeded in creating e-commerce platforms and technology ecosystems. Mercado Libre and B2W are rightly celebrated as examples of how homegrown firms can beat out global giants by better catering to local needs. Despite these successes, however, are these

countries nevertheless teetering on the edge of the digital version of a “middle income” trap?

Indeed, there are worrying signs that both countries may be losing ground relative to other parts of the developing world. Between 2014 and 2019, Brazil dropped 26 spots in the UNCTAD B2C E-commerce Index rankings to 74th place. Argentina declined even more, falling 36 spots to 85th place. Not only has China overtaken both countries, but so too have India, Thailand and Viet Nam.<sup>9</sup> Just as the industrial goods and electronics value chains eventually gravitated towards Asia, the same phenomenon may be also happening for digital.

Of course, the digital competition is just beginning. The vital lesson to be drawn from MERCOSUR, however, may well be the same one the region taught us in the late 20th century for industrial goods. In the end, investing in legal reform and active participation in multilateral institutions can only get a developing country so far. In order to compete against advanced economies and emerging Asian giants, developing countries elsewhere will need to invest heavily in human capital, stabilize macroeconomic conditions and achieve regional scale economies. Whether Argentina, Brazil or MERCOSUR has learned the lessons of its past remains to be seen. But the region must step up quickly if it is to remain competitive in a rapidly digitizing world.

## Endnotes

- <sup>1</sup> The other major engine of e-commerce growth is Mexico. For more details, see Caroline Zepeda, *The Thriving Brazilian E-Commerce Market*, Contxto, available at: <https://www.contxto.com/en/technology/the-thriving-brazilian-e-commerce-market/>
- <sup>2</sup> See *StartUp Blink Ecosystem Ranking Report 2019*, available at: <https://report.startupblink.com/>
- <sup>3</sup> Compare UNCTAD, *UNCTAD B2C E-commerce Index 2019*, UNCTAD Technical Notes on ICT for Development No. 14, pp. 7–10, available at: [https://unctad.org/en/PublicationsLibrary/tn\\_unctad\\_ict4d14\\_en.pdf](https://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d14_en.pdf) with UNCTAD, *Information Economy Report 2015*, pp. 100-103, available at: [https://unctad.org/en/PublicationsLibrary/ier2015\\_en.pdf](https://unctad.org/en/PublicationsLibrary/ier2015_en.pdf)

A man with dark curly hair and a beard is wearing large black headphones. He is looking down at a keyboard on a wooden table. His right hand is on the keys, and his left hand is resting on his forehead. A smartphone is on the table to the left of the keyboard, displaying a colorful interface. The background is a wood-paneled wall with a green light source.

## Chapter 12

# The digital creative economy and trade: strategic options for developing countries

Keith Nurse\*

*\* The contents of this chapter are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*



## Abstract

The creative sector is an important source of growth in the global economy, and digital creative trade has increased sharply in recent years and particularly in the context of COVID-19. Digital content is replacing physical goods in the sector, for example, in music, books and gaming. Digital aggregators like Amazon, Apple, Netflix, Spotify, TikTok and YouTube have fuelled rapid growth and diversified earnings towards streaming, ad-supported income and data monetization. Copyright revenues are also rising, and the share of digital collections is the fastest growth segment. Participation in the sector by developing countries appears to be increasing, although data availability is poor. To reap the potential benefits of the digital creative economy, developing countries should support a shift from the typical low value-added, stand-alone practitioner industry model to a strategic collaborative approach that facilitates higher levels of creative and digital entrepreneurship. This will require a stronger legal and institutional framework to improve leverage and monetize copyright, financial support for the commercialization of creative activities, government involvement in business support services (e.g. training, incubators, innovation labs, market incubators, cluster development and market development programmes), the creation of enabling institutions to represent the interests of creative workers and firms, and the harmonization of government policies towards the sector.

## Introduction

This chapter is being (re)written during the outbreak of the COVID-19 global health pandemic, which has resulted in a significant loss of lives and livelihoods in addition to an unprecedented impact on the global economy with significant implications for developed and developing countries from a trade and finance perspective (Georgieva, 2020). To be clear, the global economy has been in the throes of a major transformation for the last two decades or more, which can be explained as a Schumpeterian process of creative destruction where declining sectors are disrupted by new and emerging business models and trade patterns (Nurse, 2012; Perez, 2004). The impact of COVID-19 has been to accelerate the processes of digital globalization and the growth of online trade in services. A World Trade Organization (WTO) report on the impact of COVID-19 points out that:

The crisis is focusing greater attention on online supply in sectors such as retail, health, education, telecommunications and audio-visual services, accelerating companies' efforts to expand online operations, and creating new consumer behaviours that are likely to contribute to a profound and long term shift towards online services. In the future, the increased supply of services through digital networks can be expected to strongly impact trade, leading to increased supply through mode 1 (services supplied from one country to another). (WTO, 2020)

COVID-19 and the associated health protocols and lockdowns have had a tremendous impact on the creative economy with significant losses of

income in sectors reliant on the movement or congregation of people or artists (e.g. live events, festivals, cinemas, music tours). In this context, online cross-border activities (e.g. music and film streaming) have grown rapidly with spectacular financial results for firms like Instagram, Netflix, Spotify, TikTok and YouTube. The growth of digital platforms distributing creative content has been on the rise for a decade at least (UNCTAD, 2018a). COVID-19 has accelerated this process to dramatic effect, thereby highlighting the economic value of the creative digital economy.

The developmental effects of these trends for content producers relative to digital platforms, as well as between developed and developing countries, are critical issues from a trade standpoint. In many respects, the question is whether developing countries and their creative entrepreneurs have the capacity and the institutional support to tap into this growth and monetize trade in creative goods, services and intellectual property (IP) in the burgeoning digital arena.

This chapter aims to examine the rise of the digital creative economy in the contemporary context and provide an assessment of the performance and prospects for developing countries.<sup>1</sup> The chapter starts with a look of the key digitalization trends and their implications for the various subsectors. The chapter then utilizes data from the copyright arena as a basis to give some insights into the unfolding regional patterns of production, consumption and trade arising from the growth of the creative digital economy. The chapter concludes with a discussion of the requirements for industrial upgrading

and improving the participation of developing countries in creative digital entrepreneurship and trade.

## The rise of the digital creative economy

The creative sector encompasses creative expressions, the arts and the cultural or creative industries such as design, fashion, music, publishing, audio-visual, animation, performing, visual and literary arts as well as architecture, advertising, broadcasting and gaming (UNDP and UNESCO, 2013). From a trade perspective, the impact of the sector has widened over time to generate what can be best described as a transversal creative economy (Howkins, 2001) or an experience economy (Pine and Gilmore, 1999), where the role of the creative class (Florida, 2002) and the contribution of creative cities (Landry, 2000) have become critical for the global competitiveness of countries and global cities as well as generating new sources of employment and entrepreneurship (Nurse and Ye, 2012).

Developing countries have contributed to this process of growth through increased capabilities in the production and export of creative content. This is in a context where global trade in creative goods has been expanding with an average export growth rate of more than 7 per cent. Estimates are that the value of the global market for creative goods doubled from US\$ 208 billion in 2002 to US\$ 509 billion in 2015. Developing economies, excluding China whose creative goods

exports grew five-fold, experienced an annual growth rate of 5 per cent over the period with exports jumping from US\$ 52.3 billion in 2002 to US\$ 96.5 billion in 2015. Data on creative services are only available for the developed economies, and the trends indicate an average annual growth rate of 4 per cent between 2011 and 2015 (UNCTAD, 2018b).

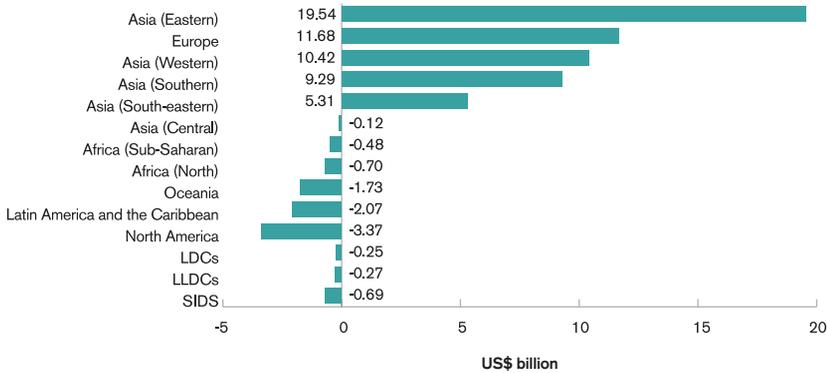
It is estimated that outside of the top-producing economies, such as China; Hong Kong, China; India; Malaysia; Mexico; the Philippines; Singapore; Chinese Taipei; Thailand and Turkey, most developing countries

are net importers of cultural content (UNCTAD, 2018b). For instance, data on trade balances in cultural or creative goods (the mode of trade for which the most data are available) show that outside of the Asia region most other developing-country regions have a negative trade balance (see

Figure 1). This pattern is also evident in least-developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS). This is a long-term trend, and so the issue is whether digitalization is a potential solution to break through the traditional problems of distribution, marketing and retail that have stymied growth in this sector.

The digital creative economy and the trade associated with it is one of the fastest rising components of global trade and a key feature of competitiveness in the era of digital globalization (McKinsey, 2016). Firms operating in the creative sector have been among the fastest

**“Digital content is replacing physical goods in the sector, for example, in music, books and gaming.”**

**Figure 1: Trade balance in cultural goods by region, 2017**

Source: UNCTAD, 2020.

adopters of online and digital technologies, which have impacted their business models as well as the earnings from sales and exports (UIS, 2016). In addition, digital creative content accounts for a significant share of e-commerce as well as content on mobile networks, the internet and blockchains.

It is argued that “the economics behind digitally-delivered content products, namely the high fixed costs of initial production but negligible marginal costs of duplicating and distributing digital copies on a global basis, make them ideal ‘tradeables’” (Wunsch-Vincent, 2006). Keith Maskus also argues that “digital trade has the potential to be one of the most dynamic and innovative platforms for creative entrepreneurs and small enterprises to develop international marketing networks and increase sales”. Maskus further argues that “countries and firms that are poised to build the electronic infrastructure for such activities and facilitate the development of e-commerce markets and digital trade routes

will be their major beneficiaries” (Maskus, 2018).

In the aftermath of the global economic depression of 2008, the creative sector outperformed most other sectors in part because of the growth of the digital economy, where IP and trade in services expanded as a share of global value-added (Masnick and Ho, 2012). This process is evident in the rise of the digital creative economy, which has generated significant earnings for the top media, entertainment and internet companies, as evidenced by the fast-rising valuation of Facebook, Amazon, Apple, Netflix, Google and Spotify (FAANGS) stocks. These firms have helped to change the business models in the creative economy towards an on-demand and online consumption framework.

## Digital transformations

One of the highest-earning and fastest-growing sectors in the digital creative economy is the videogame industry, which surpasses the

combined revenue of the film and music sectors. The gaming sector had a market value of US\$ 134.9 billion in 2018, a 10.9 per cent increase over 2017. Approximately 47 per cent of revenue, or US\$ 63.2 billion, came from mobile, an increase of 12.8 per cent in 2018. Smartphones accounted for US\$ 50 billion of mobile videogaming (up 14.2 per cent in 2018), while tablets accounted for US\$ 11.4 billion (up 7.8 per cent). The other key elements of the gaming market were consoles (not including the hardware by companies like Xbox, Nintendo, PS4, etc.), with 28 per cent of the market share, and PCs with 25 per cent. The data for the gaming sector illustrate that the creative sector is not just going digital, it is increasingly dominated by consumption on apps embedded in mobile devices (Batchelor, 2019).

Another key example of the shifts taking place in the digital creative economy is the growth of consumption of over-the-top (OTT) technologies, where consumers are able to access content via the internet without subscribing to traditional cable or satellite pay-TV services. The prime example of this growth is Netflix, which in 2018 was estimated to have 118 million subscribers in 190 countries and produced content in 21 languages. An associated trend with the rise of OTT content suppliers is the ways in which these firms are able to supplant traditional content producers and flog their own branded original content and in turn link directly with independent producers. For instance, Netflix is estimated to have spent US\$ 8 billion in 2018 for the acquisition of original content (700 projects including 80 new original films) and thus would have outspent all the major movie studios (e.g. Comcast, Disney and Time

Warner), TV networks (e.g. ABC and CBS), cable companies (e.g. HBO and Viacom) and internet competitors (e.g. Amazon and Hulu).

The publishing industry has not been spared either. Indeed, the growth of Amazon as a titan in the contemporary global economy was ushered in by the online sale and distribution of books. Amazon also pioneered with the introduction of Kindle, an e-book reader device, which helped to catapult the sale of digitalized or e-books. The digitalization process also has seen the growth of audiobooks as a major segment of the new digital publishing market. Data from the United States indicate that 2017 was the first year that digital book income and physical book sales were approximately equal at US\$ 7.6 billion and US\$ 7.5 billion, respectively (Anderson, 2018b). In contrast, the publishing industry in the United Kingdom had revenues equal to US\$ 7.4 billion in 2017 (of which exports accounted for 60 per cent) and has experienced a slower rate of digitalization as it is still dominated by physical sales, with digital accounting on average for 15 per cent of total exports in the last five years (Anderson, 2018a).

What has happened to the audio-visual and publishing sectors is even more rampant and advanced in the music industry, which was one of the first sectors to experience digital disruption. Spotify, for instance, along with key players like Apple Music, Deezer, Pandora, Tencent, Vevo and YouTube, has dramatically shifted the moorings of the industry from the analogue world of bricks and mortar into the dematerialized context of platformization with downloads, and increasingly streaming.

## Enter COVID-19!

The creative economy has been heavily impacted by the health protocols of social distancing and travel restrictions but it has been a double-edge sword. Live and events-oriented activities such as theatre, concerts, music tours and festivals that involve mode II consumption abroad and mode IV movement of natural persons have been brought to a screeching halt. On the other hand, digital and online trade in services (i.e. mode I – cross-border) has grown dramatically as more and more consumers and content creators shift to digital platforms. A good example is the Verzuz face-off battles among top US hip-hop and Jamaican dancehall musical artists on Instagram Live that have attracted large online audiences. It has helped artists to boost their digital footprint, expand online sales of merchandise and generate increased music streams (Billboard, 2020; Anderson, 2020).

The impact of COVID-19 has also been felt in the film sector. Indian filmmakers from Bollywood have moved more of their content online as earnings from theatrical releases and live audiences at the cinema have collapsed due to the lockdown (Rashid, 2020). Estimates are that the industry has lost over US\$ 330 million in the first quarter of 2020 from the reduction in domestic box office sales, overseas releases in markets like the United Kingdom, the United States and the Gulf region (which normally account for 30–40 per cent of earnings) and from collections from television and music rights. The industry has also been impacted by the delays in filming due to social distancing requirements (Jha, 2020; Rawal Kukreja, 2020).

Another example is that of TikTok, the karaoke video app launched by the Chinese company ByteDance, which earned US\$ 17 billion in 2019 and surpassed YouTube earnings. In the first quarter of 2020, TikTok had 315 million downloads to achieve the accolade of the highest number of installs of any app in a quarter (Chapple, 2020). In the COVID lockdown context, app downloads have ballooned even further to dominate the download charts for both iOS and Android devices. TikTok has recently been valued at somewhere between US\$ 100 billion and US\$ 140 billion, making it the most valuable company in the creative sector and the highest-valued start-up ever (Chen et al., 2020).

A counter example is LiveNation, the parent of Ticketmaster, which has lost an estimated 40 per cent of its value in the COVID context. The company has been forced to reschedule, cancel and refund patrons for close to 20,000 upcoming events for the period stretching from 1 March 2020 to the end of the year (Bylund, 2020).

With live events being put on the backburner, artists have been forced to conjure up alternatives. One such example is how the gaming industry and the music industry are converging in the context of COVID-19. Take the example of Travis Scott, the UK rapper, who teamed up with Fortnite, the videogame released by Epic Games in 2017, to put on a concert inside of the videogame. Twelve million subscribers tuned in to the live event. Analysts argue that embedding live events inside of a videogame has huge growth prospects.

It has become a digitised plane where the planet's biggest brands,

bands and filmmakers can hold a captive audience of millions – and right now that's more attractive than ever. (White, 2020)

It is still early days to assess how online services or cross-border trade would impact the prospects for the industry going forward especially in an environment where live events are affected by COVID-19 health protocols. What is clear is that there is going to be increased innovation and disruption of the sector in the coming years linked in part to the pandemic.

**“Estimates are that the value of the global market for creative goods doubled from US\$ 208 billion in 2002 to US\$ 509 billion in 2015.”**

recording industry revenues plummeted in the early 2000s and continued a steady decline until 2014.

Even with a significant rebound, the revenues in 2019, which are estimated at US\$ 20.2 billion, still have not surpassed the earnings in 2004 of US\$ 20.5 billion. However, what the data show is the rapid rise of digital revenue with music streaming being the key driver of growth. The year 2016 is considered an inflection year

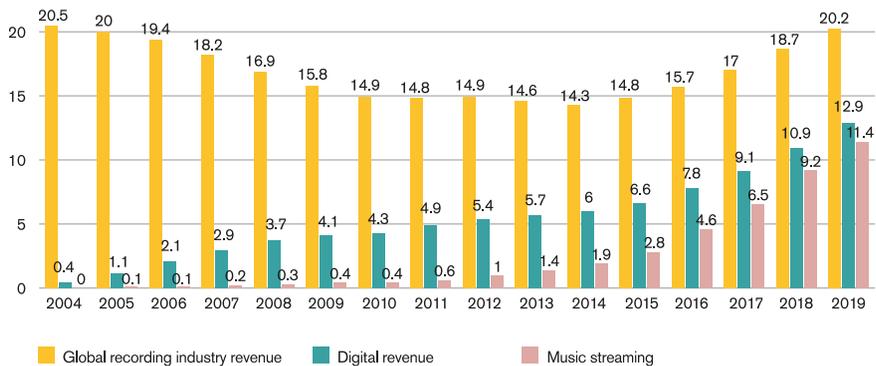
because it is the first time that digital revenue accounted for more than half of total revenue. By 2019 digital revenue accounted for 64 per cent of total revenues, and music streaming contributed 56 per cent on its own (IFPI, 2020).

### The digital music industry

The music industry offers a good case study of the impact of the digital economy on the creative sector given the experience of the global recorded music sector. As Figure 2 shows, the sector has lost significant revenue due to digitalization. Global

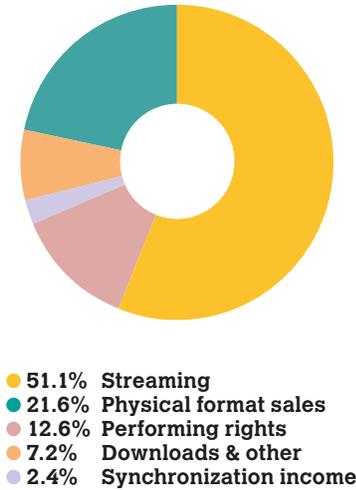
A closer examination of the data reveals that at the end of 2019 streaming revenues accounted for 56.1 per cent of the global recorded music market with subscription audio streaming at 42 per cent of total

**Figure 2: Global recorded music revenues, 2004-2019**



Source: IFPI, 2020.

**Figure 3: Global music revenues segments, 2019**



Source: IFPI, 2020.

revenues and ad-supported streams contributing 14.1 per cent (see Figure 3). Downloads and other digital revenues were 7.2 per cent, thus making overall digital revenue 63.3 per cent of total revenues in the sector. Physical format sales continue to decline and contributes 21.6 per cent followed by performing rights income (12.6 per cent) and synchronization revenue at 2.4 per cent (IFPI, 2020).

One of the key concerns that has emerged from the growth of the digital music context is the relative disparity in remuneration for rights holders such as authors, composers, publishers and artists generally. This is an issue that goes beyond the digitalization issue in that the conventional music industry structure has a high level of value leakage to intermediaries resulting in low shares of the value-added for creators. In a report on the US music

industry published by the CITI investment bankers in 2018, it was noted that spending by consumers was on the increase and diversifying with the growth of multiple avenues and platforms for consumption and that the earnings of creators had crept up from a low base. The report argues that the live events business is the main growth area for artists and not streaming or subscription-based income.

