
E-Commerce as a Tool to Achieve Universal Sustainable Goals

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Abstract: E-commerce introduces a market full of opportunities by engaging more individuals in trade, creating space for new traded products by businesses (such as electronic transitions, electronic services, and 3D printing algorithms.), and allowing global communications and connections for trade through interactive platforms. It is inevitable to ignore COVID-19 in this sense, as the pandemic only emphasized the presence of e-commerce and boosted it to the extreme, forcing the world to shift to e-commerce consumption of goods and e-services to avoid further pandemic spread. As e-commerce becomes a dominant source of economic growth, employment, social empowerment, and political involvement, worldwide, one would expect that it would be governed under a multilateral agreement that establishes e-commerce as a form of trade, from an inclusive perspective. However, the lack of a comprehensive governing law in the multilateral level leaves Regional Trade Agreements the responsibility to regulate e-commerce and to ensure equal global reach to e-commerce opportunities. By examining dominant RTAs in force in a five-year period (2015-2020) that include a specific e-commerce chapter, and using the United Nations Sustainable Development Goals, this piece examines the best practices for allowing e-commerce to be globally and equally available for all, recognizing 4 sets of provisions that is found today in Regional Trade Agreements: Capacity building provisions; Facilitation provisions; Protection provisions; and E-cooperation provisions. Including such sets of provisions in Regional Trade Agreements, in the manners offered by this piece, will have a great probability of promoting global quality of education; gender equality; decent work and economic growth; the enhancement of industry; innovation and infrastructure; and justice and strong institutions; as called for by the UN SDGs.

Keywords: E-Commerce, COVID-19, Digital Trade, UN Sustainable Development Goals, Regional Trade Agreements

1. Introduction

Across the world e-commerce is on the rise, with everyone becoming importers or exportersⁱ [1]. On-line platforms expand the physical and on-line market generating multitude international transactions every day to buy, sell and transfer electronic transmissions (ET)ⁱⁱ [2], services and e-services, essential and vulnerable data, and customizable goods through 3D printingⁱⁱⁱ [3].

The global spread of e-commerce challenges existing infrastructure (can one be sure that payment methods used for on-line transactions are protected by existing authentication systems?), blurs jurisdictional boundaries (is it considered a course of trade to use Google's search engine in a country where Google doesn't have an office or a facility that keeps data?), and questions standard classifications of traded

substances (what is downloaded music to iTunes? Is it as good as a CD? Is it considered a service since it is offered by Apple and solely played on one's iPhone? Is it classified as a good or a service and if neither, then how is it regulated?).

COVID-19's implications are revolutionary, mainly due to the influence that they have on the way people socially and economically interact world-wide, moving all traded goods^{iv} and services to on-line channels^v [4]. This shift increases existing use of e-commerce and creates new reasons and methods for its use, thus, demanding new universal ideas to compete with e-commerce's expanding challenges. For example, the shift to digitalization significantly increased data flow, as well as created a new type of data flow such as digitalized vaccine passports) [5] and required more strict data protection regulation to earn consumer trust [6]. These unprecedented changes make e-commerce even more crucial

than before as they widen the economic, social, and political gaps for the vulnerable stakeholders to be involved in trade.

Vulnerable stakeholders are not a specific group of individuals with a particular common characteristic, but in fact they are the world's majority of individuals described by a wide array of professions, incomes, social status, cultures, and political views. They share a vulnerability to the law; they have limited knowledge of how the law relates to them, they hold narrow resources to impact the law making, and they don't have resources to properly protect themselves from the law [7]. Vulnerable stakeholders face varying difficulties in benefitting from e-commerce, yet they comprise together groups of e-commerce users and potential e-commerce competitors: prowess entrepreneurs who try to rise and compete as small and medium-sized enterprises (SMEs) in the increasing scale of e-commerce, face difficulty in their lack of resources as compared to Big Tech competitors, such as easy access to legal support or, in developing countries, appropriate infrastructure; unequal treated minorities, such as women who could use e-commerce and benefit from providing e-services as a way to adapt works to their primary household commitments and avoid discriminating labor markets, face difficulties as they lack technological skills [8]. Other groups of e-commerce users include working class, farmers, people living in rural areas, and all vulnerable individuals around the world who engage on on-line platforms including seeking professional or personal information, expressing oneself or conversing on an on-line community, or simply consuming e-commerce without the knowledge or sense of security as to what might be done with the personal information left on-line.

To truly benefit from the new ideas for trade brought by e-commerce, e-commerce matters must be properly addressed through appropriate regulation and policy, from an inclusive point of view and with the mission to promote sustainable development ideas and achieve their contribution in practice.

Two WTO agreements successfully leverage e-commerce: The 2014 WTO Trade Facilitation Agreement (TFA) [9] and the 1996 Information Technology Agreement (ITA) including its expansion (ITA-2) [10]. The TFA promotes e-trade by recognizing electronic transactions as part of the overall attempt to ease and reduce costs in the trading process, with the biggest gains in developing countries. ITA requires members to completely eliminate import duties and other charges on key goods and inputs for IT products specified in the Agreement (and expanded in ITA-2), increasing ITA exports in developing countries (this however was found to also harm in some countries the ability to achieve a domestic IT product market) [11]. Although these agreements contribute to trade digitization and the inclusion of developing countries as exporters in the global market, they do not provide answers to fundamental technological developments of trade such as ET classification, on-line user and consumer protection, 3D printing, etc.

Efforts by WTO Member States to address e-commerce trade developments in a more specific manner were first seen

in 1998 as part of the Work Programme on Electronic Commerce [12], where members agreed on imposing a temporary moratorium on customs duties for ET. Since then, members continue to reaffirm the moratorium with the most recent ratification in June 2022 [13]. While the moratorium contributes to the enhancement of e-commerce^{vi} [14], it has problematic consequences for developing countries. Developing countries are net importers of digitizable products as opposed to most developing countries; in 2017, 55 per cent of the global imports of identified digitizable products were ET escaping custom duties as opposed to 45 per cent physical imports [2]. With the shift to ET and where trade in the physical form of digitizable products is only expected to continue declining, a moratorium on ET leads to the loss of substantial tariff revenues causing greater harm to developing countries^{vii} [15] ^{viii} [16].