Artists' share of music revenues is small. In 2017, artists captured just 12% of music revenue with most of the value leakage driven by the costs of running a myriad of distribution platforms – AM/FM radio, satellite radio, Internet distributors – augmented by the costs (and profits) of the record labels. The proportion captured by artists is, however, on the rise (it was just 7% of industry revenues in 2000). The bulk of the improvement is not driven by the growth in music subscription services. Rather, it's driven by the strength in the concert business. (CITI GPS, 2018)

This assessment of where the value-added is for creators is a critical one in the context of COVID where the concert business may take a long time to recover if at all. This means that creators will have to rely more on earnings related to digitalization. Given that the dominant position of online platforms in the distribution of digital music has a major influence on the commercial use of creative content, it is important to understand the structural limitations affecting the distribution of income in the digital music sector.

The operations of the digital music industry and the role of online

platforms are such that they are able to employ “safe harbours” exceptions, for example, in the US Digital Millennium Copyright Act of 1998 (that implements two 1996 treaties of the World Intellectual Property Organization), which limit the copyright-infringement liability of online service providers. This problem is particularly evident on online content-sharing service providers that distribute mostly user-generated and user-uploaded content and videos. For instance, the YouTube business model is based upon user uploads, which are distributed via curated playlists and recommended tracks to its users who access the content for free. It then monetizes the content through advertising placements and the sale of users' data.

Table 1 provides data on the payout rates of the top streaming services, and it estimates how many streams would be required to achieve the monthly minimum wage in the United States. What it shows is that the streaming services with the lowest number of

subscribers (e.g. Napster and Tidal) have significantly higher payout rates, whereas middle-tier services like Amazon, Apple Music, Deezer, Google Play and Spotify require between 200,000 to 360,000 streams to meet the monthly minimum wage threshold of US\$ 1,472. YouTube is at the other end of the spectrum with over 2 million streams to earn the monthly minimum wage, which is out of the reach of most artists or creators. The payout rates in emerging markets are also at the lower end (e.g. Jiosaavn in India), and in some instances even lower than YouTube (e.g. Tencent QQ in China).<sup>2</sup>

The streaming service business is very complex in that it is diversified by service provider and market with several factors, such as where the content originates and what payout pool it is monetized under. For instance, Spotify has a premium subscriber rate and a freemium ad-supported rate. These rates are differentiated by market. The premium subscription rate for customers in the United States was US\$ 9.99 per

**Table 1: Top streaming services and payout rates**

Streaming service	Average payout per stream	# of streams to earn \$US 1	# of streams to earn minimum wage*
Napster	\$0.019	53	77,474
Tidal	\$0.0125	80	117,760
Apple Music	\$0.00735	136	200,272
Google Play Music	\$0.00676	147	217,751
Deezer	\$0.0064	156	230,000
Spotify	\$0.00437	229	336,842
Amazon	\$0.00402	249	366,169
Pandora**	\$0.00133	752	1,106,767
YouTube	\$0.00069	1,449	2,133,333

Source: Routley (2019).

\* Monthly minimum wage of US \$1,472

\*\*Premium tier

month, whereas in India it was US\$ 1.70 to compete with local rivals. The payout is also shared among labels, the copyright owners or publishers, and the authors or songwriters.<sup>3</sup>

As such, simplistic conclusions are difficult to make about the earnings and profits structure in the industry. For example, Spotify's 2019 earnings were EUR 6.8 billion, a robust growth rate of 28.6 per cent, matching the 2018 rate, which had been the company's slowest over the past four years. Spotify made a relatively small net loss of EUR 186 million (Johnston, 2020).

The key observation is that the share of income going to content creators is relatively small when compared with the revenue earnings of music platforms like Apple Music and Spotify. The issue is defined as the "value gap", and it is viewed as "a mismatch between the value that online user upload services, such as YouTube, extract from music and the revenue returned to the music community" (IFPI, 2017, p. 25). More broadly, it is defined by Music Canada as "the gulf between the revenues derived by online platforms, broadcasters and other third parties from the commercial use of creative content (such as music, books, news, TV shows and movies), and the revenues returned to the artists, journalists and businesses who create it" (Music Canada, 2019). IFPI, the recording industry organization, argues that the source of the problem is structural and based in copyright regulations:

Inconsistent applications of online liability laws have emboldened certain services to claim that they

are not liable for the music they make available to the public. Today, services such as YouTube, which have developed sophisticated on-demand music platforms, use this as a shield to avoid licensing music on fair terms like other digital services, claiming they are not legally responsible for the music they distribute on their site. (IFPI, 2017, p. 25)

The EU Copyright Directive is aimed at addressing these concerns and has the objective of creating an orderly marketplace for copyright in the digital arena. In particular, Article 17 focusses on the "use of protected content by online content-sharing service providers" and seeks to redress the imbalance between rightsholders and the digital platforms. Article 18 goes further to call for authors and performers to receive appropriate and proportionate remuneration.<sup>4</sup> The EU press release argues that the goals of the directive are to "strike the right balance between the remuneration received by authors and performers and the profits made by internet platforms when they make their works accessible". It also "encourages collaboration between online content sharing service providers and rightsholders" by requiring internet service providers to obtain authorization from rightsholders, particularly "upon notification by rightsholders of an unauthorised protected work" thereby requiring online service providers to take "urgent steps to remove the work and prevent it from becoming available in future" (Council of the European Union, 2018).

It is still early days to assess the impact of the EU Copyright Directive

and whether the core principles will proliferate in other jurisdictions. What is evident though is that the digital music industry and the wider digital creative economy are evolving and contested. How do we determine the prospects for developing economies?

## Digital music and copyright

Copyrights sustain incentives to invest in creativity and build markets, particularly important in digital content. They facilitate contracts in which various contributors to creative digital products and services can share income and ownership. They also facilitate licensing and distribution across international markets. (Maskus, 2018)

Copyright is a critical feature of the underlying conditions for the digital creative economy and the trade-related aspects of copyright are now generally recognized as a key component of the burgeoning service and knowledge-intensive world economy (OECD, 2015). The key observation is that the rapidly growing digital economy relies heavily on creative content, which generates copyrights.

Copyright is on a growth trajectory as global collections of royalties rose by 25.4 per cent from 2014 (EUR 7.69 billion) to 2018 to reach 9.65 billion. The music industry accounts for 88 per cent of the collections and so

provides that most appropriate case study. A significant and rising share of this growth comes from the pivot towards the digital economy with collections from digital sources rising over 50 per cent in 2016, which is an inflection year for the music industry as digital revenue surpassed all other sources combined. Digital income, which was estimated at EUR 1.6 billion in 2018, is one of the key drivers of global music collection, accounting for 17 per cent of total collections up from 15 per cent the year before (CISAC 2019). It is also noteworthy that digital music revenues have increased by 185 per cent in the last five years with the growth coming largely from subscription streaming and video services.

One of the specific benefits of looking at music and copyrights is that it is the area in the creative industries for which there is some consistent and comparative global data and thus provides a basis for researching the digital and creative economy. Data capture

for developing countries and regions is relatively robust when compared with data from trade in services, which is weak or non-existent for most developing countries.

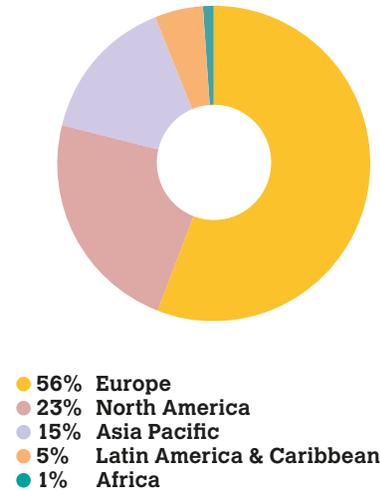
Developing countries' share of copyright or royalty income or collections is relatively small. Europe (56.4 per cent) and North America (22.6 per cent) together account for 79 per cent of total global royalties collections (Figure 4). The Asia/Pacific

**“One of the highest-earning and fastest-growing sectors in the digital creative economy is the videogame industry, which surpasses the combined revenue of the film and music sectors.”**

region is next with 14.8 per cent, however, the performance is dominated by Japan, China, South Korea and Australasia. Latin America and Africa trail far behind with 5.4 per cent and 0.8 per cent, respectively (CISAC, 2019). This suggests that the combined copyright collections from the developing world is less than 10 per cent of total global collections.

The dominance of North America and Europe in royalties collection is underscored when the regions are compared in terms of collections per capita. For instance, collections in Europe are six times that of the Latin America and Caribbean region, 15 times that of Asia/Pacific and over 60 times that of Africa. In effect, what these data show is that the creative sector and copyright collections are

**Figure 4: Global collections of royalties, share by regions, 2018**



Source: CISAC, 2019.

**Table 2: Breakdown of regional collections, 2018**

Regions	Type of use	Collections (EUR, millions)	Growth (%)	5-year growth (%)
Asia Pacific	Live & background	306	+3.1	+22.4
	TV & radio	393	-3.7	+5.6
	Digital	376	+22.4	+120
Latin America and the Caribbean	Live & background	194	-9.5	+14.2
	TV & radio	180	-29.2	-32.3
	Digital	75	+49.3	+978
Africa	Live & background	17	-0.9	+13.3
	TV & radio	31	+5.5	+23.8
	Digital	11	-9.7	+32.5
	Private copying	12	+10.6	+69.0

Source: CISAC (2019).

relatively underdeveloped in the developing world (CISAC 2019).

The question that emerges is whether digitalization can redress these imbalances. The data on the growth of digital collections are somewhat promising. The data in Table 2 show that in several developing regions collections are shifting rapidly to the digital arena. This is clearly evident in Latin America and the Caribbean, where digital collections rose almost ten-fold in the last five years. In the Asia Pacific region, it grew by 120 per cent. In Africa, where digital technology access is less developed, the fastest growth is taking place in private copying (69 per cent) followed by digital (32.5 per cent).

### **Creative and digital entrepreneurship**

The above analysis illustrates how digital, mobile and internet technologies are transforming structures in the global economy and generating new business models and markets that make the creative industries a critical resource for economic development in multiple spheres. From the perspective of the creative industries, digitalization is one of the key means by which creative content can be made more visible and accessible to regional and global audiences. In effect, digitalization offers great potential for tapping into traditional and non-traditional markets for creative goods, services and IP.

The literature suggests that tapping into these emerging opportunities requires developing countries to not only improve the quality and marketability of their content, but they have to also find ways to aggregate content, proactively

participate in digital distribution platforms and build the required copyright collections infrastructure (Nurse, 2000). For example, it is argued that “if a platform holder manages to launch at the right time, adopt an optimal pricing structure, and provide an accessible infrastructure, strong winner-take-all effects can come into play, ultimately allowing a platform to aggregate a disproportionate amount of users, revenue, and/or profit” (Poell and Nieborg, 2018).

Additionally, it is becoming ever more evident that wider issues related to e-commerce and data localization are becoming critical trade and industrial policy considerations for the new business models associated with the digital creative economy. Given that data monetization is an expanding revenue stream, it means that who owns and controls the data generated by users or consumers has a strategic and increasingly profitable asset. Several Asian countries have pursued data localization to ensure that domestic firms can participate in the data economy in more proactive ways.

The overarching argument is that the enhanced integration of developing countries' creative industries in global value chains requires a shift in the industrial paradigm and business practice from the low value-added, stand-alone creative firm, cultural practitioner or artist operating in isolation to a strategic collaborative approach that facilitates higher levels of creative and digital entrepreneurship through higher levels of collaboration, coordination and organization. For example, there is a clear opportunity for greater aggregation of content through platformization and the adoption of blockchain technologies

in order to take advantage of the expanding digital trade in online, streaming and subscription services (Nurse et al., 2020).

The challenge being highlighted here relates to the absence of a clear strategy to build capacity within the creative sector in the developing world. This problem is illustrated by the case of Brazil, which benefits from a creative sector that accounts for 2.64 per cent of gross domestic product (GDP) and one million jobs in 200,000 enterprises. A recently published report highlights that:

In Brazil, there has been little strategic focus on creative entrepreneurship as a strand for culture-led development. Most federal public programmes focus on the protection and promotion of culture without real connections to the role of culture in the economy. Thus, cultural policy, despite a growing focus on the Creative Economy, has not yet adequately explored how to build the capacity of cultural producers so they can operate as creative entrepreneurs. This includes few activities that seek to build the digital capacity of the cultural sector and to generate scalable business and distribution models. (Fleming, 2018, p. 16)

Improving the export capabilities of the creative industries sector and tapping into the rise of the digital economy require the development of a complex of trade, financing and business support services along with tax incentives, access to training, knowledge and IP protection and exploitation (HKU, 2010). In short, what is being recommended is the integration of policy arenas, a practice

that is becoming increasingly accepted in the creative industries.

Similar recommendations have emerged from a study of the cultural flows between the Caribbean countries and the European Union (Burri and Nurse 2019). The CARIFORUM-EU Economic Partnership Agreement (EPA) is the first international trade agreement that incorporates trade in culture and aims to implement Article 16 (preferential treatment) of the UNESCO Convention. These objectives are embedded in provisions under the List of Commitments on “Investment and Trade in Services” as well as “Protocol III on Cultural Cooperation” (Cultural Protocol). Despite the far-reaching commitments undertaken by the EU in granting facilitated market access and preferential conditions to Caribbean cultural goods, services and practitioners, the agreement has not improved market entry and export earnings or redressed the imbalance in trade in goods and services between the two parties after being in force for more than a decade.

The experience of the CARIFORUM-EU EPA suggests that rebalancing trade flows requires an agenda that goes beyond “market access” towards “market penetration”. This involves interventions outside of passive trade policy tools (e.g. implementation of trade agreements) to involve the establishment of proactive trade and industrial upgrading mechanisms such as funding for start-ups, innovation labs, market incubators, cluster development and market development programmes. These mechanisms can play an important role in the development of entrepreneurial skills among industry participants; encourage

experimentation with new ideas, techniques and media; and facilitate capacity development particularly among young entrepreneurs who can overcome their creative or intellectual isolation through networking, mentorship and peer-to-peer coaching.<sup>5</sup>

A key element of the intervention framework relates to the creation of enabling institutions to facilitate the growth and industrial upgrading of the sector. This could include the creation of umbrella organizations, business support organizations, export consortia or industry coalitions. On the government side, this could involve the harmonization of governmental policies, agencies and ministries that interface with the sector, for example, in the fields of cultural policy, trade facilitation, IP rights, enterprise development, and education and skills training.

It is also important to promote cross-sectoral linkages, as the creative industries have multiple markets and sources of income, many of which intersect with ICTs, manufacturing and tourism. In short, the objective is to make creative entrepreneurs and their works more visible and accessible to the wider markets; potential clients, sponsors and investors; and policymakers.<sup>6</sup>

Another key area is trade financing, such as market development grants and financing for participation in trade fairs, outbound and inbound trade missions, business-to-business meetings and other forms of market entry programmes. Additionally, new mechanisms for financing intangible assets, such as IP, would enable creative businesses to grow sustainably and benefit from increased

access to different sources of finance (seed financing, cluster financing, export financing, debt, private equity or venture capital) (Nurse, 2016; Cunningham et al., 2008).

In conclusion, the key strategic opportunity for developing countries is to adopt a sector-wide approach to the creative sector and facilitate the creation of end-to-end business solutions and trade support mechanisms. This suggests that the solution is more than simply gaining access to markets. From this perspective, stakeholders can play a critical role in coordination and upscaling the creative industries once integrated support mechanisms are employed. What is needed is a trade and financing governance framework that is demand-driven and entrepreneurial in focus. It allows for start-ups, clusters, incubators and accelerators linked to market entry programmes that are supported by innovative financing mechanisms (e.g. crowdfunding, angel investing, debt and equity financing, trade financing and IP value capture). There is also a critical need for a wide array of policy support measures such as diaspora engagement, destination branding, trade and export facilitation, investment policy and human resource development. The objective is to reduce the risk of upscaling and to make creative entrepreneurs and their works more visible and accessible to wider markets; potential clients, sponsors and investors; and policymakers (Nurse and Ye, 2012).

## Endnotes

<sup>1</sup> For an introduction to the concept of the digital creative economy, see Towse and Handke (2013).

<sup>2</sup> See <https://soundcharts.com/blog/music-streaming-rates-payouts#local-services-of-jiosaavn-yandex-and-tencent-take-the-lower-end>.

<sup>3</sup> What Music Streaming Services Pay Per Stream (And Why It Actually Doesn't Matter), available at: <https://soundcharts.com/blog/music-streaming-rates-payouts>.

<sup>4</sup> See the Directive (EU) 2019/790 of the European Parliament and of The Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/>

<sup>5</sup> Austria developed and runs a highly successful peer-to-peer coaching in its Creative Industries (CI): A group of 20 young entrepreneurs, guided by two experienced supervisors, works for six months on crucial areas of their own development, e.g. how to find clients, how to differentiate oneself from others, how to manage finances etc. See <http://www.facebook.com/choch3.creative.community.coaching>.

<sup>6</sup> "Kreativwirtschaft Austria" is an example for such an CI umbrella organization. Founded in 2003, it is closely associated with the federal chamber of commerce, but co-founded by the Federal Ministry for Economics.

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## Comments



**WOLF R. MEIER-EWERT\***

The success of digital technologies has dramatically transformed the interaction between the intellectual property (IP) system and international trade. While traditionally, the – already significant – role of IP to channel and frame commercial information and proprietorship in offline trade in goods and services was seen as an embedded component of added value, in the digital context – particularly in the digital creative industries – traded products rarely exist in physical form. Transactions regarding eBooks, apps or music files, the streaming of movies or the upload of user-generated content – today the dominant form of consumption of digital content – are no longer accurately captured by a transfer of ownership in the traditional sense. Online purchasing of any digital product is typically conducted by contractual terms including a limited IP licence that defines the “use-rights” a customer obtains with respect to the digital content in question. Exchanging digital products of this type is thus essentially “trade in IP”.<sup>1</sup>

Keith Nurse’s chapter on the digital creative economy and developing countries aptly identifies “trade-related aspects of copyright” as a key component of the burgeoning service and knowledge-intensive world economy. Indeed, IP systems, by determining the scope and extent of use-rights (i.e. licences) to intangible

content produced by creative industries, provide much of the legal framework in which their digital products are traded domestically and internationally today. It is difficult to underestimate the significance of this realization – particularly in the context of developing countries’ creative sectors, which are eager to access and integrate into global value chains, exploiting digital content.

Developing and strengthening the legal and institutional infrastructure of IP systems – particularly in areas relevant to creative industries such as copyright and geographical indications – have long been recognized as tools to help realize untapped potential in developing countries. Nurse’s reliance on collection data – although cited to show lack in volume – also highlights the gaps that still persist since the days when Bob Marley relied on collecting societies in the United States for lack of faith in equivalent institutions at home. The development of effective collective copyright management organizations (CMOs) is an important contribution to a functioning IP system – although lessons from developing countries caution against disregarding competition considerations in this area – and are needed particularly in developing countries to ensure viability and financing of a creative sector.

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However, at least as significant as the effective application of the current IP system to the realities of an individual country is the development of the copyright system and its adaptation to the challenges of the modern digital world. Digital communication technologies have enabled the development of truly global, potentially seamless markets for digital products, with enormous potential for benefits of consumers and content providers.

Licences to use IP-protected content, in contrast, are granted on a territorial basis, the licensed IP rights existing only at the level of domestic law.

Ensuring interoperability of national IP systems through the implementation of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and other multilateral instruments would thus seem essential to enable content industries to access open markets for digital products.

In a global market for digital products that are essentially defined by IP, national IP policies can have a direct impact on the flow of revenue and business in this field. Solutions to questions of IP protection in the context of digital trade that an individual jurisdiction might adopt – or leave unclear – have a defining influence on the viability of online business models that Nurse cites rightly as the predominant modes of exploitation of the modern content industry, and which are in turn critical for realizing the growth potential of creative industries.

To craft a copyright system fit for the aspirations of nascent digital creative industries, developing and developed countries alike should actively pursue policy formulation in such areas and engage with partners and participate in international forums that favour developing appropriate common approaches.

Examples of these areas include the degree of liability of internet service providers (ISPs) for IP infringements by their users, which directly impacts the viability of operating digital platforms in a global market. The

pervasive view that their important role in facilitating access justifies a certain privilege for ISPs, requiring their action and collaboration only when they are notified of infringing content by rights holders, was developed through years of jurisprudence. Successive legislative developments have enshrined this approach of providing such “safe harbour” under certain –

**“The success of digital technologies has dramatically transformed the interaction between the IP system and international trade.”**

albeit still varying – conditions in the laws of a wide range of jurisdictions, some of which even considered adopting this standard in a regional trade agreement.<sup>2</sup> Yet, despite the seeming unanimity in this area, recent legislative developments in the European Union adopt a more critical view of large digital platforms and propose to establish a general obligation of ISPs to screen for infringing content, thus rolling back the safe harbour principle. This shows that policy solutions in the fast-moving digital sphere continue to evolve – with direct impact on

digital content business models – and national IP policymakers are well advised to consider their domestic systems in light of these developments.

While a particular national regime of ISP liability may mostly affect the availability of platform services in that jurisdiction and thus the “supply of IP content” to a national economy through ISPs, other salient aspects of an IP regime directly impact the availability of content for subsequent sale or use by creators in producing new creative works. The question whether exhaustion – the principle that once an IP-protected good has legitimately entered distribution channels, its further sale (e.g. of a second-hand book) no longer requires the agreement from the original right-owner – could also apply to downloaded digital products (e.g. eBooks or software) is determinative for whether a potentially significant

market for “second-hand” digital products could exist. Similarly, the conditions under which creators can license and use so-called “orphan works” whose legitimate owners are too difficult to determine – a growing problem particularly in the software and videogame area – determine whether publishers or creators will take the commercial risk to use these, or whether they will disappear from the market.

The above shows that the paradigm shift in the significance of IP systems for the global digital marketplace creates a particular urgency in the area of copyright. However, a concentration of efforts in the development of an internationally compatible, modern and responsive system of law and institutions in the area of IP is likely to be an excellent investment in the future opportunities of creative industries in developed and developing countries alike.

## Endnotes

<sup>1</sup> See WTO, *World Trade Report 2018: The Future of World Trade: How Digital Technologies Are Transforming Global Commerce*.

<sup>2</sup> See the US – Korea Agreement, the EU – Korea Agreement and the text of the original Trans-Pacific Partnership (12) Agreement.



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**Making the  
most of the  
digital trade era –  
inclusiveness,  
gender and  
development**



Chapter 13

**Are digital advances  
and inclusive growth  
compatible goals?  
Implications for trade policy  
in developing countries**

Ali Parry, Adelia Jansen van Rensburg,  
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## Abstract

Recent years have seen policymakers give increasing attention to two significant, widespread phenomena: rising inequality (the result of uneven access to productive employment) and the quickening pace of the Fourth Industrial Revolution (4IR) or “digital era”. This chapter explores the concept of inequality and why it is important to promote more inclusive growth, especially in developing countries. It also offers insights into how digital advances can serve to accelerate inclusive growth, provided countries have well-informed policies, regulations and institutions to drive the necessary changes. It is evident from a cross-section of the literature and the initial results from a study on the effects of digital advances on inclusive growth in Africa that digitalization and inclusive growth are ideologically compatible. The areas requiring special attention by policymakers in developing countries include: (i) the problem of data inadequacy; (ii) uneven and costly digital connectivity; and (iii) education systems that are not preparing entrepreneurs for in-demand jobs or for the workplace of the future. Two of the prerequisites for leveraging digital technologies in order to drive more inclusive growth are an effective regulatory framework and a commercial environment that is both trade- and investment-friendly.

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## Inequality in the digital age

In recent decades, the technological changes sweeping the world have merged into what many people today call the Fourth Industrial Revolution (4IR) – a “digital era” in which data have become an extremely valuable commodity and a source of competitive advantage to countries, industry sectors and businesses alike.

In a highly interconnected world, ongoing digital advances and their numerous applications are changing the way people work, learn and socialize. Many would agree that the digital era has the potential to unlock economic opportunities, particularly in developing countries whose industrialization efforts have often been hampered by resource (including financial) constraints and a difficult business environment. In many countries, digitalization – which facilitates e-commerce, mobile money and other online services – is proving to be the catalyst for new forms of commercial and trade advantage. It is also helping to bring more informal workers into the economic mainstream.

While the 4IR gains momentum, another phenomenon is arguably receiving just as much attention: growing inequality in the world. The problem of inequality, which is mainly associated with employment and social status and mobility, is not new, but in recent years it appears to have become more acute. Some people prefer to talk about a lack of inclusiveness rather than inequality, as a country can simultaneously display a lack of inclusiveness (most people are excluded from the economic mainstream) and a low level of

inequality (most people are equally poor) (Draper, Dorffel and Freytag, 2019). Generally, though, these terms are used interchangeably.

This chapter examines the inequality phenomenon against the backdrop of advancing digital technologies and what developing-country policymakers should be doing to promote a more inclusive approach to their growth and development efforts.

## The inequality phenomenon

According to the World Bank, the number of people living in extreme poverty has been declining. However, the rate of this decline has slowed in recent years, which does not auger well for the eradication of poverty and the closing of the inequality gap in many parts of the world (World Bank, 2018). Countries in which income inequality decreased noticeably (measured in terms of the Gini coefficient<sup>1</sup>) in the period 2000–2015 include Ethiopia, Indonesia and Lithuania, while countries in which it has increased noticeably during that period include Ecuador, Kenya and Ukraine (Brookings, 2019). As in Brazil and the Middle East, income inequality in Sub-Saharan Africa has remained relatively stable, but it is still at extremely high levels compared to the rest of the world (Alvaredo et al., 2018).

The growing evidence of and preoccupation with inequality are not limited to developing countries. Some developed countries, facing changing demographics and stagnating labour markets, are seeing a growing number of people experiencing economic hardship. A spike in international migration has added another layer of complexity to the situation. In some

countries, growing unhappiness with the status quo has triggered populist uprisings and calls for governments to introduce measures to level the economic playing fields between the so-called “haves” and the “have nots”.

What has led to high levels of inequality in many countries is the subject of much debate. One contributing factor is that people – for historical, political or cultural reasons – do not enjoy equal opportunities to develop their human capital because of varying educational backgrounds, experience and general mobility in the labour market. Human capital suggests more than knowledge and expertise; it also embodies new knowledge, which should be paired with strong institutions as well as sound economic planning and reforms that prioritize modernization and industrialization.

In the developing world (particularly in least-developed countries (LDCs)), various factors have conspired to create a socioeconomic climate in which large numbers of people are denied the employment opportunities more readily available to those with a sound educational background, in-demand skills, access to business tools (including the internet) and the finance to turn fledgling ideas into businesses with commercial merit. In this regard, the most marginalized individuals as far as work is concerned are women, youth and those living in

rural areas. Poverty is one of the inevitable consequences of economic marginalization.

Because youth constitute the bulk of the population in developing countries, they should be heavily represented in the labour market. However, their inexperience and other constraints (including poor education and the lack of strong support systems at home) often dim their prospects of finding work.

The marginalization of many women in developing countries can be attributed to several factors. For example, women are often sidelined in the

workplace because they have additional responsibilities in the home that demand their attention and render them “less reliable” than men. In the absence of domestic help that could free them up to concentrate on paid work and professional development, their economic contribution and remuneration often remain limited. Cultural norms or entrenched bias might also deprive women of the opportunity to obtain a good education, which could put them on a sustainable career path

and afford them easier access to finance, land or other resources to engage in entrepreneurial ventures.

In Sub-Saharan Africa, a key factor contributing to inequality is the unequal distribution of natural resources, which in turn has impacted the quantity and

**“Two of the prerequisites for leveraging digital technologies in order to drive more inclusive growth are an effective regulatory framework and a commercial environment that is both trade- and investment-friendly.”**

quality of available jobs (Odusola et al., 2017). Education is crucial for social mobility. However, it cannot on its own prepare people for the multitude of jobs needed to absorb the high numbers of people, particularly young people, looking for work on the continent. What is also needed is a foundation of sound institutions and economic reforms that prioritize agricultural modernization and industrialization, supported by national and regional value chains (Odusola et al., 2017).

Rising inequality in the world has also been attributed to international trade and technological advances. Trade is widely acknowledged, both in the literature and in policy circles, to be an important driver of economic growth and development. Yet it is sometimes viewed as an obstacle to local economic development if foreign competition is not effectively managed. Similar sentiments have been expressed about technology. The basis of these views is that where people lack skills and capacity, they will fall behind on the income scale because their ability to engage in market-driven, value-added activity is limited. However, the counterargument is that attempting to slow the pace of innovation or to curtail imports would slow economic performance in general, particularly as technology and trade are strongly linked to investment.

### **Internet connectivity: a divided world**

When it comes to digital technologies, the internet is at the heart of it all. Internet connectivity is widely regarded as a critical lever for development. It has the power to connect people globally, fuel new ideas and elevate

economic activities to a whole new level – but it must be accessible and affordable. According to the United Nations Conference on Trade and Development (UNCTAD, 2019a) and the International Telecommunication Union (ITU, 2018), the proportion of the world's population using the internet rose above 50 per cent for the first time in 2018. In developed countries, about 80 per cent of the population are currently connected to the internet, a proportion that is unlikely to change very much in the foreseeable future. Almost all the future growth in online connectivity will be in developing countries. Internet users in developing countries make up roughly 40 per cent of the population – signalling much room for growth (ITU, 2018).

Given the speed of internet adoption in recent years, helped by the fact that the mobile phone is fast becoming an indispensable accessory for daily living, it is predicted that much of the second half of the world's population will all go online – but probably at a more moderate pace than that which has been witnessed to date. As the next few billion people get connected, the dynamics in internet usage will change. For example, video is surging ahead as the most popular internet-driven medium today, particularly among young people who are growing up in a very visual world and who, at least in the poor countries, may lack the linguistic skills to navigate passages of text. This has implications for strategic planning in both government and business circles (ITU, 2018).

Despite these positive predictions, the fact that billions of people remain disconnected from the online world

greatly complicates the affected countries' economic and trade policies and performance. An area of concern for policymakers is how to plan and work towards a digitally powered future, together with regional and global trade and investment partners, while also tackling fundamental economic shortcomings at home.

Many developing countries find it difficult to deliver reliable and affordable internet access because of inadequate infrastructure, high-cost information and communications technology (ICT) services and skills deficiencies, among other factors. Another developmental shortcoming is the lack of adequate data (especially at a disaggregated level), which means that businesses and policymakers are largely out of touch with local demand patterns. Adding to the problem of inadequate data is the fact that many small businesses operate informally, without a legal identity, and therefore escape attention because they remain "under the radar". Not only do challenges such as these create a digital divide between developed and many developing countries, but they also exacerbate divisions within countries, which can have serious economic and social consequences.

Internet access, though, is only part of the story. Countries need to adopt a holistic digital economy mind-set if they wish to see their growth and development efforts deliver sustainable results, which are in harmony with 21st century realities. In the developing world, governments have a vital role to play in creating the type of environment that allows countries to both catch up and keep up in terms of digital adoption and development.

## Trade in the digital age

Besides the internet serving as the hub for e-commerce and myriad other online exchanges and transactions, the acquisition and development of digital technologies has important implications for trade. In recent years, global exports of ICT and digitally transmitted services have grown more rapidly than services exports overall. Interestingly, from 2005 to 2018, the growth in digitally delivered services was higher in developing countries (including Sub-Saharan Africa) than in the rest of the world. Digitally delivered services exports had an estimated value of US\$ 2.9 trillion in 2018, which equated to 50 per cent of global services exports that year (UNCTAD, 2019b). Digitally delivered services exports from LDCs constituted 16 per cent of global services exports in 2018, which signalled a substantial increase compared to previous periods (UNCTAD, 2019b; WTO, 2018).

Interestingly, ICT goods exports were valued at US\$ 1.9 trillion in 2017, which was higher than ICT services exports that year (valued at US\$ 536 billion). Today, the leading exporters of ICT goods are largely found in East and South-East Asian countries (UN, 2019).

### 1. Digital advances and inclusive growth: exploring the relationship

In the face of growing inequality, many people are talking about the need for "inclusive growth". Can a country achieve its goal of closing the inequality gap and creating a more inclusive society, while at the same time systematically embracing digital technologies? The answer lies in an analysis of the synergies and possible tensions between inclusive growth,

on the one hand, and digital advances, on the other.

### *What is inclusive growth?*

The term “inclusive growth” has grown in popularity in recent years, appearing in policy documents, economic analyses, academic articles and business commentaries. It lacks a universally accepted definition, though.

One interpretation is that inclusive growth refers to a combination of increased participation of poor and marginalized people in economic activity (via employment) and increased sharing in the benefits of growth (Fourie, 2014). Some authors see inclusive growth as having components relating to income, poverty, employment or distribution (equity) (Anand et al., 2013; Klasen, 2010; Ramos et al., 2013). Another interpretation is that inclusive growth refers to the opening up of economic opportunities and benefits, especially to underserved or vulnerable groups, so that a country’s economic performance becomes more balanced and sustainable (Ianchovichina and Lundstrom, 2009).

Ianchovichina and Lundstrom (2009) assert that the pace of growth can be hastened if ways can be found to utilize labour more productively, which would include those who are trapped in low-productivity activities or are completely excluded from the economic system. However, they emphasize that inclusive growth should

not focus only on the poor. It should be broad-based across sectors and inclusive of the country’s existing and potential labour force. The poor, as an underserved or vulnerable group, naturally deserve special attention, but not at the expense of other deserving economic segments, such as women (who are not necessarily poor) and aspiring entrepreneurs (whose economic contribution could be significant but whose specific needs often escape the attention of policymakers).

**“Digitalization – which facilitates e-commerce, mobile money and other online services – is proving to be the catalyst for new forms of commercial and trade advantage.”**

Ianchovichina and Lundstrom (2009) also stress that inclusive growth is not simply about redistribution. It is about growing the economy or enlarging the “economic pie” (which would create new jobs) and making the economy more productive (which would boost incomes). They stress that government-driven industrial policies – which are an integral part of many countries’

development efforts – should be implemented in a prudent manner so as not to disrupt natural market forces or introduce a heavy regulatory burden. In other words, inclusive growth policies should be geared towards removing constraints to growth. This would make government an enabler of growth, not the main driver of it, which is largely a private sector responsibility. This does not mean that there is no room for regulation. Economic activity needs to be regulated in effective ways and unfettered competition should be discouraged. However, the priority

should be given to efficiency-enhancing structural transformation and economic (including export) diversification.

More inclusive growth has fiscal advantages. This is because more economically active and productive people mean higher tax revenues and less dependence on artificial support measures, such as government grants and other forms of social welfare. Inclusive growth also gives way to greater social stability as more people are engaged in occupations that make use of their time and their skills. Finding satisfying occupations that allow people to support themselves and their families is an important step on their journey towards personal fulfilment and dignity.

There is general agreement that economic growth (or gross domestic product (GDP)) is a prerequisite for inclusive growth. Whereas economic growth is a clearly defined measure of the value of goods and services produced by a country, inclusive growth is a broader concept, implying the equitable share of economic opportunities and benefits in society (Draper et al., 2019). Inclusive growth builds on economic growth by also focusing on specific segments, including the underserved groups whose contribution is not captured in the formal economic growth equation. In this context, inclusive growth is one of the cornerstones of sustainable development and its various components feature strongly in the United Nations (UN) Sustainable Development Goals (SDGs) (Draper et al., 2019).

However, inclusive growth is not a natural consequence of economic

growth. For example, Anyanwu (2013) points out that the high growth rates realized by a number of developing countries in recent years have not translated into inclusiveness, either during the development process or in its outcomes.

### *How are digital advances changing the world of work?*

In policymaking circles, one of the main concerns about digital advances is their impact on employment. Opinions vary on whether, the extent to which or how quickly digital advances in the form of automation/robotics, artificial intelligence (AI), the Internet of Things (IoT) or 3D printing will affect traditional jobs. Yet no country can afford to ignore the encroaching reality of the world of work undergoing significant change – especially as the availability and quality of jobs are at the heart of the inclusive growth debate and form the bedrock of orderly, sustainable societies (Wisskirchen et al., 2017).

E-commerce, which, simply put, refers to digitally ordered, digitally delivered or digital platform-enabled transactions (BEA, 2018), is one of the central pillars of the digital economy. The ability to buy and sell online enables people to engage in business transactions that would be much more expensive or even logistically impossible if more traditional methods were used. E-commerce is not new, although the technologies that drive it (more rapid broadband, increasingly sophisticated mobile devices, more user-friendly and cost-effective payment platforms, and so on) are developing all the time.

E-commerce is particularly liberating for those who are looking for cost-

effective inroads into local and international markets, for those who are looking for flexibility and anonymity in their working environment, and for consumers who enjoy the freedom to transact at the times that suit them, using no-fuss payment arrangements. Of course, buying and selling physical goods online still require traditional logistics and distribution services, but the digital components of the transactions can greatly streamline the engagement between buyers and sellers.

AI and advanced robotics/automation often go hand in hand. Not so long ago, robots were mainly seen as replacements for humans performing routine, repetitive work. Human-less factory production lines and storage facilities are typical examples of robotics at work. However, the science behind robotics is becoming more and more sophisticated, with some robots now able to engage in intelligent reasoning and decision-making.

AI, in turn, is a collection of technologies, including computer vision, language processing, robotic applications and virtual agents, that are able to mimic humans' cognitive functions. Drones, autonomous vehicles, and facial and voice recognition applications all rely on AI. AI allows the processing and interpretation of huge quantities of data, which can speed up and enhance the quality of organizational decision-making. Also intriguing is AI's capacity for self-learning. There are plenty of stories of machines teaching themselves how to perform certain tasks after a short period of self-tuition, simply by studying the rules or procedures. However, concerns have been expressed about whether

high-level decisions requiring careful deliberation on matters of ethics and fairness can be left to machines.

The advent of 3D printing, in turn, is changing traditional manufacturing patterns and cost structures, with the quest for high-volume economies of scale and inexpensive production locations giving way in some cases to reshoring, on-demand production runs that cater to more specialized requirements and shorter global value chains (GVCs).

One of the defining features of the digital era is the immense quantity of data that are stored and processed in the cloud. Data are the pulse of the digital economy, originating in sensors and tracking systems, security cameras, point-of-sale transactions and innumerable other sources – even social media activity, such as app purchases, status updates and “likes”. Access to data is becoming a crucial competitive advantage, particularly when working across disciplines (such as marketing, finance, production and logistics), and has become increasingly affordable.

However, concerns about ownership of information (which has trade policy implications) and privacy and security are growing. Regarding the latter, the distinction between friendly online overtures from marketers and unscrupulous data mining is often far from clear. Cybercrime, in turn, is infiltrating more and more online applications and becoming more sophisticated. Often, countries' laws and regulations – conceived in an earlier era – are ill equipped to detect, pass judgment on or curtail errant or illegal behaviour in the digital space.

### *Digital advances: An economic driver or divider?*

While some believe that the 4IR provides disadvantaged or excluded communities with the opportunity to improve their economic circumstances, others see the potentially corrosive effects of digital advances on societies that are at a relatively low level of development. The question should be asked: are digital advances an economic driver or divider?

It has been suggested that access to digital technologies could be a significant enabler for women and young people who are unemployed or operating on the economic fringes. For example, keeping in touch and engaging in marketing and financial transactions via cell phone could make a significant difference to their economic circumstances. The fact that such activities can be performed relatively inexpensively is an important enabler.

In addition, more women tend to work in the services sector than men (OECD, 2012). The fact that many services have become more accessible due to digital developments augers well for women's greater inclusion in the economy. For youth, the internet is an endless source of information about entrepreneurial possibilities and online courses. Because many young people have grown up with the internet, they could be good candidates for digitally supported work.