Another attempt to address e-commerce trade developments took place in January 2019. WTO Member States began negotiations to fulfill the declaration from the 11th ministerial conference in 2017 to "initiate exploratory work together toward future WTO negotiations on trade-related aspects of electronic commerce." [17] This dialog aims to eventually establish an e-commerce global framework and member obligations that enable e-commerce trade in a non-discriminatory and less trade restrictive manner [18]. When in the meanwhile the aspects of reducing trade costs, improving productivity, and increasing ability to participate in export markets have been partially addressed, by the end of 2022, there shall be progress also in key issues such as data flows and data localization [14]. A future agreement on trade-related aspects of electronic commerce will hopefully lead to more certainty for business operations and the expansion of international trade [19]. However, such agreement would very likely have damaging effects on vulnerable stakeholders and, within them, the developing world, as it could easily favor Big Tech at the expense of developing countries' entrepreneurs and workers. Moreover, an agreement will probably not allow developing countries flexibility for policy progression and will constrain their efforts to protect their domestic industry [20]. In the recent 12th Ministerial Meeting, the co-convenors of the Joint Statement Initiative on E-Commerce, announced the launch of the E-Commerce Capacity Building Framework which aims to provide opportunities of the digital economy for developing and least developed countries^{ix} [14].

WTO Member States' efforts to regulate e-commerce under a comprehensive e-commerce agreement have not yet been achieved. Although countries have been putting together domestic laws and policies in relation to e-commerce, Regional Trade Agreements (RTAs) hold the responsibility to address the multilateral lack of regulation in crucial e-commerce subject matters and to contain countries' obligations on areas such as electronic authentication and signatures, on-line consumer protection, personal information protection, liability of intermediary platforms, cybersecurity, and more.

Recent RTAs began dedicating full chapters to govern

e-commerce matters (usually named ‘Electronic Commerce’ or sometimes ‘Digital Trade’ [hereinafter e-commerce chapter] [5]. Such chapters play a main role in regulating e-commerce, setting new rules and norms in conjunction with domestic and multilateral developments. Nonetheless, vulnerable stakeholders still are not granted with sufficient predictability and protection when engaging in e-commerce while the digital reality constantly progresses.

2. The Methodology of This Piece

2.1. Overview

This piece identifies and classifies different provisions that are commonly included in RTAs’ e-commerce chapters, and pinpoints provisions that have the greatest impact on opportunities for economic, social and political success of the vulnerable stakeholders. These provisions should be included in future negotiated e-commerce chapters to make e-commerce inclusive.

The provisions that this piece explores are taken from dominant RTAs in force in a five-year period (2015-2020) that include a specific e-commerce chapter^x [21]. These are: South Korea – US ‘KORUS’ signed on September 2018 and came in force January 2019 with chapter 15 dedicated to Electronic Commerce [22]; China – Australia ‘ChAFTA’ signed on June 2015 and came in force December 2015 with chapter 12 dedicated to Electronic Commerce [23]; Australia – Hong Kong ‘A-HKFTA’ signed on March 2019 and came in force January 2020 with chapter 11 dedicated to Electronic Commerce [24]; EU – Singapore ‘EUSFTA’ signed on October 2018 and came in force November 2019 with chapter 8 Section F dedicated to Electronic Commerce [25]; EU – Japan ‘EUJEPa’ signed on July 2018 and came in force February 2019 with chapter 8 Section F dedicated to Electronic Commerce [26]; the Comprehensive and Progressive Agreement for Trans-Pacific Partnership ‘CPTPP’ signed on March 2018 and came in force December 2018 with chapter 14 dedicated to Electronic Commerce [27]; United States Mexico Canada Agreement ‘USMCA’ signed on December 2019 and came in force July 2020 with chapter 19 dedicated to Electronic Commerce [28]; the Digital Economy Partnership Agreement (DEPA), signed on June 2020 and came in force on January 2021 [29]. In order to get a holistic picture, the last RTA that this piece looks at is the African Continental Free Trade Area ‘AfCFTA’ [30]; however, AfCFTA does not yet include a specific e-commerce chapter, although a Digital Trade protocol is under discussion. Further research should be done on AfCFTA once a protocol on e-commerce is integrated through the agreement’s ongoing negotiation phase [31].

To establish a collection of substantial provisions to include in future RTAs, the piece uses the United Nations Sustainable Development Goals (SDGs): In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development as a plan of action for people, planet, and prosperity. The 17 SDGs under this agenda are intended to

stimulate action in areas of critical importance for humanity and the planet balancing the three dimensions of sustainable development: economic, social and environmental [32].

The SDGs are strongly connected to e-commerce [5]. This piece classifies e-commerce provisions into five categories that promote inclusive engagement in e-commerce^{xi}, where the classification is based on the distinct contribution of each category, analyzed by the SDGs. The level of contribution is measured through the SDG’s specific corresponding targets and indicators. Where the research of the indicator is found to not be in line with the indicator, we conclude that the affiliated SDG, must be expressed in a provisions that are attributed to it.

The four sets are: *Capacity building provisions*, building capacity for users in the form of necessary internet access and infrastructure that underline the engagement in e-commerce (“e-capacity provisions”). E-capacity provisions provide infrastructure for e-commerce use to allow populations of developing countries and rural areas equal access to e-commerce opportunities. These areas enhance the availability of education to obtain technological skills for integration in the digital economy, women’s self-empowerment and career development, reduced unemployment and capacity-building of financial institutions and technologies, and national as well as regional community resilience; *Facilitation provisions*, facilitating the engagement in e-commerce by approaching interested users with information regarding the use of e-commerce and simplifying the administrative aspects of trade (“e-facilitation provisions”). E-facilitation provisions build familiarity with e-commerce and make its administrative process feasible and available for all. These contribute to the growth of SMEs, partnerships, research and development, innovation, and accountable institutions that respect the individual; *Protection provisions*, protecting the engagement in e-commerce by building consumer and user trust and providing a safe environment that yields a sense of security to engage in the e-commerce process, which often requires supplying vulnerable information (“e-protection provisions”). E-protection provisions builds consumer and user trust in the on-line environment, inviting the vulnerable stakeholders to engage in e-commerce. This leverages women’s participation in the online environment, digital economy through new job opportunities and entrepreneurship, reduced inequalities in the market, and institutional strength; *Cooperation provisions*, requiring countries’ cooperation on the recognition and success of e-commerce (“e-cooperation provisions”). The E-cooperation provisions bring consumer and user trust in e-commerce and eventually allow vulnerable stakeholders to practice e-commerce. this creates a global, holistic, and predictable mechanism to achieve the different advantages and strengths of e-commerce.