Notwithstanding the above, today the ability to manage and commercialize large quantities of data is becoming a key factor in the creation of competitive advantage, employment and wealth. Such technological prowess tends to be concentrated in advanced and

emerging-market economies. For example, eight of the 10 largest technology companies in the world – Apple (#1), Alphabet (the parent of Google) (#2), Microsoft (#3), Intel (#5), Facebook (#6), IBM (#8), Cisco (#9) and Oracle (#10) – are American. The other two – Samsung (#4) and Tencent (#7) – are South Korean and Chinese, respectively. Furthermore, it is mainly the Organisation for Economic Co-operation and Development (OECD) countries and the members of the European Union and BRICS (Brazil, Russia, India, China and South Africa) that have AI policies in place (Ndzendze and Marwala, 2020).

Many poorer countries talk about embracing the 4IR in order to enhance productivity and competitiveness, and to avoid being left behind in terms of economic development and trade. However, such aspirations might be tempered by the “Matthew effect”. This concept (originated by sociologist Robert K. Merton in the 1960s) relates to the tendency of those with an advantage to gain a further advantage, while the disadvantaged tend to slip further behind. In other words, the “rich get richer and the poor get poorer” (Rigney, 2010). Where the Matthew effect is in evidence, inequality supposedly becomes self-perpetuating and self-amplifying unless there are specific interventions to arrest its momentum (Ndzendze and Marwala, 2020).

With the world already characterized by high levels of inequality and stark differences in wealth and well-being, there is the danger that the unfolding digital era will simply exacerbate existing divisions. In his book *The Bottom Billion*, Paul Collier notes that the poorest people in the world tend

to live in countries that have a weak industrial and technological base (Collier, 2007). He notes that while it is possible for poor and technologically deprived countries to catch up (China, Singapore and South Korea are examples of countries that made the transition), it requires significant foreign direct investment to enhance their technological readiness, along with sound macroeconomic policies and heavy investment in skills development. All this points to the critical importance of formulating and implementing well-informed and forward-looking economic and trade policies.

Despite its potential to bring about positive change, the 4IR and all that it embodies – from large, physical infrastructure to hardware, software and ICT support services – are at times viewed with circumspection by developing-country policymakers. This is because they see 4IR as a threat to local industry and employment, especially when some traditional jobs are likely to be replaced by machines or more scarce skills are called for (which may not be available locally). As digital advances often have an international origin – which can be associated with uncomfortable levels of competition – countries' trade policies might even discourage foreign investment in certain industry sectors.

Such concerns about foreign competition and the potential impact on local industries should not be disregarded. There is growing tension between developed and developing countries over the extent to which data flows should be regulated across borders. The developed-country argument centres on the importance of digital liberalisation in the interests of market expansion and its associated

benefits. In contrast, the developing-country argument stresses that digital liberalisation, as envisaged by technology giants like Amazon, Facebook and Google, would make it extremely difficult to build digital capacity and traction (particularly among start-ups) at the domestic level (Third World Network, 2019).

A preferred option among many developing countries is to grow their own digital content and capabilities across various industry sectors, while exercising some control over data flows through data localization (ownership) rules and possibly even tariffs on cross-border digital trade. This is more indicative of a digital industrialization strategy which South Africa, for example, advocates (Roberts et al., 2019).

### *Measuring digital advances and inclusive growth*

Growth should by definition be measurable. However, the different meanings attached to inclusive growth and the scarcity of data delineating the various elements of inclusivity make the measurement of inclusive growth challenging.

A number of international organizations (including the OECD, the World Bank and the World Economic Forum (WEF)) have arrived at measures of inclusive growth or development. For example, the WEF developed an Inclusive Development Index (IDI), the rankings for which are determined by the number of national performance indicators, with four pertaining specifically to "inclusion": median household income, poverty rate, and income and wealth Gini indices. According to the 2018 IDI, which ranked a total of 74 countries, the most

inclusive countries included Australia, Denmark, Iceland, the Netherlands, Norway and Switzerland. The least-inclusive countries included Chad, Egypt, Malawi, Mozambique, South Africa and Zimbabwe. Among the G20 countries, Argentina, Australia, China, Germany and the Russian Federation were at the upper end of the inclusiveness scale, while India and South Africa were at the bottom (WEF, 2018).

Measuring digital advances, in turn, is far from simple or straightforward because of the speed with which things change. However, it is possible to track variables such as internet connections and mobile subscriptions in different countries and regions. Not surprisingly, the more advanced countries are far more connected and digitally active than most developing countries – with Africa in general trailing behind the rest of the world (World Bank, 2016).

In a study on the compatibility of the goals of digital advances and inclusive growth in Africa using data from the World Bank, UNCTAD and the OECD, three indicators were selected as proxies for digital advances (international trade in digitally delivered services; ICT goods as a percentage of the total population and the number of people using the internet as a percentage of the total population). Six indicators were selected for inclusive growth (employment, youth employment, vulnerable employment, employment–population ratio, GDP per capita and life expectancy at birth) (Viviers, Parry and Jansen van Rensburg, 2019).

Among the early findings from the study are that there is a positive

correlation between internet usage and digital trade in goods and services, on the one hand, and a reduction in vulnerable employment, on the other. In addition, there is a positive correlation between greater internet usage and life expectancy. A possible reason for this is that the integration of digital technologies in healthcare in recent years has helped to map and monitor general illnesses and the spread of infectious diseases, track drug supplies and vaccines, and gauge the quality of care provided (WHO, 2018). The study has so far also shown that digital developments impact inclusive growth indicators differently, depending on factors such as employment sector, age and gender of the population (Viviers, Parry and Jansen van Rensburg, 2019).

There is much scope for individual and groups of developing countries to determine positive or negative correlations between digital and inclusive growth indicators so that policies are formulated from a well-informed base. This is important since the opportunities and challenges faced by vulnerable groups are often given inadequate attention at the policy level.

## **2. Digital advances and inclusive growth: policy implications**

Regarding the influence of digital advances on inclusive growth, Gillwald (2019) is of the following view:

There is nothing inherent in so-called 4IR technologies of artificial intelligence, blockchain or drones that will result in economic growth, job creation or empowerment of the marginalised. Evidence from the so-called third industrial revolution tells us we should not take for granted that technology will translate

into wage or productivity growth – unless we develop a good set of complementary policies both as business and government.

In light of the above, and bearing in mind the “Matthew effect”, one can conclude that economic marginalization, the digital divide and other manifestations of an unequal society will not diminish unless they are specifically addressed at a high level. In the same way, inclusive growth will remain a distant, largely unattainable goal – despite all the new opportunities that the 4IR has brought in its wake – unless there is a supportive policy environment to drive the process.

The literature and the empirical analysis (see, for example, Parry, Viviers and Jansen van Rensburg, 2019) suggest that digital advances and inclusive growth have compatible ideals.

However, a complicating factor is that many developing countries (including China, India and South Africa) have very uneven development profiles. For example, while some segments of society have successfully transitioned to high levels of digital awareness and application, which adds lustre to an established industrial base, other segments remain trapped at the very lowest levels of development, unable to escape from simple economic pursuits, like subsistence farming. Many of those who live in the cities have no work at all. Closing the gap between those that have been left behind and those that are keeping the country on the map in terms of innovation is one of the most urgent challenges of governments today.

It seems inevitable that a two-pronged approach is needed at the policy level – one that facilitates “catch-up”

among vulnerable and excluded groups and one that encourages and rewards innovation and technological excellence.

In working towards a comfortable convergence between digital advances and inclusive growth, developing countries should note the following key policy implications:

- *Policymakers and their social partners need to arrive at a common understanding of inclusive growth and realistic goals for achieving a more inclusive society.* Giving these aspects definition will pave the way for specific targets and timelines to be set and accountability areas to be determined. It is also important that inclusive growth initiatives focus on expanding the economy in sustainable ways and making it more productive, rather than relying on redistribution.
- *The problem of data inadequacy needs to be addressed.* An important strategy in this regard is to ensure that the research community is adequately funded and capacitated and that it engages frequently with economic policymakers, regulators and other government stakeholders. This would, among other things, reveal the positive or negative correlations between different elements in the digital-inclusive growth mix and help to steer policy.
- *The problem of inadequate (including geographically uneven) digital connectivity needs to be resolved.* Sometimes connectivity problems are a sign of a much deeper malaise – such as an erratic power supply, low skills levels or a trade policy that restricts foreign investment and imports of digital goods and services. Structural transformation is therefore

required in priority areas to open the door to more economic (and particularly entrepreneurial) opportunities.

- *An effective regulatory framework is required to manage digital developments and data flows.* Such a framework should provide legal and regulatory certainty and allow a prudent level of control, particularly in respect of cross-border data flows and ownership, and the protection of privacy and intellectual property rights.
- *Current approaches to education and skills development need to be overhauled to address current weaknesses and to prepare people for the future.* The aim should be to put young people onto a surer path professionally while also re-skilling older people whose traditional occupations may be threatened by advancing technologies. As digitalization will continue to encroach on traditional jobs in the formal sector, opportunities for entrepreneurship (from training to financial assistance) need to be unleashed to absorb new entrants in the labour market as well as more experienced workers displaced by new technologies.
- *A digital trade policy is needed that caters to a country's level of development and relative inclusivity.* While a country may aspire towards building local capacity and expertise, a lack of inclusivity and an accompanying digital divide would necessitate high levels of foreign investment, supported by suitably liberal policies to allow inflows of ICT products, services and expertise.

Digital advances cannot, on their own, provide a shortcut to inclusive growth

and development or a fast pass into the future. The necessary foundations need to be in place before a digital policy framework can be formulated and successfully implemented. It is like building a house – without solid foundations and a sturdy, supporting structure, the house will be inherently weak and it will be difficult for it to withstand external pressures.

## Endnotes

<sup>1</sup> Luebker (2010) describes the Gini coefficient (or Gini Index) as a summary of the extent of inequality in a single figure. According to the author, the Gini coefficient can theoretically take any value between 0 (perfect equality where everyone has the same income) and 1 (perfect inequality where all income goes to a single person).

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## Comments



**ROBERTA PIERMARTINI\***

Digital technologies are changing the way we consume, produce and trade. Thanks to the use of the internet, consumers and firms have direct access to online markets. Companies increasingly use artificial intelligence (AI) and big data to analyse consumers' online shopping habits and adapt products to their preferences. Businesses use the Internet of Things (IoT) to increase efficiency by improving maintenance of machinery and products, and also by selling new digital products and services.

As the authors of this chapter stress, digital technologies create new opportunities of development, as they may help overcome some of the financial constraints and difficulties of the business environment that hampered industrial development. By creating new ways of trading goods and services, digital technologies may modify comparative advantage. For instance, digital technologies make it possible for firms in remote, least-developed countries (LDCs) to sell products around the world. Digital technologies such as 3D printing make it possible for countries with appropriate resources of raw materials to localize production and supply customized goods without the need to set up a whole industry, for example, for small firms to develop a software component for printers. Mobile

banking and blockchains technologies, with their tracking systems, may help reduce problems related to the lack of institutional credibility for borrowing and lending or of product certifications of origin, even for agricultural products.

The potential force of inclusiveness of digital technologies goes beyond fostering development in poorer countries. It is also a force of inclusion for the poorer within a country – these are typically small business and women.

By significantly reducing the cost to access international markets, digital technologies provide new opportunities for small businesses to benefit from trade. Firms trading on the internet tend to be on average smaller than those that trade offline (Lendle et al., 2016). The system of verification possible through digitally enabled services helps solve the problem of trust that hampers small businesses. The development of a plethora of bed-and-breakfast facilities and holiday homes is one example of the type, as the rating provided by users of digital platform signal the quality of the service. In the case of women, digital technology not only improves women entrepreneurs' access to external finance, but it also eases the time burden of women workers or women entrepreneurs who have to handle both domestic duties and work.

\* The contents of this commentary are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.

Despite these benefits, digital technologies present a number of challenges. The authors highlight two major issues: the digital divide between richer and poorer economies and the risk of loss of privacy. There are also large inequalities in access and the ability to use digital technologies within countries: between old and young, women and men, and small and large firms. Small and medium-sized enterprises (SMEs) have less access to digital technologies than do large firms, and women have less access to digital technologies than do men (World Bank Group and WTO, 2020). The adoption of a development framework based on these new technologies may create important distributional consequences if these differences are not tackled.

The chapter highlights some of the policies that governments in developing countries can put in place to prepare for the changes that new technologies will bring about:

- Improving inadequate and geographically uneven digital connectivity.
- Developing an effective regulatory framework to manage digital developments and data flows. In this context, governments need to balance the legitimate objective of digital development with those such as consumer protection, cybersecurity and data privacy in ways that are not more trade-distorting than necessary.
- Addressing current weaknesses in education and skill developments to meet those required by the digitalization process. Note that this is important not only for workers (who need to be retrained), but also for consumers (older people can reap the benefits of new technology, but they need digital training) and self-employed individuals who can now access the global market.
- Creating the business environment to attract foreign investment, supported by suitably liberal policies to allow inflows of information and communications technology (ICT) products, services and expertise.

It is worth stressing further the role that trade policy can play to create the

appropriate environment for a country to take advantage of the opportunities that digital technologies provide and to attract investments. First, some digital trade policies can help reduce trade costs. For example, by enhancing data exchanges and allowing for the harmonization of e-certificates, governments can boost the impact of digital technologies to facilitate trade operations and

customs cooperation. Second, trade policies related to services sectors, such as finance, distribution, logistics and transport, are also key determinants of the extent to which a country can reap the benefits of digital technologies. Digital platforms can only partially help to reduce trade costs if uncompetitive transport services result in exorbitant transport costs. Third, goods-related

**“One policy that can help to bridge the digital divide is by making further commitments under the General Agreement on Trade in Services.”**

trade policy measures matter too. These include, for example, import tariffs on informatics and telecommunications equipment or a *de minimis* threshold to allow more shipments and parcels, typically shipped by individuals and small businesses engaging in cross-border e-commerce, to trade duty-free. In all of these cases, policies need to be carefully designed to take into account potential import-competition disruptions that may be caused by technology and policy changes.

Beyond the diverse unilateral measures that governments can put in place to reap the benefits of digital technologies and minimize risks, there is also an important role for international cooperation to play to make digital technologies more inclusive.

First, international cooperation may help to tackle the potential negative impact of digitalization on competition. One characteristic of digital technologies is that they are characterized by network externalities, that is, the value of the network increases with its size. When choosing between two products, consumers prefer the product with more users. In these circumstances,

winner-takes-all dynamics prevail and deter further market entry. Market dominance issues emerge. Product competition becomes fiercer, and some platforms create monopoly positions with big rents. They will tend to be geographically concentrated, since talented people and successful firms are concentrated. This may hinder

innovation and increase persistence of geographical inequalities. The issue of the power of digital platforms is particularly relevant for a large number of developing countries. Large digital providers, firms and platforms predominantly originate from a few countries. National competition authorities are likely to play a prominent role. But, since digital firms tend to be international, there is a rationale for international cooperation.

Second, international cooperation may address the issue of data availability. In a digital world, data availability is key for innovation in business models and for process optimization in the supply chain. Increasingly, data are essential to determine firms' competitiveness

and a country's comparative advantage. Data therefore are kept internal to firms. This raises an important challenge of structural inequality within and across countries.

Third, international cooperation may help to resolve some of the tensions generated by uncoordinated unilateral approaches to digitalization. Over the last decades, governments have

introduced several policies related to digital technologies. Some of these policies have created tensions. Other policies may simply have been unnecessarily divergent. This led some countries to look for a more coordinated approach. This need is reflected in some recent regional trade agreements (RTAs) that include digital technology-

**“By significantly reducing the cost to access international markets, digital technologies provide new opportunities for small businesses to benefit from trade.”**

related provisions, such as on the cross-border transfer of information, data localization requirements, e-signatures and e-authentication, protection of personal information of e-commerce users, and so on.

Finally, ongoing World Trade Organization (WTO) negotiations and joint initiatives related to services, electronic commerce and micro, small and medium-sized enterprises (MSMEs) can help deliver more inclusive digital development. One policy that can help to bridge the digital divide is by making further commitments under the General Agreement on Trade in Services (GATS). This could be a way to enhance policy credibility and thereby help attract foreign direct investment. As discussed

in the chapter and in this commentary, it is key to tackle the specific obstacles that MSMEs and unskilled workers (many of whom are women) face to take advantage of the opportunities that these new technologies present, as well as their costs of adjustments. Discussions at the WTO can work to this purpose.

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A woman with dark hair, wearing a maroon top, is shown in profile, looking upwards and to the right. The image is overlaid with a white, stylized geometric pattern of interconnected lines and shapes, resembling a modern architectural or digital design. The background is a blurred, blue-toned interior space with some lights.

**Chapter 14**

**Blockchaining  
international trade:  
a way forward for  
women's economic  
empowerment?**

**Amrita Bahri\***



## **Abstract**

Blockchain technology holds considerable promise to boost women's participation in international trade. Blockchain's anonymity and efficiency could enable many women, who otherwise would be constrained by law, custom or high costs, to engage in financial and business transactions. Blockchain can be used to enable women who lack identification documents to undertake transactions that otherwise would require official identification, and to prove their ownership of assets without interventions from male family members. Blockchain can help micro, small and medium-sized enterprises (MSMEs), more than 30 per cent of which are owned by women, to overcome costs associated with exporting and importing, and interact easily with consumers, other businesses engaged in the supply chain, customs officers and regulatory bodies. Blockchain also can increase women farmers' access to information on crops and market conditions, thus improving their bargaining position. However, if not regulated properly, the expanded use of blockchain also could increase the relative return to sophisticated technology skills that men are more likely to have, and increase the digital divide between men and women. The World Trade Organization (WTO) could play a key role in developing guidelines for the use of blockchain in international trade to support the efficient and inclusive adoption of blockchain technology.

*\* The contents of this chapter are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

The 2017 Joint Declaration on Trade and Women's Economic Empowerment (2017 Declaration) has underscored the interdependence of gender justice and sustainable economic development. The 2017 Declaration reaffirms that "international trade and investment are engines of economic growth for both developing and developed countries, and that improving women's access to opportunities and removing barriers to their participation in national and international economies contributes to sustainable economic development".<sup>1</sup> It seeks to build a framework that will guide members to adopt or adapt gender-responsive trade policies that will eliminate barriers to trade for women and hence increase their participation in trade. This multilateral initiative aligns with and complements the Convention on the Elimination of all Forms of Discrimination against Women 1979 and Goal 5 of the Sustainable Development Goals in the United Nations 2030 Agenda for Sustainable Development.

This is a promising development for the multilateral trading system. Even though it is a non-binding declaration, it marks a concrete starting point for future deliberations and discussions on how trade can accommodate gender justice concerns. However, it is surprising to see that almost one third of the WTO members have refused to join this endeavour. Most of these non-signatory members, as compared to the signatory members, have a much lower combined average score on the Women, Business and the Law (WBL) global index (World Bank Group, 2019).<sup>2</sup> The WBL as calculated by the World Bank is based on several

country indicators, such as women-friendly laws and procedures relating to mobility, employment, remuneration, marriage, motherhood, entrepreneurship and access to finance.

Critiques have called the 2017 Declaration a Trojan Horse, which may bring in more contentious issues to the already stalled multilateral trade negotiations (Bissio, 2017), as it can "allow developed countries to use the advantage of more forward gender policies to obstruct exports from underdeveloped nations" (Singh, 2017). In addition, Indian officials have observed that "gender does not relate to trade and hence WTO should refrain from bringing in non-trade issues" (Prabhu, 2017). There is strong evidence to contradict these concerns. Neoliberal economists have regarded trade liberalization as the most effective mechanism to empower women (Bhagwati, 2004; Seguino, 2000).<sup>3</sup> McKinsey Global Institute has shown that advancing gender equality could add nearly US\$ 28 trillion to global annual GDP (2015). Moreover, the Trojan Horse argument is unfounded and misplaced, as the very nature of this initiative is non-binding in nature. Neither does it impose any obligation on signing members to undertake actions, nor does it confer any right on any member to justify an otherwise WTO-inconsistent measure. The only plausible way for developed countries with advanced gender-responsive trade policies to obstruct exports from developing countries could be through the invocation of the public morality exception under Article XX(a) of General Agreement on Tariffs and Trade 1994 (GATT 1994); however, this option remains available to WTO members with or without

being a party to the 2017 Declaration (Bahri, 2020).