2.2. E-capacity

The e-capacity set of provisions includes access to internet provisions and provisions that regularize infrastructure matters. E-capacity provisions recognize the need to access

and use digital products and related support services to enable the use of technology. Although coverage of internet access has significantly expanded, only 54 per cent of the global population actually uses the internet. Of least developed countries (LDC) populations, only 19 per cent use the internet, compared to 87 per cent of populations in developed countries. One key reason why 46 per cent of the global population is offline is the high costs associated with the internet use^{xii} [33]. Provisions respecting the infrastructure gaps within and between countries and supporting affordable access to

information communication as well as regional and transborder infrastructure, expose vulnerable stakeholders in developing countries and in rural areas of developed countries to the existence of e-commerce and enables them to engage and benefit from its opportunities.

E-capacity provisions strengthen national, regional, and cross-border links in the rapidly changing landscape for the enhancement of quality of education, gender equality, decent work and economic growth, and sustainable cities and communities.

<p>SDG #4 - Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all.</p> <p>Target 4.4 Substantially will increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship; Indicator 4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill.</p> <p>Target 4.5 Eliminating gender disparities in education and ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations; Indicator 4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated.</p>	<p>Education is taking a positive direction world-wide^{xiii} [34], yet global technological knowledge is still behind: populations of developing countries are familiar with only very simple technology skills (e.g., copy/paste functions)^{xiv} [35] ^{xv} [36]. The lack of Information Communication Technology (ICT)^{xvi} [37] skills is another key reason for the high percentage of offline populations [33]. ICT skills are essential in an attempts to enter and develop in the growing high-tech industry. These skills gain greater importance under COVID-19 implications in which ICT skills are a basic requirement to obtain education in any field. ICT skills intersect with trade where general education has any cross-border involvement (such as education abroad or foreign lectures as well as the mere use of cross-border emailing, search engines, on-line dictionaries or other shared international platforms used for learning.) Appropriate infrastructure that enables easy and cheap access to internet allows vulnerable stakeholders to obtain ICT skills through the use of enabling technologies and e-services and, therefore, the ability to maintain successful education in any field^{xvii} [34].</p>
<p>SDG #5 - Achieve gender equality and empower all women and girls.</p> <p>Target 5.1 End all forms of discrimination against all women and girls everywhere; Indicator 5.1.1 Whether or not legal frameworks are in place to promote, enforce, and monitor equality and non-discrimination on the basis of sex.</p> <p>Target 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life; Indicator 5.5.2 Proportion of women in managerial positions.</p>	<p>Legal frameworks that discriminate gender in hiring and constitute unequal pay, are still found in many developing and developed countries ^{xviii} [38] ^{xix} [39], resulting in more participation of men than women in labor markets around the world^{xx}. Although this gap has narrowed in recent decades^{xxi} [40], percentages of women in leadership positions are still low^{xxii} [41]. These facts exemplify the importance of internet access and infrastructure to allow women the opportunity to avoid discriminating labor markets. Internet access would allow women to engage in e-services as independent suppliers, use e-services as consumers to obtain relevant skills for career development and promotion options, access enabling technologies to gain ICT skills to compete in the industry (which is characterized by a gender digital divide)^{xxiii} [42], and take part in on-line communities for self-empowerment and network expansion.</p>
<p>SDG #8 - Promote inclusive and sustainable economic growth, employment, and decent work for all.</p> <p>Target 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small-, and medium-sized enterprises, including through access to financial services; Indicator 8.3.1 Proportion of informal employment in non-agriculture employment, by sex.</p>	<p>The global unemployment rate in 2019 stood at around 5 percent^{xxiv} [43], and was higher among younger workers, persons with disabilities, and women. COVID-19 era is expected to have a disastrous impact on the world's employment [44]. Unemployment in general, and the unemployment disparities in particular, are important to address. This can be done by the expansion of the digitizable goods' market – both physically and ET – and the on-line service market, bringing to vulnerable stakeholders more job</p>

<p>Target 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value; Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities; Indicator 8.5.2 Unemployment rate by sex, age, and persons with disabilities.</p> <p>Target 8.6 By 2020, substantially reduce the proportion of youth not in employment, education, or training; Indicator 8.6.1 Proportion of youth (aged 15-24 years) not in education, employment, or training.</p> <p>Target 8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all; Indicator 8.10.1 (a) Number of commercial bank branches per 100,000 adults; (b) number of automated teller machines (ATMs) per 100,000 adults; Indicator 8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider.</p>	<p>opportunities and space for entrepreneurship. The capacity of financial institutions to support the global economic growth that e-commerce creates is found to be insufficient in terms of the number of bank branches and ATMs per person^{xxv} [45]^{xxvi} [46]. Additionally, many countries have less than 50 percent of adults with financial bank accounts^{xxvii} [47]. These emphasize the need for infrastructure to meet economic growth by ensuring adequate financial services, or otherwise, by implementing and encouraging the use of technology that enables non-bank transfers.</p>
<p>SDG #11 - Make cities inclusive, safe, resilient, and sustainable.</p> <p>Target 11.A Support positive economic, social, and environmental links between urban, peri-urban, and rural areas by strengthening national and regional development planning; Indicator 11.A.1 Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city.</p>	<p>As of May 2020, 154 countries have designed national urban plans. In light of COVID-19, national and city governments are currently revising those plans to help prevent the next pandemic [48]. Provisions that call for appropriate national and regional infrastructure to allow sufficient technological existence for the use of e-trade are a core part of this attempt as they enable the exchange of crucial products for one's own safety, the stability and persistence of the economy, and the survival of social interactions. By supporting health, economic, and social links between the regions' urban and rural areas, e-capacity provisions leverage the resilience of communities as a whole.</p>

Figure 1. E-capacity provisions contribute to sustainable development.

While few RTAs include provisions that address the need for internet access^{xxviii}, they only recognize the importance and benefits of such access and connections but are not obligated to any efforts to achieve them in their territories.

None of the RTAs address the general need of infrastructure. Not only that RTAs do not recognize the CPTPP in Article 14.17.2 and the H-AKFTA in Article 11.12.2 act as an obstacle to create internet access as they exempt software used for infrastructure from the prohibition to require source code disclosure as a condition for importation. However, the DEPA takes a small step forward, recognizing the importance of infrastructure when referring to e-invoicing and payments (Articles 2.5.4 (a) and 2.7.1, correspondingly).

2.3. E-facilitation

The e-facilitation set of provisions is built from paperless government provisions and provisions that regulate electronic authentication and electronic signatures. Paperless government provisions establish transparency and accessibility in relation to trade policy, regulation, and administration, ensuring that non-sensitive public data held by

governments is electronically available for the public. Electronic authentication and signature provisions implement the technology neutrally approach [49], an approach that eases trade communications by acting to not discriminate electronic means for trade. These provisions grant electronic signatures the same legal validity and enforceability as classic hand-written signatures are entitled. As the world becomes more and more digitally oriented, old-fashioned means of communication are less efficient. Therefore, preventing on-line access to trade-related information or discriminating against digital forms of trade acts as a barrier to trade. Provisions that make e-commerce feasible for vulnerable stakeholders: on-line administrative guidance for engagement, electronical submission of administrative requirements to engage in e-commerce (sometimes making submissions even easier through a pro-user, single window method) [40], and full acceptance of electronic signatures, make it worth engaging in e-commerce.

E-facilitation provisions contribute to providing decent work and economic growth, industry and innovation, and strengthening institutions.

<p>SDG #8 - Promote inclusive and sustainable economic growth, employment, and decent work for all.</p> <p>Target 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and encourage the formalization and growth of micro-, small-, and medium-sized enterprises, including through access to financial services; Indicator 8.3.1 Proportion of informal employment in non-agriculture employment, by sex.</p>	<p>Economic growth is assessed by the percentage of the informal economy when informal economy reflects the ability of existing policies to support the formalization and growth of SMEs (less supportive policies result in greater informal market). According to the Organisation for Economic Co-operation and Development (“OECD”), informal economies are widespread in low-and high-income countries with no particular recognized pattern. However, informal economies in low- and middle-income countries consist mostly of women^{xxix} [50]^{xxx} [44]. Paperless government provisions can provide non-elite with new and easy-to-engage-in business opportunities, addressing the socio-economic and gender disparities and encouraging economic productivity, giving rise to SMEs.</p>
<p>SDG #9 - Build resilient infrastructure, promote sustainable industrialization, and foster innovation.</p> <p>Target 9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry’s share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries; Indicator 9.2.1 Manufacturing value added as a proportion of GDP per capita; Indicator 9.2.2 - Manufacturing employment as a proportion of total employment.</p>	<p>The improvement and development of the manufacturing of existing products, to achieve competitive advantages in the local and global market, is enhanced by the implementation of Research and development (“R&D”) programs [51]. Although R&D is globally growing at a fast pace^{xxxi}, disparities between developed and developing countries are extreme^{xxxii} [33]. Electronic signature provisions enable electronically signed contracts and agreements^{xxxiii}, which effectively ease the path for partnerships and collaboration on R&D and therefore promote cross border innovation.</p>
<p>SDG #16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.</p> <p>Target 16.6 Develop effective, accountable and transparent institutions at all levels; Indicator 16.6.2 Proportion of population satisfied with their last experience of public services.</p>	<p>Laws regulating the freedom of information had been adopted by 127 countries as of spring 2020, but only a few provide guidelines and training on the right to information^{xxxiv} [52]. In light of the COVID-19 chaos, with governments and institutions losing credibility around the world, e-coordination provisions that promote open government data contribute to creating accountable institutions that respect the freedom to access information to support new ideas and entrepreneurship.</p>

Figure 2. E-facilitation provisions’ contribute to sustainable development.

Electronic authentication and electronic signatures provisions have been adopted, in some form, by all of the RTAs referred to in this piece, excluding AfCFTA^{xxxv}. Most of these provisions leave space to unilaterally determine the form of validating electronic signatures and authentication, while encouraging the parties to determine a mutual recognition and method of electronic signatures and authentications^{xxxvi}. In difference, the DEPA uses a stricter language to harden the parties’ ability to deviate from an agreed method of authentications: the DEPA specifies international standards that regulate the design of framework for recognition of electronic signatures and authentications. This obligation however is obviously non-binding and depends on its incorporations into the domestic law. Except for the KPRUS, all RTAs include a general obligation on parties to avoid the hinder of electronic authentication and electronic signatures. The ChAFTA requires to not only respect electronic authentication and electronic signatures, but to encourage it in the public sector [53].

Paperless government provisions, however, are still rare to find and from the nine RTAs that this piece refers to, only the ChAFTA addresses paperless government in Article 12.9. the

ChAFTA’s comprehensive article refers to the adoption of international guidelines and instructs each of the parties to adopt paperless administration while encouraging the parties to expand the paperless methods on as many trade administration documents as possible.

2.4. E-protection

The e-protection set of provisions encompasses consumer protection provisions, data flows provisions, data localization provisions^{xxxvii}, cybersecurity provisions, non-disclosure of source code provisions, unsolicited commercial provisions^{xxxviii}, and electronic authentication and signatures provisions. Consumer protection provisions build consumer trust in the intangible on-line transaction. Data flows provisions address the protection of users’ vulnerable information given on-line. Data localization provisions, however, suppress the transfer of data requiring that a computing facility be in the territory where a business uses data. Cybersecurity provisions create a safer environment for engagement in e-commerce, requiring parties to build national agencies to respond to cyber threats, mitigate their