The 2017 Declaration should therefore not be seen as a Trojan Horse. On the contrary, it is a much awaited multilateral response that can usher in a new era of trade inclusiveness. This development coincides with an era of trade digitalization that is witnessing the creation of new products, new markets, new services and different ways of production and transportation. This wave of digitalization comes with a promise to make international trade more inclusive in the future as it will allow new players to participate and reap the benefits of trade across borders. In particular, trade digitalization can contribute to the economic empowerment of women by allowing them to overcome multiple barriers that impede their participation in trade. Paragraph 4 of the 2017 Declaration affirms that the regulation of trade digitalization (including trends such as e-commerce and blockchain technology) can remove barriers for “women’s economic empowerment and increase their participation in trade”.<sup>4</sup>

**“Blockchain – a new trend in trade digitalization that promises to transform international trade – can help women in overcoming barriers to trade.”**

This chapter focuses on how blockchain – a new trend in trade digitalization that promises to transform international trade – can help women in overcoming barriers to trade. The role of multilateral regulation in general, and the WTO in particular, can play in fostering gender justice through blockchain technology is also

examined. This chapter uses a typology of “blockchaining” to refer to the conduct of international trade through blockchain technology. The first section briefly explains the concept of blockchain technology. The following section outlines how blockchaining trade can enable women to overcome the barriers that impede their participation in trade. The final section examines whether blockchaining international trade requires multilateral regulation and the possible role the WTO can play in this respect.

## Blockchain explained

Blockchain is the new buzzword in the international trade community. Different public and private stakeholders around the world are talking about this

technology, which may shape and change the way international trade takes place in the future. Yet, only a few of us really understand what this technology stands for and what it entails. Simply put, blockchain enables a list of transactions (known as a ledger) to be stored in a decentralized manner. It is a kind of electronic bookkeeping that structures data, encrypts it and stores it on a network. Unlike

traditional databases that are administered and controlled by a centralized entity, blockchain technology is based on a peer-to-peer network and is administered in a decentralized manner (Ganne, 2018, p. vii). The concept is simple, yet experts argue that its potential to revamp international trade is quite significant.

Studies show that this distributed-ledger technology could lower the cost of cross-border payments, security trading and compliance by US\$ 15-20 billion per year by 2022 (McKinsey, 2018, p. 5). Recent developments also show that blockchain has the potential of making foreign trade more inclusive by removing the barriers women face in trade and commerce. This can be done by including unbanked women in the formal financial system, closing or reducing the small business credit gap, enhancing transparency and the decentralized creation of records, and reducing transaction costs and time involved in doing business. Blockchain can promote financial inclusion, as its key benefits include instant settlement, no third-party intermediary such as a bank, digital payments, low costs and fees, and secure, decentralized and risk-free transactions. These benefits help us understand why blockchain can change the way we trade and make this process more inclusive in nature. The employment of blockchain technology for the conduct of foreign trade can be termed “blockchaining trade”.

### **Barriers to trade for women: How blockchain can help**

Lacking a universally accepted definition for economic empowerment of women, this chapter views it as a process that provides women with equal economic opportunities by eliminating or reducing the barriers women face in accessing and owning economic resources. Multiple barriers impede the economic empowerment of women, including: lack of education and skills development; restrictive access to employment; excessive household responsibilities; poor working conditions and discriminatory

wage rates; insufficient protection of maternity needs; customary norms on gender and patriarchal social set-ups; discriminatory legislation and policy frameworks; lack of ownership of property and other assets such as copyrights and patents; and limited access to banking services and financing opportunities. These wide-ranging barriers work together to hinder women's access to economic opportunities by impeding their control over or ownership of economic resources. Addressing most of these barriers is outside the scope of this chapter due to space constraints. This academic intervention outlines and addresses only those barriers that can be possibly reduced or removed with the help of blockchaining international trade. These barriers, and the ways in which blockchain technology can address them, are categorized in the following three sub-sections.

#### **1. Access to finance and markets**

In several countries, various barriers impede women's access to owning a simple bank account (World Bank Group and WTO, 2020, p. 96). In the rural areas of low income countries, only about 20 per cent of bank account holders are women (UN Women, 2019, p. 5). Until 2017, the Democratic Republic of Congo had laws that forbade women from opening a bank account, registering a business or even signing simple contracts (World Bank Group, 2019, p. 11). Certain other countries, including Bolivia, Malawi, Maldives and Mauritius, have recently repealed similar discriminatory laws. Yet, it is still possible to find such laws, including in Bahrain and Uzbekistan. In Bahrain, for instance, the law designates the husband as the head of family and requires the wife to obtain permission from him for any task

such as opening a bank account or registering a business (World Bank Group, 2019, p. 13).

Blockchain cannot change such laws and societal norms, but its peer-to-peer technology can allow women to carry out payment transactions without an intervention from a third-party intermediary such as a bank. This enables women to have access to finance, receive and send money, save money in a secured manner and create a financial history that will allow them to build creditworthiness and hence secure credit in a cost-effective manner. Lower costs associated with access to finance, secured transactions and the mobile nature of this technology empower women who may not have an identity document to open a bank account. This also helps women who may not be able to afford the associated banking costs, or who may be deterred from going in person to a bank branch due to familial constraints and patriarchal cultural norms. In this manner, blockchain technology embodies the notion of women's financial autonomy and independence.

UN Women and the World Food Programme have launched a blockchain-backed initiative that allows Syrian refugee women in Jordan to have an online account without going through any third-party financial intermediary (UN Women, 2018). This enables these women to access their funds through a simple eye-scan at selected supermarkets and receive cash in a secure and cost-effective manner. Among many other finance-oriented initiatives, a blockchain start-up – Spenn – is exploring ways of making instant financial transfers through simple SMS services that

do not require an internet-backed smartphone.<sup>5</sup> These innovations allow women living in villages, hundreds or thousands miles away from bank branches, to engage in national and international transactions, apply for loans and have purchasing power in their hands. Statistics demonstrate that women-owned businesses receive 23 per cent less funding compared to male-owned businesses (OECD, 2018, pp. 5 and 22). Platforms such as EtherLoan and WeiFund can enable women entrepreneurs to build up creditworthiness with the help of monetary transactions recorded in their individual blockchain-based identity.<sup>6</sup> In this manner, women in developing countries can secure a loan without having to go through cumbersome banking procedures.

## **2. Creation and storage of identity and ownership documents**

According to the World Bank, women in developing countries are less likely than men to hold an official identification document such as a birth certificate, a passport or any other kind of national identity card (Hanmer and Dahan, 2015). The World Bank's Women, Business and the Law report shows that, in certain countries including Afghanistan, Benin and Pakistan, a married woman cannot apply for a national identity card in the same way as a married man (World Bank, 2018, p. 2). This restricts women's ability to work, do business or travel. Without an official identity document, women cannot enter into contracts, register businesses, open bank accounts, secure credit or develop a credit history. Acknowledging this barrier, the UN Sustainable Development Goal 16.9 has set the target of providing everyone (regardless of gender) with a legal

identity by 2030. Blockchain can help achieve this target as it can liberate women living without an official identification through creation and storage of their personal identification documents in an immutable manner. A digital identity can help women who do not have a passport or any kind of personal identification document to apply for bank accounts, secure employment and register businesses. However, the legal validity of blockchain-generated identification documents is an issue that, absent a universally accepted framework, would depend heavily on each country's laws and regulations.

Blockchain can also store records such as financial transactions, proofs of ownership and employment history in a secure and cost-effective manner. Storing land titles on blockchain can allow women to prove their land ownership without any possible interference from a male family member or any possibility of tampering or fraud. An ongoing project in Viet Nam is exploring how blockchain can enable businesswomen to prove their ownership of assets, establish ownership of intellectual property, secure a digital identity and boost their overall access to finance (Hammond and Young, 2018).

### **3. Engagement in global value chains and enhanced market access for MSMEs**

More than 30 per cent of MSMEs in the world are owned by women entrepreneurs (International Finance Cooperation, 2011, p. 5). Yet, women have not been able to participate actively in international trade. Only one in five of these MSMEs engage in international trade (Abney and Gonzalez Laya, 2018). What impedes

MSMEs' engagement in foreign trade are various factors including tariff and non-tariff barriers, cumbersome and expensive customs procedures, financial transactions with associated costs and difficulty in accessing finance. Removal of these barriers may not just empower these enterprises, but also those women owning almost one third of all formal MSMEs in the world. Blockchain can help in this respect. A report by the European Parliament observes that blockchain can help MSMEs internationalize, overcome costs associated with exporting and importing, and interact easily with consumers, other businesses engaged in the supply chain, customs officers and regulatory bodies (European Parliament, 2018).

Recent studies have shown that blockchain can possibly save 20 per cent of total transportation expenses, and it can reduce barriers within global supply chains and increase global trade by approximately 15 per cent (Ganne, 2018, pp. xi and xii). It can also lower the cost of doing business by cutting paperwork requirements and administrative hurdles posed by customs authorities and financial institutions. Blockchain can automate the credit checks and verification measures throughout the supply chain, as it can automatically register documents and store new data in a decentralized fashion. All of this can enable the financial sector and the shipping industry, for example, to reduce total costs by 15 to 30 per cent (Ganne, 2018, p. xii). This is a significant cost reduction for MSMEs, which would indirectly facilitate and encourage women to access global markets. Hence, lower costs for financial, customs, transportation and legal requirements can help MSMEs

gain competitiveness in foreign markets at higher profitability. This in turn can increase their overall market access and make it easier for them to participate in international trade.

A UN blockchain-based initiative – Buy from Women – aims to equip female farmers in developing countries with crucial information on the overall size of their cultivable land, production and weather forecasts, and market prices of their products through simple text messages.<sup>7</sup> This innovation can connect female farmers to global value chains (GVCs), thereby increasing their market access and awareness to be able to negotiate better deals. It could enable them to understand and track the journey their produce undertakes before it reaches the final consumer, and hence be better informed about prices and the sources of demand. Enhanced traceability of products could enable female farmers and entrepreneurs in developing countries to identify new market opportunities and expand existing market access.

Blockchain is certainly not a magic wand that simply needs to be waved in order to achieve economic empowerment of women. It cannot lead to the amendment of gender-discriminatory laws. It cannot change the ways in which gender-neutral laws are enforced in some countries. It cannot reconstruct the societal set-ups entrenched in patriarchal norms and beliefs. However, this study demonstrates that blockchain can serve as a technological intervention that can help women overcome some

of the barriers they face in accessing trade and commerce. At the same time, it must also not be forgotten that technologies can further exacerbate gender inequality due to the special nature of skills required to operate the technology. Blockchain in particular is an operative system that needs a highly specialized skill and understanding from its users. Lack of these skills and understanding of how to operate a blockchain-based mobile application, or how to initiate a smart

contract, or how to create, save or access documents, might erect even higher and formidable barriers to trade for women.

Most of the blockchain processes need access to the internet. An OECD study has shown that some 327 million fewer women than men in the world have a smartphone device with mobile internet access. Women are heavily under-represented in information and communications technology (ICT) related jobs, and men are four times more likely than women to gain skills and understanding of ICT (OECD, p. 5). Intel and Dalberg (2012) find that 25 per cent of the women who do not engage online are generally not interested in using the internet, and almost all of them believe that accessing the internet would not bring them “any benefit”. These findings provide a strong signal that, just like free trade, use of blockchain in trade and commerce can create more barriers for women to trade if not regulated properly. It could further exacerbate the digital divide between men and women. A robust regulatory

**“Blockchain technology embodies the notion of women’s financial autonomy and independence.”**

environment is therefore needed to make this technology work in parallel for trade as well as for the economic empowerment of women.

### **Building regulatory environments: why the WTO's role is indispensable**

Blockchain is regulated differently in different parts of the world. The United States has taken the lead in proposing regulations on blockchain at the national level, yet multi-layered regulations at federal and state levels and different state laws that regulate blockchain make its operation somewhat complicated and uncertain.<sup>8</sup> With Blockchain and Cryptocurrency Regulation 2019, Mexico has developed a legal framework to regulate the financial technology industry that extends to the regulation of cryptocurrency, crowdfunding and e-money.<sup>9</sup> Belarus has recently enacted a specialized law known as the Digital Economy Development Ordinance, which designates blockchain as a specific sector with a specialized legal regime to regulate blockchain-based businesses in the country.<sup>10</sup> These and many other countries have gone ahead and embraced this growing technology and these evolving business models. Yet, multiple countries still remain sceptical and remain far from either regulating this area or even legalizing it.

China, once considered as a champion of cryptocurrency, has banned the use of initial coin offerings since 2017 (Wildau, 2017). On the other hand, China's Supreme Court has recently issued a landmark ruling that treats blockchain-authenticated evidence as binding in legal disputes (Dotson, 2018). The European Committee on

International Trade has issued a report that seeks to develop a regulatory ecosystem in the European Union for blockchain and its businesses (European Parliament, 2018). The report acknowledges the potential role blockchain can play in conducting international trade in a cost-effective manner and making it gender-responsive in nature. However, data privacy concerns and the General Data Protection Regulation (GDPR)<sup>11</sup> seem to make this a distant reality in the European Union unless future blockchain applications can include mechanisms that protect personal data and the privacy of users who want to remain anonymous or be forgotten by the database. As per GDPR, all individuals have a right to decide how their personal information and personal data are treated. This includes the right to be forgotten, right to data portability, right to access information related to you and right to edit or delete your information or data. On the other hand, blockchain is an immutable ledger, which ensures that the available data are visible to everyone in a decentralized manner and that the data cannot be deleted or be forgotten. This conflicting relationship between blockchain-run applications and GDPR brings to light two clashing interests, i.e. the promotion of business and innovation, and the protection of privacy and data.

These examples show that many regulatory agencies are either trying to catch up with this rapidly evolving technology, or are in a major state of disagreement about the value blockchain adds to the ecosystem of international trade. This lack of regulation or the existence of different country regulations paves an uncertain road ahead for blockchain-supported

businesses. This in itself poses a barrier to the use of blockchain for economic empowerment of women. The discussion shows that the nature of blockchain and its employment in cross-border trade cannot solely be regulated by country-specific legislation. A harmonized regulatory ecosystem is needed to counter the challenges that this technology can face in the spheres of data protection, privacy, transparency and financial crime as the data fed into the system are immutable. If not regulated properly and in a unified manner, it can become the "Achilles' heel" of the trade digitalization era by widening the digital divide between women and men and between technologically advanced and not-so-advanced countries. Small firms and marginalized players in trade, such as women in developing countries, could be marginalized even further (Ganne, 2018, p. 88). Internationally accepted global standards or a multilateral regulatory framework is required to ensure that this does not happen. The WTO can play a pivotal role in this respect.

Blockchain is not ripe for a multilaterally negotiated regulation as of yet, as this field is rapidly evolving and new applications and businesses are changing the ways cross-border trade is carried out in different parts of the world. At this early stage, the WTO can develop a set of guidelines for the use of blockchain in international trade. These guidelines can provide guidance to the national regulatory authorities and policymakers on how they can create a business-conducive regulatory environment for these innovative technologies in the future. The guidelines can establish global benchmarks for recognizing the legal validity of blockchain transactions and

blockchain-enabled documents. Alternatively, they can by reference incorporate the Model Law on Electronic Transferable Records adopted by United Nations Commission on International Trade Law (UNCITRAL) in 2017, which established the benchmarks and conditions that need to be fulfilled before an electronic record can be treated as a transferable document.<sup>12</sup>

WTO members could establish a Blockchain Advisory Committee to study the applications of blockchain that can have an impact on international trade and make recommendations on how such applications can be regulated in a coherent and unified manner in the future. This Committee should also engage with and gather the opinions of different members on the future of blockchain, the impact it is having in their country and their vision on its regulation. This will enable the Committee to closely follow country-specific developments in blockchain technology impacting international trade. The Committee can identify the regulatory hurdles that possibly need to be addressed by individual members. This committee should have multidisciplinary experts, with expertise in the fields of anti-money laundering, tax evasion, business development, information technology, gender justice, environment protection, data protection and organized crime. This Committee can also include representatives from the private sector, as industries can absorb the high cost the adoption of this technology entails. The interdisciplinary nature of this work will allow for the creation of dialogues and deliberations among different public and private stakeholders, which is essential to preparing a conducive regulatory environment that can

balance different conflicting interests. This will enable the proposed committee to employ a concerted and cooperative approach for making recommendations on developing a framework for international standardization of digitalized transactions and applications.

In this manner, the WTO can play an instrumental role in the development of international standards and best practices that can underpin the regulation of blockchain-based businesses in the future. It can also recommend guidelines for the formation and conduct of public-private partnerships that may be needed to employ blockchain technology for cross-border trade. In doing so, the WTO can apply a gender-responsive approach, i.e. the WTO can recommend gender-responsive best practices that members can employ for digitalization of trade and employment of blockchain technologies to conduct cross-border transactions. Employment of these international standards can ensure that blockchaining trade provides equal economic opportunities to both women and men and that it helps women overcome the barriers to trade they face at the moment. To establish a more predictable and conducive business environment, WTO members can consider and adapt these recommendations, and if possible, transpose them into their national legislation. These recommendations, to begin with, may not have any legal bearing, but they can provide a blueprint for countries to develop their own legislation, regulations and procedures. Pending the establishment of the proposed Advisory Committee, the ongoing Aid for Trade Programme can play an important role in this respect.

Economic empowerment of women has been a focal point for the WTO's Aid for Trade Programme since 2011. Following the 2017 Declaration, the Aid for Trade Work Programme 2018-2019 is the first attempt by the WTO to analyse how international trade can contribute to the design of a gender-responsive trade agenda (WTO, 2018). Focusing on economic diversification and women empowerment, the Programme crafts a multi-pillared role for Aid for Trade. This role is focused on providing youth and women with training on required skills, access to finance, bridging the digital divide between men and women and developed and developing countries, increasing competitiveness of MSMEs and connecting them to GVCs, and organizing thematic workshops on digital connectivity, e-commerce and access to finance issues. Its focus on enhancing digital connectivity and bridging the digital divide opens up a window for discussions on regulating blockchain technology under the Aid for Trade agenda.

Paragraph 5 of the 2017 Declaration mentions the agreement of WTO members to ensure that "Aid for Trade supports tools and know-how for analysing, designing and implementing more gender-responsive trade policies".<sup>13</sup> The future Aid for Trade Work Programmes should showcase the 2017 Declaration as a major achievement and clarify the role Aid for Trade can play in its implementation. Moreover, paragraph 5 together with paragraph 4 (affirming the need to regulate trade digitalization for women's economic empowerment) mandates some discussion on the recent technological trends that are shaping trade and can contribute

to women's empowerment. The upcoming Aid for Trade Work Programmes can offer a suitable venue for these discussions.

## Conclusion

Gender inequality is no longer viewed simply as a purely ethical or moral challenge; it is now recognized as a significant challenge to economic development. The world economy suffers when women – who account for one half of the world's working-age population – are not included in the economy and are impeded from contributing to economic growth and development. Recent studies show how achieving the economic empowerment of women has become a compelling business case. Multiple interventions are required to achieve women's economic empowerment, and international trade arguably is one of the required and effective interventions in this respect. Women's empowerment and international trade share an intricate and complex relationship, as the former can be achieved through effective regulation of the latter. The 2017 Declaration is a milestone development that acknowledges this relation and calls for the creation of a gender-responsive trade environment at national and international levels.