effects, and manage cyber-attack recoveries. Non-disclosure of source codes provisions protects source code owners by allowing them to maintain competitive advantage when engaging in e-trade. Unsolicited commercial provisions regulate the transfer of spam messages, requiring senders to permit recipients to give consent in order to supply them with the messages as well as have the option to avoid them when they wish so. Electronic authentication and signatures provisions set a secured system for the use of on-line signatures, which ensures that a signature is used solely by its holder. Distinct from in-person transactions where parties physically transfer money for something in return, e-commerce creates many risks. E-protection provisions bring e-commerce opportunities closer to vulnerable stakeholders, as they reduce the uncertainty that is associated with e-commerce: e-commerce users are entitled to remedies if a transaction fails; personal information given on-line, whether financial or socially-related is still under the user's control; there are fewer chances for crime to interfere with a

transaction process and, where crime does take place, it is to be solved by qualified designated agencies; new ideas based on source code are respected and the engagement in e-commerce does not impede their economic success; on-line engagement is not to be followed by unsolicited messaging to attract and manipulate users if they do not wish so; lastly, even though a signature is provided through an on-line platform, strict protections make it difficult to impersonate ownership. E-protection provisions may contradict the interest of companies: for example, personal data is essential for businesses to facilitate transactions, analyze marketing information, detect patterns, and develop competitive innovation. However, as the majority of the data is held by Big Tech, restrictions on its use serve the interest of protecting fair market practices [54].

E-protection provisions all together advance gender equality, decent work and economic growth, and justice and strong institutions.

<p>SDG #5 - Achieve gender equality and empower all women and girls.</p> <p>Target 5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation;</p> <p>Indicator 5.2.2 Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence.</p>	<p>Women are the main victims of on-line sexual harassment [55]. As COVID-19 has shifted the majority of interaction to the on-line sphere, the opportunities for sexual harassments are even greater. Cybersecurity provisions minimize on-line violence and provide women with a sense of security, creating a safer on-line environment with equal advantage to e-trade's economic and social opportunities.</p>
<p>SDG #8 - Promote inclusive and sustainable economic growth, employment, and decent work for all.</p> <p>Target 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors; Indicator 8.2.1 Annual growth rate of real GDP per employed person.</p>	<p>Most countries show general gross domestic product ("GDP")^{xxxix} [56] growth per employed person, though higher and lower percentages vary across the world with LDCs progressing insufficiently^{xl} [44]. COVID-19 is expected to drop the world economy into a severe crisis with an extreme GDP decline. As the economy shifts to digital spheres even more intensively post COVID-19, e-protection provisions that underline e-commerce have extensive influence on the future of the digital economy by inviting broad e-commerce engagement to create new job opportunities and entrepreneurship. Vulnerable stakeholders around the world can finally gain trust in secure on-line transactions, leading to broader and more diverse e-commerce engagement and to the rise of SMEs, reducing GDP inequalities and boosting global economic productivity.</p>
<p>SDG #16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.</p> <p>Target 16.A Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, particularly in developing countries, to prevent violence and combat terrorism and crime; Indicator 16.A.1 Existence of independent national human rights institutions in compliance with Paris Principles.</p>	<p>Only half of the national institutions around the world comply with the Paris Principles [57]. Cybersecurity provisions offer another way to strengthen national institutions by requiring adequate capacity to prevent crime and promoting international cooperation. As not only women but also men are subject to on-line harassment^{xli} [55], strong institutions are required in order to provide the sense of security to non-elite as a whole through a safe e-commerce environment for greater engagement.</p>

Figure 3. E-protection provisions' contribute to sustainable development.

Consumer protection laws are incorporated into most of the

RTAs referred to in this piece. While a number of RTAs apply

general consumer protection laws on e-commerce engagement, the DEPA in Article 6.3, specifically defines e-commerce users as consumers to be protected. Moreover, in difference from other RTAs, the DEPA encourages the parties to provide consumer redress (in shall be noted that also the CPTPP and the A-HKFTA mention the effort to provide consumer redress, but only as general statement as part of an Article that refers to the cooperation of the parties)^{xliii}.

Data flows provisions encourage parties that when designing their designated legal data protection framework, they take into account international standards^{xliii}, the UCMSA guides the parties to a specific appropriate international body^{xliiv}. The DEPA not only encourages the use of international principles and guidelines but requires it, also in difference from the rest, the DEPA elaborates key issues that the framework should include^{xliv}. All data flows provisions, except for CHFTA, require non-discriminatory data protection and ensure it by requiring publication on the how a business can comply with the data protection requirements, and the way an individual can pursue remedies. While the DEPA offers practical use of trustmarks in businesses to broadly ensure data protection in the market, the USMCA recognizes the importance of ensuring compliance with the protection of data and adds measures of necessity and proportion to the protection of data^{xlvi}. All most all data flow provisions, elaborate on the importance of the exchange of information and participation^{xlvii}.

From the nine RTAs, only the CPTPP, USMCA and DEPA include a data localization provision. While the USMCA uses the strictest language, under which data localization is prohibited^{xlviii}, the CPTPP and the DEPA prohibit data localization with strict exceptions only for the objective of a legitimate public policy objective^{xlix}.

Cybersecurity provisions are still rare, however, when they exist, they tend to use the national entities resources and multi stakeholder cooperation to combat the on-line threats^l. Additionally, the USMCA adopts a risk-based approach to prevent the attacks before it is carried out^{li}.

The language of source code provisions tend to be obligatory, however, usually leaves space for negotiating disclosure terms in commercial contracts^{lii} or government procurement processes^{liii}. The USMCA uses a stricter approach not leaving space for requiring the source code of a software, except for reasons related to national security, regulatory and judicial orders^{liv}. As mentioned above, while the APTPP and A-HKFTA attempt to facilitate e-commerce by banning source code disclosure, they at the same time put obstacles to e-commerce by exempting software used for infrastructure from the prohibition^{lv}.

Most RTAs require the minimization of unsolicited commercial electronic messaging by requiring the suppliers of such messaging to enable the prevention of receiving messages and require the consent of receiving messages^{lvi}. From those, only the EUJEA secures the comply with the requirements by correspondingly stating that commercial electronic messages shall be clearly identifiable^{lvii}. The CPTPP, USMCA and DEPA use also a general obligation to

minimize the act of unsolicited electron messaging^{lviii}. Unsolicited commercial electronic messaging provisions require that each party provide recourse against suppliers, while only the USMCA requires that this recourse will be incorporated in the parties' domestic law^{lix}.

2.5. E-cooperation

The e-cooperation set of provisions includes transparency, cooperation, compatibility, interoperability, non-discrimination, and provisions that require the formation of domestic legal frameworks, usually relying on international standards^{lx}. E-cooperation provisions bring value into the attempt to promote inclusive e-commerce by making it a united and universal attempt. They introduce the need of transparency and predictability, collaborations in different forms, and an internal policy subject to international standards. Trade is like Tango in the sense that you need (at least) two for it to work – one well-designed and enforced regime could not be achieved in trade if the regime on the other side of the transaction is not properly designed in accordance with it. Thus, this final set of provisions does not add new ideas to the promotion of e-commerce, but with its collaborative characteristics, it increases the contribution to e-commerce that is brought by the rest of the sets. For vulnerable stakeholders to engage in e-commerce, they need to have the knowledge and the assurance that they and the transaction are recognized and protected not only by their own country's laws and policies but also by the country that the party to the transaction is subject to. These provisions together uphold this fundamental requirement for e-commerce engagement.

E-cooperation provisions vary in their means, word choice, and location in the chapter. Provisions that promote transparency usually refer to data flow and consumer protection issues^{lxi}, the DEPA however, incorporated a full general transparency chapter that applies to all e-commerce provisions. The requirement for transparency may refer to making the drafting of the measures by regulatory bodies available in order to allow interested parties to comment on the proposed measures in accordance with their domestic law – requirement of this kind is found in Article 13.2 of the DEPA. In other cases, the requirement may refer to the publicity of the measures in force, such as Article 8.53 of the EUJEA.

Provisions that address parties' cooperation may be found as independent general provisions, independent subject-specific provisions, or as subject-specific sub-provisions. For example, the CPTPP sets a general cooperation provision in Article 14.15 'Cooperation', a subject-specific cooperation provision in Article 14.16 'Cooperation on Cybersecurity Matters', and a subject-specific cooperation sub-provision in Article 14.8.5 in relation to personal information protection. Another way to obtain cooperation can be found in a regulatory cooperation provision that requires parties to maintain dialogue on regulatory related issues that e-commerce raises, this kind of provision can be found in Article 8.61 of the EUSFTA. The USMCA invites the parties to establish a forum to manage cooperation matters^{lxii}. Cooperation methods are proposed to

be practiced in various ways; when referring to controversial issues, provisions tend to encourage parties to 'exchange of information' such as the CPTPP does in its data flows provision^{lxiii}, whereas in other situations, provisions will be more straight forward encouraging the use of 'interoperable' mechanisms or 'mutual recognition' such as the A-HKFTA and the CHAFTA require in their Electronic Signatures and Electronic Authentication provisions, correspondingly^{lxiv}. Cooperation do not always refer only to the cooperation between parties to the agreement but recognize also the need for cooperative work between the public and private sectors. The DEPA sets this issue forth well in Article 8.1.

Compatibility is referred to in two ways: First, compatibility with parties' laws and regulations, this limits cooperation to a manner compatible with the parties' domestic frameworks, as composed by the A-HKFTA in Article 11.13.3. Second, compatibility and interoperability between parties' practices, this allows a synchronized and successful system, as brought by the DEPA in Article 2.2.8. In relation to controversial issues, where compatibility between the parties may interfere with domestic laws and regulations, the DEPA elaborates core issues that parties should attempt to agree upon^{lxv}.

Interoperable is another step from compatibility as it requires full ability to adopt other party's mechanisms, therefore, RTAs are very refined with interoperability obligations. Interoperability provisions will be usually found in relation to matters that are more broadly accepted such as electronic signatures and electronic authentications^{lxvi}. The DEPA requires that measures related to electronic signatures and electronic authentications will be based on internationally accepted standards in order to be convenient for all parties^{lxvii}.

Non-discrimination provisions are found in provisions that regulate data flow and data localization^{lxviii}. The DEPA is the only RTA which includes a full provision addressing the need for digital inclusion^{lxix}. Article 11.1 of the DEPA explicitly calls for the inclusion of women, rural populations, low socio-economic groups, and Indigenous Peoples in the e-commerce community. The Article elaborates on methods to achieve such inclusion, seeking to address the barriers in accessing the e-commerce opportunities and to develop programs to overcome them.

In some areas, RTAs refer parties to structure their legal frameworks in accordance with a specific international regulation, this is done for example in Article 19.4 of the USMCA, while in other areas RTAs will only obligate parties to rely on international regulation, merely suggesting relevant codes guidelines, this is done in Article 19.8 of the USMCA. The CHAFTA however, combines the two in Article 12.5, requiring that parties follow a specific international regulation, but consider other relevant international standards.

3. Conclusion

This piece offered commentary that e-commerce chapters in RTAs have not only the strength but the responsibility to

promote the vulnerable stakeholders who constitute the worlds majority. To achieve this, RTAs must be negotiated from an inclusive point of view, taking into account not only corporate interests, but also the needs of developing countries and their populations, entrepreneurs, discriminated minorities, rural populations, workers of all kinds, and individual users of on-line platforms. The use of e-commerce chapters to achieve vulnerable stakeholders' economic, social, and political empowerment and success gains greater importance in the current COVID-19 pandemic reality where employment, education and basic in-person interactions become digital all around the world, making vulnerable stakeholders' reach to e-commerce crucial for their survival.

For vulnerable stakeholders to engage in e-commerce, an RTA must include provisions to build capacity in relation to adequate infrastructure and internet reach, facilitate e-commerce by simplifying trade procedures, protect users by building trust in the on-line environment, create a cooperative cross-border framework, and carefully regulate cross-cutting issues balancing between the contrary interests to ease e-commerce trading procedures.

Negotiating provisions that address the aforementioned, will likely achieve global quality of education, gender equality, decent work and economic growth, the enhancement of industry, innovation and infrastructure, and justice and strong institutions, as called for by the UN SDGs.

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ⁱ In 2017, an estimated 1.3 billion people – that is one quarter of the world's population aged 15 years and older – shopped online. This represented a 12 per cent increase over 2016.

ⁱⁱ As explained, electronic transmissions are the on-line trade form of digitizable goods (products that can be traded both in a physical form as well as on-line).