In line with the 2017 Declaration, the Trade Impact Group of International Gender Champions (IGC) has designed a questionnaire that calls on WTO members and observers to share best practices on various topics at the upcoming Ministerial Conference (MC 12) to build an evidence base for inclusive trade.<sup>14</sup> These topics are wide-ranging in nature and cover the following aspects: gender-based

analysis of trade policy; enhancing women entrepreneurs' participation in public procurement; connecting women entrepreneurs to international value chains; promoting financial inclusion for women; women and trade in trade agreements; and women in digital trade. WTO members have to identify and describe the law, policy or any other instrument they are using to achieve the mentioned good practices. They are also required to address the problem or barrier the mentioned best practices are seeking to overcome. Countries are also to identify the targeted beneficiaries, organizations that are involved in this initiative, activities that are planned, and the technological requirements for the planned activities. The questionnaire also requires the members to describe the results and outcomes they expect to achieve or have already achieved in the above-mentioned areas. This is an appreciable initiative, which will allow the signatory members of the 2017 Declaration to reflect on whether they have made any progress in ensuring that their trade policies and practices are gender-responsive in nature. This can also lead to the sharing of ideas and plans on how existing impediments can be removed and gender equality can be achieved through trade laws, policies and practices. This initiative can foster exchange on the adoption of technology (such as blockchain) and the creation of a conducive regulatory environment for the conduct of trade. It can provoke discussions in and among countries on how to create a gender-positive trade environment with various best practices, including regulation of blockchain-enabled trade transactions and applications.

Other steps also have been taken to implement the actions and non-binding

commitments under the 2017 Declaration. For example, the WTO has nominated a Trade and Gender Focal Point with a dedicated e-mail address, which is responsible for coordinating work among divisions, taking account of what the WTO is doing and identifying further actions and initiatives that the WTO can undertake in this respect. Gender, trade and technology have formed the centre stage of discussions at the last few WTO Public Forums. These Forums have brought companies, civil society organizations, academics, policymakers and intergovernmental organizations together to discuss the issues of connecting women to global trade and digitalization of trade. Moreover, the WTO is planning to implement a women's entrepreneurship programme that will provide women with training on specific tools and information on how they can achieve economic empowerment through trade. This training programme could include modules on using simple blockchain

applications to create and store identification documents, create accounts to receive and send money without banking services, create and use financial transactions to prove creditworthiness, apply for micro-finance, credits and trade financing, and apply for and store intellectual property rights (IPR)-related ownership documents. Such an initiative can help reduce the digital divide between men and women by enabling women to reap the benefits of blockchaining trade. Inclusion of these modules can breathe life into the 2017 Declaration, which explicitly acknowledges the role of technology in women's empowerment. This initiative, along with other proposed actions, will fan the flame even further. With the ongoing discussions and scholarly works on trade, technology and gender, half the battle against gender inequality is already won. We need to keep these discussions going in order to win the other half of this battle for gender justice.

## Endnotes

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<sup>1</sup> Joint Declaration on Trade and Women's Economic Empowerment, signed at WTO Ministerial Conference (Buenos Aires, December 2017).

<sup>2</sup> The members that have not signed the 2017 Declaration have a combined average score of 65.6 per cent, and the members that have signed it have a combined average score of 80.7.

<sup>3</sup> Keynesian economists have countered this point of view.

<sup>4</sup> 2017 Declaration, para. 4.

<sup>5</sup> Spenn Mobile Banking website, <https://www.spenn.com/>.

<sup>6</sup> Etherloan website, <http://www.etherloan.io/>; WeiFund website, [http://weifund.io/?utm\\_source=StateOfTheDApps](http://weifund.io/?utm_source=StateOfTheDApps).

<sup>7</sup> For more information, see the UN Women webpage, <http://www.unwomen.org/en/digital-library/publications/2017/3/buy-from-women-platform-brochure>.

<sup>8</sup> Several bills are pending approval: Virtual Currency Consumer Protection Act of 2018; Virtual Currency Market and Regulatory Competitiveness Act of 2018; Blockchain Regulatory Certainty Act 2019.

<sup>9</sup> Ley Para Regular las Instituciones de Tecnología Financiera (Diario Oficial de la Federación el 9 de marzo de 2018).

<sup>10</sup> Digital Economy Development Ordinance (Ordinance 8, 21 December 2017).

<sup>11</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC.

<sup>12</sup> Model Law on Electronic Transferable Records of the United Nations Commission on International Trade Law (7 December 2017, A/72/458).

<sup>13</sup> 2017 Declaration, para. 5.

<sup>14</sup> Trade Impact Group: Call for Good Practices, <https://s3.eu-west-2.amazonaws.com/igc-production/files/>

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## Comments



**EMMANUELLE GANNE\***

Since the launch of the 2017 Declaration on Trade and Women's Economic Empowerment, growing attention has been paid to the role that trade can play in helping women realize their full potential in the world economy. In a joint publication titled *Women and Trade: The Role of Trade in Promoting Gender Equality*, the World Bank and the World Trade Organization (WTO) show that trade is largely beneficial to women. Firms that engage in international trade employ more women than non-exporting firms (33 per cent on average compared to 24 per cent for non-exporting firms) (World Bank and WTO, 2020), and trade increases women's wages and economic equality, and creates better jobs for women.

However, women face many more constraints than men in participating in international trade both in terms of "at the border barriers" – e.g. discrimination faced at border crossings – and "behind the border" constraints like difficulty to obtain finance, including trade finance. While much has been said on the role that e-commerce plays in empowering women, few studies have so far discussed how blockchain technology can help empower women to trade. The chapter written by Amrita Bahri provides useful insights into how this technology can help women

reap the economic benefits of international trade.

The author argues that "blockchaining international trade", i.e. using blockchain to process trade transactions, can boost women's participation in international trade in three ways. First, it can help women access finance by allowing unbanked women to carry out payment transactions on a peer-to-peer basis without a third-party intermediary and in full independence. The use of blockchain to "bank the unbanked" and to facilitate the transfer of money has been widely explored both in the literature and in the business world and could have a major impact on women. Beyond the examples mentioned by the author, another interesting initiative is Vipicash, a FinTech start-up that uses blockchain technology to enable secure money transfer among women, so that they can have access and control over their own money, independent of the male members of their family. Another interesting potential of blockchain noted by the author is the opportunity that the technology offers to traders to create their own financial history. This is particularly important for micro, small and medium-sized enterprises (MSMEs) and women, who often struggle to access finance, including trade finance, because of lack of credit history.

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The second channel through which blockchain can empower women, the author argues, is through the creation and storage of identity and ownership documents. The question of identity lies at the heart of international trade. It determines in many ways the ability to trade. Trade requires knowing who you deal with and being able to verify and trust the identity of your trading partner. Blockchain opens new ground in that respect because it allows people without an official identity to create their own digital identity. It enables the emergence of what is called the self-sovereign identity (SSI) model according to which individuals and organizations have sole ownership of their digital identity and control it. The rise of SSI, combined with the possibility that blockchain offers to build one's own financial history, could potentially be one of the most powerful levers to empower women.

When it comes to trade, a third critical channel, the author notes, is the potential that blockchain opens to facilitate engagement in global value chains (GVCs) and enhance market access for MSMEs, many of which are women-owned.

Blockchain's potential to slash coordination and processing costs is

what led major stakeholders involved in international trade, from banks to shipping companies and big retailers, to inject millions to build blockchain-based consortia to enhance transparency and remove frictions along supply chains.<sup>1</sup> The cost reductions that could result from these

initiatives could prove particularly beneficial for small traders.

However, as the author rightly notes, blockchain is not a magic wand. Beyond the regulatory aspects that the author discusses – e.g. blockchain cannot change the way in which laws are enforced, blockchain poses a risk of regulatory fragmentation – a particularly important issue is that of interoperability. Blockchain can be a powerful tool to remove frictions from international trade, but only if the multiple platforms that are emerging in the financial, transportation and logistics, and customs fields talk to each other. Unfortunately, we are currently facing a digital island problem. Making blockchain trade-related platforms interoperate will not only require finding ways to build technical bridges between platforms built on different distributed-ledger technologies, but also aligning the

semantics (what means what), data models and processes. This is where multilateral organizations can play an instrumental role.

The author suggests three valuable courses of action for the WTO. First, the WTO could develop a set of guidelines for the use of blockchain in international trade to

provide guidance to national authorities on how they can create a business-conducive regulatory environment for the use of blockchain. Second, the author proposes the establishment of a Blockchain Advisory Committee to identify regulatory hurdles, study the applications of blockchain that can have

**“Growing attention has been paid to the role that trade can play in helping women realize their full potential in the world economy.”**

an impact on international trade and make recommendations on how such applications can be regulated in a coherent manner. Third, training on blockchain could be integrated into WTO training, in particular the woman entrepreneurship programme that the Organization is planning.

Blockchain can be a powerful tool to remove frictions from international trade and promote women's access to international markets but realizing the full potential of blockchain will require more than the technology. It will require political will and action to allow interoperability of blockchain platforms and to create a regulatory framework that is conducive to the large-scale deployment of the technology. But it will also require addressing the digital divide through investment in physical

information and communications technology (ICT) infrastructure and information technology (IT) education for women. Women's access to the internet and ownership of digital devices remain significantly lower than men's<sup>2</sup> and tech-related jobs remain male-dominated. This is also true for blockchain.<sup>3</sup> Multilateral organizations have a key role to play in helping address these issues and turn blockchain's potential for women into a reality. And so do women themselves. Women's blockchain networks, such as Global Women in Blockchain<sup>4</sup> and African Women in Blockchain,<sup>5</sup> that assist women and help them seize the opportunities that this new technology opens, are welcome developments that will, no doubt, contribute to making blockchain work for women's economic empowerment.

## Endnotes

- <sup>1</sup> For an overview of various consortia established in the trade and trade finance space, see Patel and Ganne (2019).
- <sup>2</sup> In developing countries the internet access gap is 25 per cent on average, with a wide variation across regions (Intel and Dalberg, 2012).
- <sup>3</sup> A 2018 study by Longhash showed that among 100 blockchain start-ups, female employees accounted for just 14.5 per cent and female managers for 7 per cent only. In 78 out of the 100 start-ups, there is no female leader (Longhash, 2018).
- <sup>4</sup> <https://globalwomeninblockchain.org/>.
- <sup>5</sup> <https://afriblockchain.org/africa-women-in-blockchain/>.

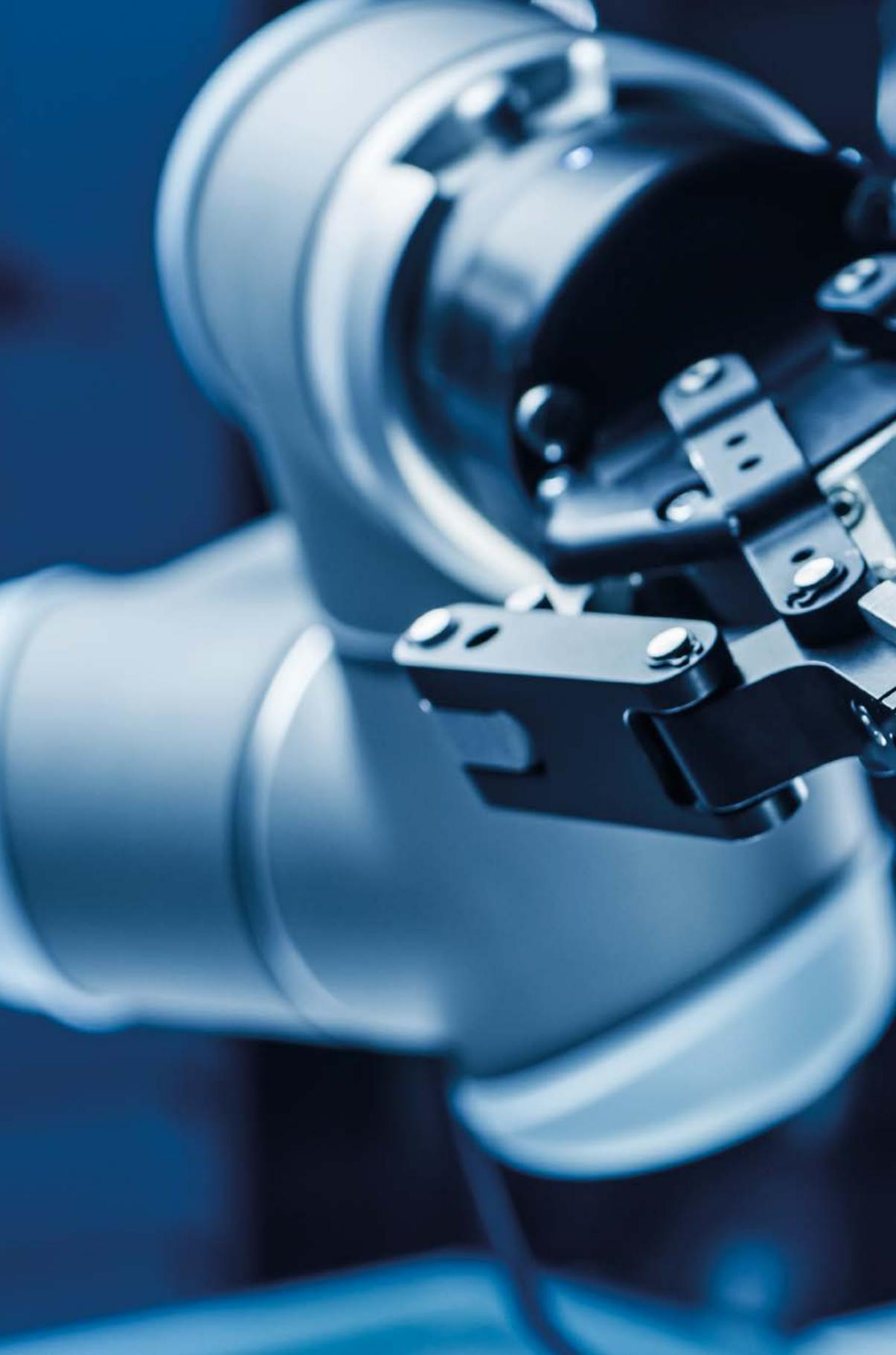
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**The ways  
forward**





## Chapter 15

# Data regulation in trade agreements: different models and options ahead

Henry Gao\*

*\* The contents of this chapter are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

“Data is the new oil”. Just like oil, which powered the economy in the last century, data are what moves the world today. This is especially true for international trade. The crucial role played by data can be observed at every step of the process, from the conception of a new product and the sourcing of raw materials and parts, to the manufacturing process and the transportation of products across borders, until they finally reach the hands of consumers from every corner of the world.

To be sure, the process of international trade has always been accompanied by the exchange of data, be it about the product, the seller or the buyer. What is unprecedented, though, is the ubiquity of data in the modern economy. This is a manifestation of the many important changes that emerged in the first two decades of the new century. For trade in goods, these include the following factors: the emergence of regional and even global supply chains, which involves the sharing and exchange of data among many parts manufacturers during the various stages leading to the final products; the invention of 3D printing, which makes it easy to customize products based on the needs of customers and blurs the boundary between the manufacturer and the consumer; and the Internet of Things, which turns traditional products into conduits for

the collection, analysis and utilization of data. Similar changes can also be observed in the realm of services trade, where the advent of the internet has not only removed the natural barrier of physical distance and made many hereto non-tradable services tradable, but also, through the servicification of goods (Lanz and Maurer, 2015; WTO, 2018, pp. 111-116 and 157), rendered the movements of physical goods unnecessary and turned them into new categories of services trade.

More importantly, rather than acquiring the goods or services for their sole use, consumers nowadays often find that all they get is the temporary right to access and deploy data. At the same time, as the access to data is democratized, the amount of data generated by users also grows exponentially. A report by McKinsey, for example, estimated that global data flow has grown 45 times in the decade

from 2005 to 2014 (Manyika et al., 2015). Such phenomenal growth also led to breakthroughs in artificial intelligence, where powerful machine learning helped to unleash the full potential of big data to generate refreshing insights into everything it touches. In the area of trade, for example, big data not only helps us to gain more comprehensive and accurate information about the shifts in demand and supply so

that manufacturers may better adjust their productions, but also churns out more refined granular analysis about

**“Rather than acquiring the goods or services for their sole use, consumers nowadays often find that all they get is the temporary right to access and deploy data.”**

the crucial differences between different segments in the market so as to better tailor the same product into many variations to cater to the individual needs of consumers.

## National regulations

Given the growing importance of data in business and trade, more and more firms are trying to gather as much data as possible in this new gold rush. Due to the network effects (OECD, 2017, p. 135), the electronic commerce industry is, more often than not, a winner-takes-all game. This means that data is increasingly being concentrated into the hands of a few e-commerce giants such as Amazon, Facebook and Google. Such concentration of power leads to concerns over potential abuse, which in turn heightens the need to regulate the flow and transfer of data, both within and across national borders.

Any framework for data regulation would involve three groups of players: the individual, who provides the raw data, and uses the processed data; the firm, which processes the raw inputs from the consumer, and usually controls such data; and the state, which monitors and regulates the data used by the first two groups. Their different interests often result in conflicting priorities, with the individual advocating privacy protection, the firm promoting unhindered data flow, while the state focusing on the security implications.

While all regulators would agree on the need to strike a balance between the clashing interests of different stakeholders, their approaches often differ in practice. Some jurisdictions prioritize the need to safeguard the

privacy of users. A good example in this regard is the General Data Protection Regulation (GDPR) of the European Union, which recognizes “[t]he protection of natural persons in relation to the processing of personal data” as “a fundamental right”.<sup>1</sup> On the other hand, some jurisdictions put the commercial interests of firms first. In the United States, this is reflected in the 1996 Telecommunication Act, which notes that it is “the policy of the United States ... to preserve ... free market ... unfettered by Federal or State regulation”.<sup>2</sup> In contrast, national security concerns are often cited to justify restrictions on cross-border data flows, albeit in varying degrees in different countries. A recent example is China’s 2017 Cybersecurity Law, which imposed several restrictions aiming to “safeguard cyber security, protect cyberspace sovereignty and national security”.<sup>3</sup>

Traditionally, restrictions on cross-border data flow were the most common type of digital protectionism (Wu, 2017, pp. 22-23). More recently, however, data localization requirements have also become popular, with the following as main variations (Gao, 2018a, pp. 303-304):

1. Local commercial presence or residency requirements. The origin for such requirements can be traced back to the General Agreement on Trade in Services (GATS), where service providers are often required to have a local commercial presence before they can provide a service. While such requirements could potentially affect all service sectors, e-commerce is especially vulnerable as it is often detached from traditional brick-and-mortar establishments.

2. Local infrastructure requirements. These include both hardware requirements for service providers to use computing facilities located in the host territory and software requirements to use computer processing and/or storage services located in such territory.
3. Local content requirements. Depending on the *modus operandi* of the local content requirements, this obligation can be further divided into two categories. One is granting preferences or advantages to goods or electronically transmitted contents produced in a territory, or to local computing facilities or computer processing or storage services supplied locally. The other is requiring foreign service suppliers to purchase or use local goods or electronically transmitted contents.
4. Local technology requirements. This can also be broken down into two types of obligations. The first is the requirement for foreign service suppliers to transfer technologies as a condition of providing a service. This is often tied to the requirement to have a local partner. The other is the requirement for foreign service suppliers to purchase or use local technologies.

While data flow restrictions and data localization requirements are both barriers to e-commerce, it is important to note the differences between the two. Data flow restrictions curb the cross-border transfer of data. This normally targets the outflow, but can also affect the inflow, such as banning certain websites. As the restriction normally affects both domestic and foreign firms alike, it is more akin to a most-favoured nation (MFN) treatment

type of restriction. While such restrictions make it more difficult for firms to move data around, it could reduce data breach risks for individuals and regulatory costs for states. On the other hand, data localization requirements tend to affect mostly foreign firms so they are more of a National Treatment issue. Such requirements obviously would increase costs for foreign firms, but they could also increase risks of personal data breach and even regulatory costs for states due to the duplication of data on both local and off-shore servers.