ⁱⁱⁱ E-commerce introduces the use of on-line platforms such as search engines (e.g., Google) and social media (e.g., Facebook), which constitute a new form of trade, independent from the classic trade in goods and services. These technology companies bring new complexities to the understanding of trade, as most of them use commercially based business models under which they offer free services to users and receive data in exchange. As this interaction does not result in a monetary transaction, it does not meet existing international standards of trade (subsequently, the collected data forms the basis of the business revenues from advertising, which is indeed a transaction covered by trade regulation.) This piece refers to the use of technology companies' on-line platforms as an integral part of e-commerce.

^{iv} Can be referred to as digitizable goods as they are consumed electronically. Digitizable goods include two kinds of goods: physical goods (e.g., a book ordered through Amazon and delivered at consumers home) and electronic transmissions which are goods in their on-line form (e.g., an e-book downloaded to Kindle device).

^v One example is media services; Facebook reports that its online messaging, and voice and video call services, are up by more than 50 per cent.

^{vi} "Recently, 105 trade associations from around the world, including developing countries in Asia, Africa, Europe, Latin America, North America and the Caribbean, have emphasized that the extension of the Moratorium is absolutely necessary to avoid significant trade and investment disruptions".

vii “Digitalization has led to a decline in trade of digitizable goods in their physical form (e.g., CDs, books, and newspapers) from 2.7 per cent of total goods trade in 2000 to 0.8 per cent in 2016. The trend is likely to continue with the advent of 3D printing technology”.

viii If current growth of investments in 3D printing continues, 50 per cent of the manufactured goods are predicted to be ‘printed’ by 2060 estimated to wipe out almost one quarter of world trade by 2060. In a situation where investments in 3D printing doubles, this target will be achieved earlier in 2040 and is estimated to wipe out two fifths of world trade by 2040.

ix “The Framework will bring together a wide range of technical assistance and capacity building efforts to support countries participating in the E-Commerce JSI and harnessing the opportunity of digital trade through providing training and assistance to help developing and least developed countries.”

x A WTO study from 2017 identified the countries that are most active in negotiating RTAs with e-commerce provisions (the study named these ‘active digital trading countries’), these are: Australia, Canada, China, the European Free Trade Association (EFTA) states, the EU, Japan, Latin American countries (Colombia and Mexico), the Republic of Korea, New Zealand, Singapore, and the United States. This piece looks at RTAs signed by at least one active digital trading country. The Digital Economy Partnership Agreement (DEPA), although not yet in force, is the newest RTA signed to date and profoundly digitally-oriented, and two of its parties – New Zealand and Singapore – are among the active digital trading countries, making it more than reasonable to be included in this work.

xi While the dominant and substantial aim of all e-commerce chapters is to promote the development and use of e-trade (This can be deduced from the language and form that the chapters are written with however, some FTAs explicitly state this objective. See ChAFTA, Article 12.1.2; EUSFTA, Article 8.57.2; and EUJEP, Article 8.70.2.), e-commerce provisions tend to be heterogeneous in structure depending on the interest of the negotiating parties. For example, while the EU treats personal data protection as a fundamental right and does not prohibit data localization (Both EUJEP and EUSFTA do not include a data localization provision. In regard to CPTPP that does prohibit data localization as a condition for doing business in a party’s territory, although the EU is a signatory, the provisions are very much influenced by U.S. views as the agreement is based on the original CPP negotiations that eventually did not conclude in finalizing the agreement due to U.S. abandonment of the efforts.), the U.S. anti-localization approach leads to a different use of the personal data protection provisions (USMCA, Article 19.12 states “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”). Disregarding the distinction between different approaches, most e-commerce provisions can be classified under the five sets, all serving as tools to achieve the main objective: promoting inclusive engagement in e-commerce.

xii In 2019, almost all world population (97 per cent) lived within reach of a mobile cellular signal, and 93 per cent lived within reach of a mobile-broadband signal. Also, LDC have seen significant growth in coverage of mobile-broadband signals, from 51 per cent in 2015 to 79 per cent in 2019.

xiii The proportion of children and youth out of schools had declined from 26 per cent in 2000, 19 per cent in 2010, 17 per cent in 2018.

xiv Overall, in every single relevant skill Western European countries are found to have higher percentage of people with the given skill than Asian/African countries listed.

xv The largest percentage of countries use the easiest skills such as sending an e-mail with an attachment or using copy/paste function.

xvi “Information and communications technology (ICT) refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. ICT has more recently been used to describe the convergence of several technologies and the use of common transmission lines carrying very diverse data and communication types and formats.”

xvii 190 countries that implemented school closures and 90 per cent of all students that were out of school in 2020 depend on remote learning.

xviii Although developed countries adopt more non-discrimination measures in hiring more than developing countries, still countries such as Canada, Germany, Italy, and areas such as Southeastern Asia do not have non-discrimination measures in hiring.

xix Moreover, among the many countries that do not have mandate equal pay

measures for work of equal value, it is in fact developing countries in South America, Africa and Western Europe that do mandate equal pay.

xx Female labor force participation is highest in some of the poorest as well as the richest countries and lowest in countries with average national incomes. This relationship between female participation rates and GDP per capita follows a U-shape, still however resulting in a higher average for the participation of men as women represent 39 per cent of world’s workers.

xxi The gender gap narrowed from 32 percentage points in 1980 to 26 percentage points in 2008. In 2017, most countries world-wide had a ratio of over 60 per cent female to male labor force participation rates.

xxii Majority of countries with data are at 30 per cent or below firms with top female manager (this analysis lacks key regions such as Western Europe, North America and Australia.) Women are 41 per cent of managerial positions in Southeastern Asia and 40 per cent in North America, but only 8 per cent in North Africa. Women are often excluded from decision-making positions when they do get a job.

xxiii In most countries men possess more ICT skills than women.

xxiv Highest unemployment rates (7.5-10 per cent +) are found in Africa and East Europe, lowest rates (0-0.25 per cent) in Africa and Asia.

xxv Great disparities are found between countries: North America, Russia, Europe and Australia with 20-40 branches per 100,000 adults and 0-10 in South/Central Asia, most countries in Africa, and some parts of Eastern Europe, Middle East and South America.

xxvi Most countries in Africa, Central/Southern Asia are with below 30 ATMs per 1000,000, whereas Australia, Russia, Canada, and some Europe with 30-60.