### Emerging approaches

E-commerce has been featured in the World Trade Organization (WTO) negotiating agenda since 1998, when the members adopted the Declaration on Global Electronic Commerce,<sup>4</sup> which also established a temporary moratorium on customs duties on digital transmission. Pursuant to the Declaration, the General Council adopted the Work Programme on Electronic Commerce,<sup>5</sup> which divided up the work among several WTO bodies such as the Council for Trade in Services, the Council for Trade in Goods, the Council for Trade-Related Aspects of Intellectual Property Rights and the Committee on Trade and Development. However, notwithstanding its ambitious agenda, the Work Programme has so far languished along with the rest of the Doha Round. This changed only very recently, when renewed interests among the membership led to the launch of the Joint Statement Initiative on E-commerce on 25 January 2019.<sup>6</sup>

Even absent new rules, however, some of the existing rules in the WTO can still be expanded to cover e-commerce.

To the extent that e-commerce affects trade in goods, such rules could include the existing MFN and National Treatment rules in the General Agreement on Tariffs and Trade 1994 (GATT 1994), as well as the prohibition of local content requirements under the Agreement on Trade-Related Investment Measures (TRIMs). As most e-commerce activities do not involve tangible products, however, it seems that the GATS is more promising. For example, as mentioned earlier, data flow restrictions and data localization requirements could potentially be subject to GATS MFN and National Treatment obligations. Moreover, to the extent that data regulations are part of the specific commitments undertaken by a WTO member, they would be subject to the domestic regulation obligations under Article VI of the GATS, such as the requirements for the rules to be based on objective and transparent criteria, not more burdensome than necessary, and administered in a reasonable, objective and impartial manner. Given the close relationship between the internet and telecommunication, one may also argue for the application of the existing GATS disciplines on the telecom sector (Gao, 2011), such as the GATS Telecom Annex and the Telecom Reference Paper.

In contrast to the slow progress in the WTO, many regional trade agreements (RTAs) have been able to include new rules on data regulations (Wu, 2017). The three main players in this regard

are the United States, the European Union and China, with each having its own model.

### 1. The US model

As the world leader in digital trade, the United States has included rules on data regulation in many of its free trade agreements (FTAs), with the now-defunct Trans-Pacific Partnership (TPP) Agreement and the recently concluded United States-Mexico-Canada Agreement (USMCA) as leading examples.<sup>7</sup> The obligations in the two agreements can be divided into the following categories:

The first are passive obligations, which prohibit the members from adopting

various protectionist policies such as customs duties on electronic transmission, discrimination against foreign digital products, restrictions on cross-border transfer of information, forced localization requirements and forced transfer of source codes.

The provisions are designed to

minimize the distortions created by government interventions and leave the development of the e-commerce market in the hands of the e-commerce players.

The second type are enabling provisions, which require member governments to introduce or maintain regulatory frameworks that facilitate the development of e-commerce. These include, for example, the requirements for the members to adopt domestic laws in line with the principles of the United Nations Commission on

**“Even absent new rules, some of the existing rules in the WTO can still be expanded to cover e-commerce.”**

International Trade Law (UNCITRAL) Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts, the recognition of the legal validity of electronic signatures or electronic authentication methods, and the acceptance of electronic documents as the legal equivalent of their paper versions. These provisions all deal with one key issue facing the e-commerce sector, i.e. the recognition of e-commerce transactions as equivalents of the traditional pre-internet ones.

In addition, recognizing the huge market power of the big digital players, the two agreements also include rules to check corporate power. First, market players that own or control key infrastructures could abuse their power by unreasonably denying their business users access to their infrastructures, making it impossible for these users to conduct e-commerce activities. To address this problem, the agreements provide consumers (including business users) with the freedom of access to and use of the internet for e-commerce, subject only to network management and network safety restrictions. Second, to deal with potential misuse of consumer information, the agreements also include provisions on online consumer protection, personal information protection and unsolicited commercial electronic messages.

Recognizing the special needs of governments, both agreements have excluded government procurement and information held or processed by the government from the coverage of the digital trade chapters. Both also carved out the financial services

sector, except that the USMCA provides that the prohibition on data localization requirements would continue to apply to the sector so long as a financial regulator has access to the relevant data for regulatory purposes. Both agreements also include language to cooperate on cybersecurity matters, with the USMCA going one step further by calling for risk-based regulations.

As the main proponent of the plurilateral Trade in Services Agreement (TISA) negotiations, the United States also proposed similar provisions in the draft TISA agreement. Most of these can be found in the e-commerce chapter, where the United States called for provisions that guarantee service suppliers the freedom to transfer information across countries for the conduct of their business; freedom for network users to access and use services and applications of their choice online, and to connect their choice of devices; prohibition of data localization requirements as a condition of supplying a service or investing; and prohibition of discrimination against electronic authentication and electronic signatures. In addition, the horizontal provisions also include prohibitions on a host of localization requirements as mentioned earlier. While they apply to all service sectors, they would be of particular relevance to e-commerce due to the nature of the sector.

## **2. The EU model**

The main concern of the European Union, when it comes to e-commerce, is privacy protection. This is demonstrated by the GDPR, which recognizes privacy as not only a consumer right, but also a fundamental human right. The GDPR provides that

prior authorization is required before personal data can be transferred to a third country, unless that country is recognized by the European Union as providing an equivalent level of data protection.

However, in its RTAs, the European Union has not been able to include substantive language on such issues. This is due to the internal differences between the two Directors-General (DGs) with overlapping jurisdictions on the issue, i.e. DG-Trade, which favours free trade for the sector, and DG-Justice, which has concerns over personal information protection (Aaronson and Leblond, 2018, pp. 261-262). Thus, notwithstanding its strong interest in privacy protection, the EU positions in its existing FTAs have been rather modest, which usually requires Parties to adopt their own laws for personal data protection to help maintain consumer trust and confidence in electronic commerce. In February 2018, however, the two DGs were finally able to reach a compromise position, which includes, on the one hand, horizontal clauses on the free flow of all data and a ban on localization requirements, while, on the other hand, affirming the European Union's right to regulate in the sector by making clear that it shall not be subject to investor-state arbitration.<sup>8</sup> Given the potentially intrusive rules in the GDPR, we might start to see a more aggressive push for stronger language on personal data protection in the European Union's RTAs in the future.

### 3. The China model

In contrast with the European Union and the United States, China has traditionally taken a cautious approach to data regulation in trade agreements.

Until very recently, it has not even included e-commerce chapters in its RTAs.<sup>9</sup> This only changed with its FTAs with Australia and Korea, which were both signed in 2015. Moreover, the provisions in these two FTAs are rather modest, as they mainly address trade facilitation-related issues, such as a moratorium on customs duties on electronic transmission, recognition of electronic authentication and electronic signature, protection of personal information in e-commerce, paperless trading, domestic legal frameworks governing electronic transactions, and the need to provide consumers using electronic commerce a level of protection equivalent to that in traditional forms of commerce.

### 4. Reasons for the differences?

The diverging approaches among the three major players are not randomly chosen. Instead, they reflect deeper differences in their respective commercial interests and regulatory approaches.

First, the global e-commerce market is mostly dominated by China and the United States. Among the ten biggest digital trade firms in the world, six are American and four are Chinese.<sup>10</sup> Of course, this does not necessarily mean that they must share the same position. Upon closer examination, one can see that the US firms on the list tend to be pure digital service firms. Firms like Facebook, Google and Netflix do not sell physical products, but only provide digitalized services such as online search, social network or content services. In contrast, two of the top three Chinese firms – Alibaba and JD.com – sell mainly physical goods. This is why the United States focuses on digital

services while China focuses on traditional trade in goods enabled by the internet.

One may argue that China also has giant pure digital firms like Baidu and Tencent, which are often referred to, respectively, as the Google and the Facebook of China. However, because they serve almost exclusively the domestic Chinese market and most of their facilities and operations are based in China, they do not share the demands for free cross-border data flow like their US counterparts, which have data centres in strategic locations around the world.

As for the European Union, with no major players in the game, their draconian privacy rules could be viewed as a form of digital protectionism (Aaronson, 2019) to fend off the invasions of American and Chinese firms into Europe.

The second influence is their different domestic regulatory approaches. In the United States, the development of the sector has long benefited from its “permissive legal framework”, which aims to minimize government regulation on the internet and relies heavily on self-regulation in the sector. Such policy is even codified in the law, with the Telecommunication Act of 1996 explicitly stating that it is “the policy of the United States ... to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation”. Therefore, it is no surprise that the United States wishes to push for deregulation and the free flow of information at the international level. At the same time, the United States does not have a comprehensive

privacy protection framework. Instead, it relies on a patchwork of sector-specific laws, which provides privacy protection for consumers of a variety of sectors such as credit reports and video rental. This is further complemented by case-by-case enforcement actions by the Federal Trade Commission (FTC), and self-regulation by firms themselves. This explains why, in its RTAs, the United States does not mandate uniform rules on personal information protection but allows members to adopt their own domestic laws.

On the other hand, in China, the internet has always been subject to heavy government regulations, which not only dictate the hardware one must use to connect to international networks, but also the content that may be transmitted online.<sup>11</sup> Many foreign websites are either filtered or blocked in China, which confirms China's cautious position on free flow of data. Moreover, in 2017, China also adopted the Cybersecurity Law, which requires the operators of critical information infrastructure to store locally personal information they collected or generated in China. This is at odds with the US demand to prohibit data localization requirements. Privacy protection is also weak in China, as it was only incorporated into the Chinese legal system in 2009, along with extensive exemptions for the government.

The European Union, in contrast, has a long tradition of human rights protection, partly in response to the atrocities of the Second World War. Coupled with the absence of major digital players wielding significant market power and the lack of a strong central government with overriding security concerns, this translates into

a strong emphasis on privacy in the digital sphere. Moreover, the European Union is also able to transcend the narrow mercantilist confines of the United States, and recognize privacy as not only a consumer right, but also a fundamental human right. Such a refreshing perspective is probably the biggest contribution made by the European Union to digital trade issues.

### Elements for the way forward

With the revival of e-commerce discussions in the WTO in 2016, many members have made new submissions. Most of these largely reiterate their existing positions in RTAs and other plurilateral agreements. For example, in its July 2016 “non-paper”, the United States called for the dismantling of both cross-border and domestic barriers to digital trade such as restrictions on cross-border data flow and government regulations requiring localization or forced transfer of technology or source code, and urged e-commerce firms to be given more autonomy including the freedom to use the technology, authentication methods, encryption methods, and facilities and services of their own choice. The Chinese submission in November 2016, on the other hand, focused more on trade facilitation measures such as simplified border measures and customs clearance, paperless trade and single window, and the establishment of platforms for cross-border e-commerce transactions such as the electronic World Trade

Platform (eWTP), an idea first proposed by Alibaba Chairman Jack Ma. These positions have largely been carried over in their submissions in the Joint Statement Initiatives, which as of 10 February 2020 has received 52 submissions from the 77 participants.<sup>12</sup> We can gather the following from these submissions:

First, most developed countries and some developing countries seem to agree on the need to ensure free cross-border data flow in principle. At the same time, such freedom is often reserved for provision of covered services or investment only, and has been subject to exceptions on grounds ranging from personal information protection to the special needs of specific sectors like financial services.

Some developing countries are more hesitant on the issue, due to either security or revenue concerns.

Second, almost all countries agree with the goal of privacy or personal information protection, but they differ on how to get there. While many countries are content with each country

adopting its own domestic laws that meet certain minimum standards, privacy regimes with strong extraterritorial elements like the GDPR could create pressure for affected trade partners to adopt similar or even uniform rules.

Third, prohibition on data localization requirements is also widely accepted among more advanced economies, subject to carve-outs for government

**“Almost all countries agree with the goal of privacy or personal information protection, but they differ on how to get there.”**

data, government procurement, financial services, privacy protection and security measures. While some countries are considering data localization requirements in the false hope that such measures could create more local jobs or nurture local digital champions, more and more countries are coming to the realization that such measures would be more likely to harm rather than help the development of their digital sectors.

Given the uneven development of the sector in different countries, the most promising way forward would be to adopt a negotiation structure similar to the Trade Facilitation Agreement (TFA), with tiered obligations corresponding to the individual level of development of different members. At the core, there should be a set of commonly accepted minimum standards or basic principles, probably along the lines of the highly successful example of the Telecom Reference Paper. To enhance the participation of developing countries, there should also be technical assistance provisions to help developing countries progressively undertake more and more obligations. A major part of the technical assistance activities would undoubtedly be devoted to building the technological capacities by equipping them with the necessary hardware and software, but there should also be regulatory assistance projects as many

developing countries lack the necessary regulatory experience with the sector.

In terms of the substantive content, such an agreement shall include the following elements: freedom of data flow for the provision of covered services, investments and intellectual property rights; prohibition of data localization requirements relating to the hardware, software or location of data storage, with narrowly defined exceptions for measures to protect data security or personal information; and commitment for each party to introduce or maintain its own domestic laws on privacy protection that meets certain minimum standards.

Like any negotiation in the WTO, getting WTO members to agree on data regulation would not be easy. To garner support among the membership, it would be useful to conduct a stock-taking exercise of existing issues regarding data flow and localization requirements, followed by discussion and identification of best practices, so that the members can better understand the potential of data trade. Most importantly, data regulation should be negotiated as part of a broader deal on digital trade, because trade, rather than the underlying data, is the *raison d'être* of this institution called the WTO.

## Endnotes

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<sup>1</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 04.05.2016; cor. OJ L 127, 23.5.2018, Recital 1.

<sup>2</sup> Telecommunication Act of 1996, 47 U.S.C. 230(b)(2), available at: <https://www.law.cornell.edu/uscode/text/47/230> (accessed 20 February 2020).

<sup>3</sup> Cybersecurity Law of the People's Republic of China [Zhonghua Renmin Gongheguo Wangluo Anquan Fa], as adopted at the 24th Session of the Standing Committee of the Twelfth National People's Congress of the People's Republic of China on November 7, 2016, Art. 1.

<sup>4</sup> WTO, Declaration on Global Electronic Commerce, adopted on 20 May 1998 at the Second WTO Ministerial Conference in Geneva, WT/MIN(98)/DEC/2, 25 May 1998.

<sup>5</sup> WTO, Work Programme on Electronic Commerce: Ministerial Decision of 13 December 2017, Ministerial Conference, Eleventh Session, Buenos Aires, 10–13 December 2017, WT/MIN(17)/65, WT/L/1032, 18 December 2017.

<sup>6</sup> WTO, Joint Statement on Electronic Commerce, WT/L/1056, 25 January 2019.

<sup>7</sup> For an analysis of the US approach, see Gao (2018c).

<sup>8</sup> Horizontal provisions on cross-border data flows and personal data protection, 18 May 2018, available at: [https://ec.europa.eu/newsroom/just/document.cfm?action=display&doc\\_id=52384](https://ec.europa.eu/newsroom/just/document.cfm?action=display&doc_id=52384).

<sup>9</sup> For an overview of the evolution of digital trade related provisions in China's FTAs, see Gao (2018b).

<sup>10</sup> Wikipedia, List of Largest Internet Companies, available at: [https://en.wikipedia.org/wiki/List\\_of\\_largest\\_Internet\\_companies](https://en.wikipedia.org/wiki/List_of_largest_Internet_companies) (accessed 20 February 2020).

<sup>11</sup> For an overview of Chinese data regulation, see Gao (2020, forthcoming).

<sup>12</sup> The submissions can be found on the WTO website starting with INF/ECOM document symbol.

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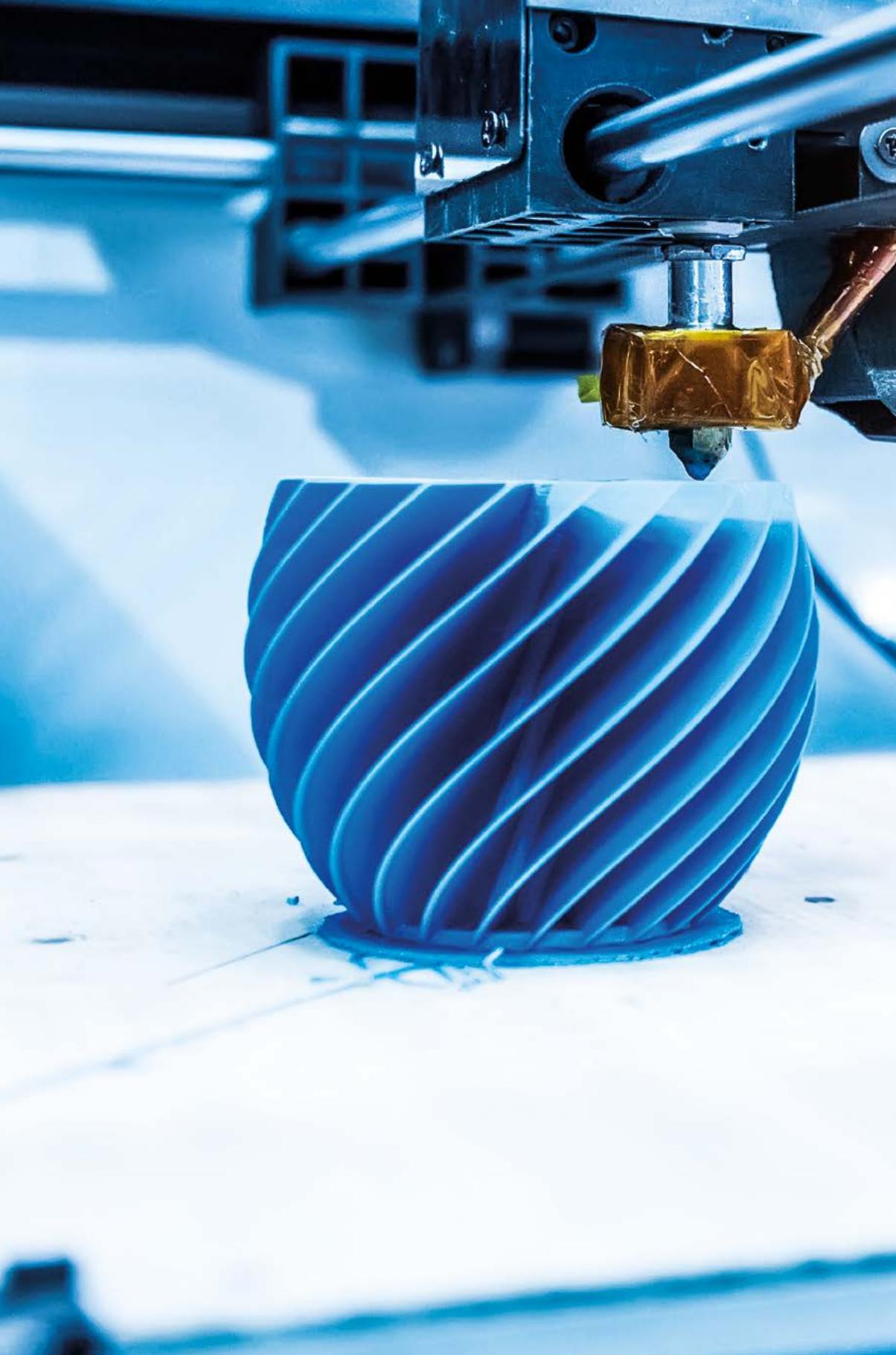
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**Chapter 16**

**Converging thoughts  
on digital trade in  
preparing for the future**

**Maarten Smeets\***

*\* The contents of this chapter are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*

## Introduction

There is a growing convergence on the view that the factor having had the most significant impact on trade in recent years is the introduction of new and innovative technologies. The speed and intensity of the IT evolution are affecting trade and more generally our day-to-day lives in unprecedented ways. It has rendered interactions possible between humans, between humans and machines and between machines in ways that could not be imagined even a few years ago. The digital era is a new reality, and it is driving economic growth and development. It poses both challenges and opportunities on all levels. It offers an opportunity for developing countries to better participate in international trade, e.g. through global value chains (GVCs), but there is no prescription how to do that.

In this book, the World Trade Organization (WTO) Chairholders addressed some of the key challenges and opportunities emanating from the rapid technological evolutions and the emergence of digital trade as an enabler for economic growth and development. The case studies and analysis presented offer different perspectives in answering the question how governments can create an enabling environment and in setting the right conditions at the national, regional and global levels in support of digitalization and with a view of countries' fuller integration in world trade. Views tend to converge on several specific requirements that need to be fulfilled in order to take full advantage of the opportunities offered in the new digital trade era. This includes focusing more strongly on specific services sectors,

strengthening the infrastructure that facilitates digital trade, and further reducing transaction costs, all of which are elements conducive to a better linking to GVCs. The analysis and examples presented by the Chairs in many ways add significant value to the research undertaken by leading institutions, including the WTO, in support of inclusive economic growth and enhancing the development perspectives of developing countries. Their findings not only contribute to a fuller understanding of the complex digital trade issues affecting competition, they facilitate a better appreciation of the challenges that remain in designing policies for the future. This final chapter discusses some of the main points of convergence on suggested approaches and directions for policymaking.

## The transformative effects of digital trade on the economy: key challenges

The digital economy is transforming our lives in unprecedented ways. How these changes exactly occur and the impact they have are mostly little understood. The Director-General of the WTO observed in 2018: "While technological advances are an essential enabler of international trade expansion, the capacity to manage the changes at play is equally important. Appreciating the depth and breadth of these changes is critical to help governments reap the benefits that these technologies create and address the challenges that may arise" (WTO, 2018, p. 2).

Klaus Schwab, referring to the historic changes driven by what he calls "the Fourth Industrial Revolution" in terms

of their size, speed and scope, observes that “while the profound uncertainty surrounding the development and adoption of emerging technologies means that we do not yet know how the transformations driven by this industrial revolution will unfold, their complexity and interconnectedness across sectors imply that all stakeholders of the global society – governments, business, academia, and civil society – have a responsibility to work together to better understand the emerging trends” (Schwab, 2016, p. 2).

There is a tremendous challenge to collectively appreciate and deepen our understanding of the technological developments witnessed today in the era of digitalization in order to draw the right policy conclusions addressing the implications of these rapid developments and evolution of the technology. This is ever more relevant today, with globalization under serious attack following the outbreak of COVID-19. The disruption of the supply of medical devices witnessed in many countries has put the health and well-being of citizens around the globe at risk. It also resulted in a questioning of the validity of GVCs, which may need some revisiting, for essential equipment.

Richard Baldwin analyses how information technologies are reshaping a new generation of globalization, generating a whole new set of policy

challenges for developed and developing countries alike. He refers to it as the great convergence, because of the ways all the elements are interconnected and have become inseparable (Baldwin, 2016). He explains why the fragmentation of production, the rise of GVCs and the rapid spread of knowledge and information make it ever more difficult for governments to ensure steady economic growth and social coherence. Production processes are not only increasingly fragmented, they can easily be relocated from one production centre to another location if better economic conditions can be offered, generating higher levels of efficiency. This has had significant implications for the ways trade and specialization are analysed and hence the

**“There is a tremendous challenge to collectively appreciate and deepen our understanding of the technological developments witnessed today in the era of digitalization.”**

validity of the classical theory. The factors driving competitive conditions have changed: a country’s comparative advantage is increasingly determined by technology, skills sets, services, access to capital, and intellectual property (IP) rights instead of labour, capital and natural resources, which are at the origin of the trade theories.

The Nobel Laureate Michael Spence considers that: “Trade is shifting from a stark version of comparative advantage based on differential labor costs and labor arbitrage, toward something that more closely resembles the intra-industry model of trade among developed economies based on product and technological

differentiation. Of course, that process is far from complete, and there remain early-stage, and relatively low-income developing countries for which the growth models will continue to depend on accessing global demand via labor-intensive, process-oriented manufacturing” (Spence, 2019).

Studies by leading international institutions (the WTO, the Organisation for Economic Co-operation and Development (OECD), and the World Bank) equally underscore the role digital technologies can play in the ability of developing countries to enhance their potential growth perspectives through value-addition. The Chairholders' views largely converge on the role digital trade plays in enhancing the economic development perspectives of countries and suggest various options and ways forward to cope with the challenges emanating from that process. The fundamental question remains which policies governments need to put in place to benefit from the very same rapid technological evolutions. The policy options will naturally differ by country or region, as there is no single answer to this question and no standard recipe can be provided. Yet, there are both theoretical and practical answers to these questions, as the examples provided by the Chairs confirm. Digital technologies can be drivers of inclusivity, particularly when more attention is paid to the role services trade in the economy as a facilitator of digital trade. Governments should also

focus on the improvement of infrastructure and lowering barriers to entry and enhancing access to foreign markets.

Services exports are becoming an ever bigger part of global trade and could make up more than a quarter of total trade by 2030. The share of services imports in manufacturing gross output is also expected to rise. The market is rapidly diversifying with an increasingly predominant place given to services, such as e-medical services, the expansion of cross-border

**“Services exports are becoming an ever bigger part of global trade and could make up more than a quarter of total trade by 2030.”**

e-commerce, the rapid growth of social e-commerce and the development of online-offline transactions. The growth of digital trade will open up new opportunities for the provision of online services, promote export diversification, boost efficiency and growth in manufacturing, improve competition in the financial sector,

increase access to market-relevant information and increase market access for micro, small and medium-sized enterprises (MSMEs). If developing countries want to benefit from this growth, they will need to increase their services shares in their gross domestic product (GDP).

The rapid growth of internet penetration and in the use of mobile telephony, the development of mobile money services, the increased use of credit cards and increased access to bank accounts have greatly boosted financial inclusion and encouraged reliance on electronic payment, thus

establishing a strong basis for e-commerce development on the continent. Closely related to this is the interaction between technological developments such as artificial intelligence (AI), robotics, the Internet of Things (IoT), blockchain technology and services. This is an area where rule making and developing laws and regulations governing information and communications technology (ICT) services, e-commerce transactions, data protection and access to information are particularly challenging. Some countries have passed laws in these areas providing a framework and established one-stop shops for the delivery of government services to citizens and for trade logistics. Legislative actions have been taken at the national and regional levels, which can eventually inform and guide the discussions taking place at the multilateral level, as will be discussed further below.

In the current services economy, it is becoming significantly easier to trade in services, thanks in large part to digitalization. The growing cross-border tradability of services is opening new opportunities for national economies and individuals. Equally important, digital trade will ease WTO members' efforts to better connect to GVCs. Hence the recommendation to devote more effort on developing the services economy. This holds specifically for small and medium-sized enterprises (SMEs), depending on their capacity to build the supporting infrastructure. According to Michael Spence:

[T]he mobile-internet- and platform-centered open ecosystems, along with mobile payment systems and enabled financial services, have the

potential to support inclusive growth patterns and expand the channels, opportunities, and accessible markets for SMEs. ... Exploiting the international potential of these platforms to expand trade and access for SMEs requires investment and infrastructure in developing countries, but also new trade regimes that increase the openness of the ecosystems. In other words, the potential to support growth and employment in SMEs via access to global markets on digital platforms is as yet largely unexploited. (2019, p. v)

He furthermore notes that "in developing countries, especially those in the middle-income category, while the pressures on the structure of jobs and employment are similar to developed economies, the net impact of digital technology appears to have been positive for growth and for employment" (Ibid.).

David Dollar offers a similar conclusion that "small and medium-sized enterprises in general have low direct participation in international trade, compared to large enterprises. ... Yet, SMEs are underrepresented in GVCs. This may be changing, however, as access to information and communication technology (ICT) continues to grow. For example, there is evidence that the internet reduces search costs, facilitating more exchange and increasing firm productivity. Cross-border e-commerce platforms are also providing new opportunities for SMEs and even micro firms" (Dollar, 2019, p. 5).

He then argues that SMEs face a number of additional challenges

integrating into GVCs with the digital economy. On top of lagging behind large firms in terms of overall digital technology use and capability, small businesses may also find it difficult to access e-commerce platforms and payment systems. These findings underscore the continuing need to improve the ICT environment and infrastructure as well as to expand services such as e-payment and e-commerce, all of which benefit SMEs disproportionately, but they also highlight the lack of information regarding SMEs.

### **Digital trade and GVCs: the role of technologies and building infrastructure**

The next question then is the role of digital trade in achieving a better linkage with GVCs. An often-cited specific requirement to achieve a better linkage to the GVCs and benefit from the new digital opportunities relates to improving the infrastructure facilitating digital trade, including the internet. Equally important factors in the digital era are the need to strengthen human and institutional capacities; build new skill sets; and provide training, R&D, services, access to IP rights, investment facilitation and access to capital as drivers of economic growth and development. Developing countries stay relatively behind in these areas compared to developed countries. The shares spent in an economy on R&D are mostly positively correlated to the levels of economic development in a country. The higher the income levels, the higher the spending rates on training and education. Developing countries are mostly lacking the economic resources necessary to focus on technology, and hence

capital-intensive production, and they continue to focus more on traditional patterns, producing goods rather than services. Also, few developing countries own IP rights, whereas increasingly the value of goods is determined by the combination of goods, services and IP.

A recent study by the WTO, focusing on the role of new technologies and digital trade as drivers of the transformation of global commerce, underscores the interplay between technology and trade (WTO, 2018). It provides a qualitative analysis of the changes that are underway and quantifies the extent to which global trade may be affected in the next 15 years. As the Director-General notes in his foreword, “domestically, governments may need to look at how to tackle many of these challenges, including in areas such as investment in digital infrastructure and human capital, trade policy measures and regulation. International cooperation can also help governments derive more benefits from digital trade and help drive inclusion. At present, WTO members are trying to get to grips with these issues” (Ibid., p. 4).

The Secretariat underscores the role that technological advances play in cutting international trade costs and estimates that, between 1996 and 2014, these costs declined by 15 per cent (Ibid., p. 3). Technological innovation played an important role here, and it has the potential to do even more. Prior to the trade tensions that rose between the leading trading nations and prior to the economic crisis following COVID-19, the prediction was made that trade could grow yearly by 1.8 to 2 percentage points more until 2030 as a result of

the falling trade costs, amounting to a cumulated growth of 31 to 34 percentage points over 15 years. The report finds that the decline in trade costs can be especially beneficial for MSMEs, and for firms from developing countries, if appropriate complementary policies are put in place and challenges related to technology diffusion and regulation are addressed. While the digital trade era offers many new opportunities, the challenges should also not be underestimated, particularly the risk of a digital divide between developed and developing countries. More recent forecasts and estimations by Bekkers, Koopman, Sabbadini and Teh are presented in the first chapter of this book, showing that between now and 2030 global trade growth would be 2 percentage points per annum higher and developing countries' trade growth 2.5 percentage points per annum higher, as a result of the adoption of digital technologies and further reducing transaction costs.<sup>1</sup> Bekkers, Koopman, Sabbadini and Teh also find that services exports will become a bigger part of global trade, making up more than a quarter of total trade by 2030, while the share of services imports in manufacturing gross output also would rise. All figures are likely to be adjusted in view of the impact of COVID-19 on the world economy.

The reduction of transport and transaction costs is generally found to be a key factor supporting economic growth. To achieve that, the Chairs suggest that governments focus more on domestic policies, structural adjustment and innovation. The recommendations include efforts to improve domestic infrastructure for transport, roads, railways, ports and handling procedures for import and

export (the introduction of a single window), thus reducing the administrative costs and time for trade transactions. These recommendations suggest that economic efficiency, trade and the related policies are increasingly dictated by domestic policies rather than border protection. The Chairs underscore the need for governments to create an enabling, competitive environment for trade and investment in support of building productive capacity.

These findings corroborate two earlier analyses undertaken by the Chairs and by the WTO as explained in its 2015 *World Trade Report*, which specifically focused on the challenges related to the implementation of the Trade Facilitation Agreement (Teh et al., 2016; WTO, 2015). The main objectives of and key provisions in the Trade Facilitation Agreement (TFA) are all geared towards reducing transaction costs. The TFA puts several mechanisms into place and contains specific provisions to assist beneficiaries in strengthening their infrastructure to ease trade costs. The TFA does not distinguish between forms of trade, i.e. between physical goods and digital trade. Based on a review of the literature, Teh et al. argued that for physical goods, trade costs could be reduced by some 14 per cent on average and even more for developing countries. It was also argued that the trade costs for least-developed countries (LDCs) could fall as much as 17 per cent. These findings were largely confirmed by other studies presented by the OECD, the World Bank and think tanks, with the differences mainly explained by the models used and the implementation scenarios of the TFA. There was a consensus on the fact that low and

lower-middle-income countries are likely to see the biggest reductions in trade costs. This also leads to the commonly held view that developing countries should exploit all the options offered through the TFA to strengthen their infrastructure with a view to simplifying transactions and reducing costs. More specifically, developing countries should consider how the TFA can best be used to reduce their infrastructure costs for digital trade, thus preparing better for the future. Many developing countries and LDCs have indicated their need for support in building and strengthening their infrastructure, and the efforts should be particularly geared towards facilitating digital trade.

### **Multilateral vs regional approaches to digital trade**

One area that has had the specific attention of policymakers in recent years is the relation between multilateral and regional trade liberalization. This relationship has also been analysed extensively by scholars and again had the specific attention of the Chairs as it relates to digital trade. While it was long held that the two approaches are largely incompatible, with regionalism being the exception to the multilateral trade rules, condoned under specific General Agreement on Tariffs and Trade 1994 (GATT 1994) provisions, the views have largely evolved towards a more tolerant approach. Regional trade integration can be a stepping stone for multilateral trade liberalization and in some ways be complementary (Acharya, 2016). In some areas not covered by WTO rules, regional approaches can be considered as “laboratories” and eventually provide a basis for multilateral trade rules. It holds true

for digital trade, with several Chairs and commentators specifically advocating the two as complementary approaches: in the absence of multilaterally agreed trade rules (WTO), the regional and/or bilateral approaches adopted to digital trade can ensure the free flow of digital data and information. Regional trade agreements (RTAs) increasingly include provisions referring explicitly to digital technologies and, interestingly enough, mostly in RTAs involving developing countries. The most common provisions refer to e-government, cooperation and the moratorium on customs duties on electronic transmissions.

It is found that the regulatory approaches adopted in regional integration initiatives can widely differ as explained by Gao (Chapter 15) and López, Condon and Muñoz (Chapter 10). This can be seen in Latin America with new rules on digital trade negotiated under the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and in the case of the United States-Mexico-Canada Free Trade Agreement (USMCA). It is also the case in trade relations between China, the European Union and the United States, reflecting different methodologies and regulatory systems. Interestingly, the agreements often follow different approaches in their regulations and coverage. The implication is that the lack of multilateral rules on the free flow of data has resulted in divergent approaches in RTAs. Hence, there is a tension not only between regional and multilateral approaches, but also within RTAs.

An in-depth review conducted by Wu, covering almost all of the RTAs that

were signed between 2001 and 2016 and notified to the WTO, led to identifying those RTAs with a standalone e-commerce chapter or with provisions specifically addressing e-commerce/digital trade (2017). He found 69 RTAs with a standalone e-commerce chapter or article(s), dating back to 2001, including a small number that had not yet entered into force. He also identified at least 21 other RTAs without a dedicated e-commerce chapter or article, but with one or more provisions specifically addressing paperless trading, digital rights management or general promotion. As he notes, due to the slow pace at which the multilateral trading system is updating trade rules for the digital era, much of the innovation is occurring in RTAs. In the absence of a wide-ranging WTO mandate for digital trade, RTAs have emerged as the primary laboratories for new rules and disciplines.

Divergences in approaches to the ways in which digital trade are addressed in RTAs are also noted in the WTO's *World Trade Report 2018*, which underscores that provisions related to digital technologies can be found in multiple chapters of RTAs (WTO, 2018, fn 10). These provisions cover a broad range of issues, including trade rules and market access commitments; telecommunications and the digital regulatory framework; intellectual property protection; management of e-government (i.e. the use of ICT to deliver services in the public administration), including paperless trading; and the cooperation and technical assistance on science and technology, ICT and e-commerce. The WTO notes that although certain provisions related to digital technology replicate or clarify a number of existing

provisions and/or commitments established under the WTO, other provisions expand commitments or specify new ones. These provisions often complement other relevant provisions found in RTAs, even though they do not make explicit reference to digital technologies. Most provisions related to digital technologies do not follow a specific, unique template, even in agreements negotiated by the same country. As a result, provisions related to digital technology remain particularly heterogeneous in terms of structure, language and scope.

According to the WTO (2018), the most common types of provisions related to digital technologies found in RTAs refer to e-government management, as well as cooperation on e-commerce issues and the moratorium on customs duties on electronic transmissions. An increasing number of RTAs also cover the general domestic legal framework of e-commerce and more specific issues, such as electronic authentication, consumer protection and intellectual property. Other issues addressed in a limited number of relatively more recent RTAs include the cross-border electronic transfer of information, data localization and cybersecurity. Given the dynamic nature of RTAs and the current trends, provisions related to digital technologies are likely to keep evolving with new and more comprehensive types of provisions.

All of these elements provide useful inputs into the policy discussions held at the WTO on e-commerce and show the complexity of establishing rules and regulations that could eventually govern digital trade. As Wu concludes based on his in-depth review of the key elements contained in RTAs on digital

trade, “While a sizeable number of WTO members have agreed to some provisions related to digital trade in one or more of their RTAs, significant challenges exist in terms of extending these provisions into any form of a future WTO multilateral agreement” (2017, p. 29).

## Conclusion

There is a clear convergence in thinking on the elements that need to be given priority attention in order to benefit from digital trade and prepare the future. Many of those elements are closely interlinked and re-enforce each other, including services, infrastructure, innovation, R&D, skill sets, connections to GVCs and IP to name a few.

It is also clear that given the absence of multilateral trade rules covering digital trade, WTO members tend to focus on their domestic and regional policies to cover the key elements related to digital trade. Even if all the “right” policies are put in place, there is no guarantee that the expected benefits

will materialize, as many other factors will influence the outcome and trade has become more dynamic than ever before. This also explains why WTO members are reflecting on the reforms to be conducted in order to update the rules of the WTO multilateral trading system. However, the pandemics caused by COVID-19, the dramatic decline in trade, the significant slowdown of the world economy, and the many trade restrictions applied by WTO members are adding new

pressures to develop rules that address trade issues in the digital trade era.

There also is a convergence on the view that while digital trade offers opportunities, there is a risk as it can also exacerbate inequality and limit inclusiveness. Developed-country policymakers tend to stress the importance of the free transmission of data across borders, while some developing-country policymakers have advocated for a digital industrialization strategy to limit competition from the large technology firms to encourage the growth of local digital capabilities. Developing countries that lack the tools to compete in the new digital environment are in danger of being left

even further behind. The challenge is to achieve inclusive growth to the benefit of all, with no member being left out and not deepening the economic divide. What to regulate, how to regulate and at what level? Multilaterally, regionally or bilaterally?

These are some of the questions before the policymakers and that

are at the heart of the WTO’s discussions with members with a view of deepening and strengthening the rules of the WTO multilateral trading system and making it rise to the challenges of 21st century trade. The Chairholders address these topical issues from their national, regional and/or subregional perspectives. What is clearly evidenced from the analysis and case studies presented in this book is that governments have a significant role to play domestically regardless

**“While digital trade offers opportunities, there is a risk as it can also exacerbate inequality and limit inclusiveness.”**

of what will or can be agreed multilaterally. International trade is increasingly determined by the competitive and enabling environment created by countries at the national level, i.e. domestically. Of critical importance is the need to put the right infrastructure in place, facilitate IT and reduce transaction costs, thus allowing a better connection to markets, and linking to the GVC. This requires adequate domestic regulatory systems as well as harmonization and coordination of such policies at the international level.

## Endnote

<sup>1</sup> The authors of Chapter 1 also made the calculations for the WTO *World Trade Report*.

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***Adapting to the digital trade era: challenges and opportunities*** looks at how the rapid adoption of digital technologies could help developing countries increase their participation in world trade. It also reviews the role that domestic policies and international co-operation can play in creating a more prosperous and inclusive future for these countries. This publication marks the conclusion of the second phase of the WTO Chairs Programme (WCP). It brings together contributions from the WCP Chairholders of Phases I and II, Advisory Board members, the WCP team at the WTO and other WTO Secretariat staff. The WCP is an important part of the WTO's efforts to build trade capacity and to work jointly with academic institutions in developing countries.

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