xxvii US, Canada, Western Europe, Iran, Mongolia, Japan, South Korea, Australia, New Zealand with 90-100 per cent of adults with account at a financial institution, while many countries in Africa, some countries in Central America and Middle East and Cambodia with 20 per cent or less.

xxviii KORUS, Article 15.7; CPTPP, Article 14.10; and USMCA, Article 19.10.

xxix The OECD Library and the International Labour Organization define ‘informal economy’ as “referring to all economic activities by workers and economic units that are – in law or in practice – that are not covered or insufficiently covered by formal arrangements.”

xxx Typically, informality has a negative impact on earnings, working time, occupational safety and health, and working conditions generally, and therefore is expected to decrease in percentage.

xxxi Global GDP invested in R&D increased from 1.62 per cent in 2010 to 1.72 per cent in 2017, reaching \$2.2 trillion purchasing power parity in 2017 (this is up from \$1.4 trillion in 2010 and 741 billion in 2000.).

xxxii Ranging from 2.25 per cent in Europe and Northern America to 0.38 per cent in sub-Saharan Africa, For LDCs and landlocked developing countries, the proportion was around 0.20 per cent.

xxxiii In fact, the DEPA, Article 16.9 states on itself that it recognizes that its parties use electronic signatures to finalize the agreement.

xxxiv Of 73 public authorities surveyed, only 58 per cent provided guidelines to the public and specialized training on the right to information for their information officers.

xxxv ChAFTA, Article 12.6; CPTPP, Article 14.6; EUJEP, Article 8.77; KORUS, Article 15.4; EUSFTA, Article 8.60; A-HKTFA, Article 11.3; USMCA, Article 19.6; and DEPA, Articles 2.3 and 16.9.

xxxvi ChAFTA, Article 12.6; CPTPP, Article 14.6; USMCA, Article 19.6; EUSFTA, Article 8.60; A-HKTFA, Article 11.3.

xxxvii CPTPP, Article 14.13; USMCA, Article 19.12; and DEPA, Article 4.4.

xxxviii CPTPP, Article 14.14; EUJEP, Article 8.79; A-HKTFA, Article 11.11; USMCA, Article 19.13; and DEPA, Article 6.2.

xxxix GDP is a broad measure of overall domestic production, functioning as a comprehensive scorecard of a given country’s economic health.

xl The global growth rate in labor productivity (GDP per employed person) was at 1.6 per cent in 2018 and 1.4 per cent in 2019. Highest countries with GDP are China, Southeastern Asia and parts of Europe; Highest countries with manufacturing employment are Angola, Algeria, Czech Republic, Slovakia, Belarus and some parts of the Middle East.

xli Men (30 per cent) are modestly more likely than women (23 per cent) to have been called offensive names online or to have received physical threats.

xlii ChAFTA, Article 12.7; CPTPP, Article 14.7; EUJEP, Article 8.78; KORUS, Article 15.5; A-HKTFA, Article 11.5; USMCA, Article 19.7; and DEPA, Article 6.3.

^{xliii} ChAFTA, Article 12.8; CPTPP, Article 14.8; and A-HKFTA, Article 11.9.

^{xliv} USMCA, Article 19.8.

^{xliv} DEPA, Article 4.2.

^{xlvi} *Supra* note xlix,

^{xlvii} except for CHFTA, Article 12.8.

^{xlviii} USMCA, Article 19.12.

^{xlix} CPTPP, Article 14.13 and DEPA, Article 4.4. In accordance to the EU's approach, data protection should be upraised, therefore, the EUJEPa and EUSFTA do not even include a data localization provision – in regard to the CPTPP, which does prohibit data localization as a condition for doing business in a party's territory, although the EU is a signatory, the provisions are very much influenced by U.S. views as the agreement is based on the original CPP negotiations that eventually did not conclude in finalizing the agreement.

ⁱ USMCA, Article 19.15 and DEPA, Articles 5.1 and 5.2.

^{li} USMCA, Article 19.15.2.

^{lii} CPTPP, Article 14.17; EUJEPa, Article 8.73; and A-HKFTA, Article 11.12.

^{liii} EUJEPa, Article 8.73.

^{liv} USMCA, Article 19.16.

^{lv} CPTPP, Article 14.17; A-HKFTA, Article 11.12.

^{lvi} *Supra* note, xl.

^{lvii} EUJEPa, Article 8.79.

^{lviii} CPTPP, Article 14.14; USMCA, Article 19.13; and DEPA, Article 6.2.

^{lix} CPTPP, Article 14.14; EUJEPa, Article 8.79; A-HKFTA, Article 11.11; and DEPA, Article 6.2, in difference from USMCA, Article 19.13.

^{lx} ChAFTA, Article 12.5; CPTPP, Articles 14.5, 14.8.2, and 14.8.5; A-HKFTA, Article 11.4; USMCA, Articles 19.5.1 and 19.8.2; and DEPA, Article 2.3.

^{lxi} ChAFTA, Article 12.4; CPTPP, Article 14.7; EUJEPa, Article 8.53; KORUS, Article 15.5; A-HKFTA, Article 11.5; and USMCA, Articles 19.7 and 19.8.

^{lxii} USMCA, Article 19.14.

^{lxiii} CPTPP, Article 14.8.

^{lxiv} A-HKFTA, Article 11.3 and CHAFTA, Article 12.6.

^{lxv} See for example DEPA, articles 4.2.6 and 4.2.7.

^{lxvi} CPTPP, Article 14.6.4; EUSFTA, 8.60.2 (b); A-HKFTA, Article 11.3.4; USMCA, Article 19.6.4; and DEPA, Articles 2.5.1-3, 2.7.1, 2.7.2 (b)-(c). Only the USMCA, Article 19.14.1 (b) and the DEPA, Articles 4.2.6 and 4.2.7, are fearless enough to try – in a delicate manner – and bring interoperability into issues of privacy and data flow.

^{lxvii} DEPA, Articles 2.5 and 2.7.

^{lxviii} CPTPP, Articles 14.8, 14.11, and 14.13; A-HKFTA, Article 11.8; USMCA, Articles 19.8 and 19.11; DEPA, Articles 4.2 and 4.3.

^{lxix} DEPA, Article 11.1.