

**DIGITAL ECONOMY ISSUES
IN THE WTO'S TRADE POLICY REVIEWS**

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Executive Summary

This report on “*Digital Economy Issues in the WTO's Trade Policy Reviews*” provides a comprehensive analysis of e-commerce issues in different countries, provisions in multilateral co-operations, policy barriers, and implications of digital trade on trade statistics. In this report, we explore how future Trade Policy Reviews (TPRs) might offer more systematic coverage of these issues in line with the current regional trade agreements (RTAs), which offer a range of model policy measures that provide useful information for assessing country policies in TPRs.

The report begins by analyzing how e-commerce has changed the nature of trade due to advent of digital technologies like artificial intelligence (AI) and blockchain technologies which have increased the scope of businesses, reduced barriers to trade and has also expanded the global supply chains. This digital revolution, however, has also created new challenges for governments who are now required to form complementary policies and regulatory frameworks for the benefit of all stakeholders. As a result, the report identifies the following elements of digital strategy around which the governments form new digital policies which should be evaluated by WTO in the country TPRs.

Elements of Digital Strategy:

1. Human capital development
2. Information and Communications Technologies (ICT) infrastructure
3. Intellectual Property issues
4. Digital professional services, specifically telemedicine, telesurgery, and online education services
5. Trade in new digital technologies (Blockchain technologies, 3-D printing, Internet of Things, and Cloud Computing)
6. Online platforms

Later, the report discusses the following emerging digital policy measures by exploring existing RTAs related to e-commerce to suggest the list of policy issues that TPRs should include in its e-commerce chapter:

1. Market access
2. Cross-border transfer of information
3. Data privacy and cybersecurity
4. Online consumer protection
5. Electronic contracts and authentication
6. Paperless trading administration
7. Competition policy
8. Intellectual property related policy

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9. MSMEs related policy

While governments in general favor digital trade, they often impose barriers for several reasons. The report specifies some countries which have imposed restrictions on cross-border data flows, online services and enacted laws for data localization and digital services taxes. These barriers when imposed by digitally advanced and giant trading economies, hurt other developing and least-developed countries which are dependent on developed economies for bilateral and multilateral trade. Thus, as countries negotiate policies for digital trade and other e-commerce related issues, this report recommends that TPRs should significantly increase the coverage of the e-commerce environment and related policy issues, especially those which affect cross-border transactions. In addition, TPRs should incorporate a separate section for e-commerce to provide extensive, coherent coverage of digital trade issues, especially for digitally advanced countries to evaluate policies related to online platforms and digital technologies, which cannot be discussed in existing sections. Lastly, even though cross-country long-term studies are beyond the scope of TPRs, examining the differences in regulations of digital trade and the effects of policy gaps between leading economies and LDCs, will allow other research teams within WTO to conduct longer-term studies which would help resolve digital trade issues through negotiations.

1. The Digital Economy and the Trade Policy Review Mechanism (TPRM)

The Trade Policy Review Mechanism (TPRM) is one of the key channels used by the WTO to review national trade policies to promote accountability, predictability, and transparency of its multilateral trading system. The WTO conducts frequent reviews of its members' trade policies to keep all stakeholders informed about national policies.

As stated in Annex 3 of the Marrakesh Agreement, the purpose of the TPRM is to "contribute to improved adherence by all Members to rules, disciplines, and commitments made under the Multilateral Trade Agreements and, where applicable, the Plurilateral Trade Agreements, and hence to the smoother functioning of the multilateral trading system, by achieving greater transparency in, and understanding of, the trade policies and practices of Members".

While the TPRM focuses on countries' trade policies and practices over a period of time (based on the frequency of the reviews), they also evaluate the members' broad economic and development needs, their policies, and goals, as well as the external economic environment. The four largest traders, the EU, the US, China, and Japan, are reviewed every three years, the next sixteen largest are reviewed every five years and the other members' policies are reviewed every seven years. These reviews encourage governments to abide by WTO rules and fulfill their obligations. Overall, they enable external stakeholders to understand a country's policies during their respective time periods while also allow WTO members to provide feedback to the reviewed country based on its trade performance.

Wide-ranging advances in information and communications technologies are transforming economies and transactions among them. E-commerce or digital trade includes digitally delivered services as well as digitally enabled but physically delivered goods and services (such as a purchase of a good on an online marketplace or the booking of a hotel through an online platform). Estimates suggest that 12% of goods are already traded via international e-commerce with the majority driven by platforms such as Amazon, eBay, and Alibaba. The scale of transactions and the emergence of innovative players have transformed production processes and industries. Digital technologies enable more trade and investment and facilitate technology transfer, leading to more growth and economic opportunities. Hence, given the importance of digital trade, TPRs should evaluate countries' policies with respect to digital trade, like the way traditional trade policies are assessed.

This report discusses ways to incorporate digital trade elements in the existing TPRs. Table 1 summarizes the list of policy measures included in this report that the authors believe could be usefully covered in future TPRs while referring to the elements of digital strategy, also listed in the table. These topics would be best addressed in a single, new TPR chapter in digitally advanced countries, but could be also covered in various parts of the TPR template. The separate chapter on digital trade would be essential to cover countries' policies regarding digital professional services, trade in new digital technologies, and online platforms which cannot be combined with existing chapters in TPRs. Of course, details will vary across members depending on their engagement in digital trade.

Table 1. Digital trade tools and policies to be potentially covered in TPRs

Digital Trade Tools and Policies to be Potentially Covered in TPRs
<ul style="list-style-type: none"> ● Common elements of digital strategy <ul style="list-style-type: none"> ▪ Human capital development <ul style="list-style-type: none"> ○ Governmental educational programmes ▪ Information and communications technologies infrastructure <ul style="list-style-type: none"> ○ Investments in telecommunication and digital connectivity ○ Encouraging market access ○ Other complementary measures ▪ Intellectual property issues <ul style="list-style-type: none"> ○ Copyrights and industrial designs ○ Other right protections for digital technologies ▪ Digital professional services ▪ Trade in new digital technologies ▪ Online platforms <ul style="list-style-type: none"> ○ Supporting measures towards online platforms ○ Existing Restrictions for online services ● Specific policy measures for digital trade <ul style="list-style-type: none"> ▪ Market Access <ul style="list-style-type: none"> ○ Removing unnecessary restrictions ▪ Cross-border transfer of information <ul style="list-style-type: none"> ○ Restrictions on cross-border information transfers ○ Data localization ▪ Data privacy and cybersecurity <ul style="list-style-type: none"> ○ Personal information protection measures ▪ Online consumer protection <ul style="list-style-type: none"> ○ Fraudulent and deceptive online activities ○ Unsolicited commercial electronic messages ▪ Electronic contracts and authentication ▪ Paperless trading administration ▪ Competition policy ▪ MSME's related policy <ul style="list-style-type: none"> ○ Domestic regulatory framework supporting industry-led development ○ Encouraging self-regulation ○ Increasing involvement of MSMEs in the e-commerce

Source: Author

In compiling the list of issues in Table 1 and examining in more detail in this report we have attempted to provide a comprehensive overview of the digital trade environment. The result is a long list, and one would expect that it would be only selectively covered in most TPRs. Thus, Table 1 is best understood as a checklist of potential topics to be discussed and narrowed by country officials and WTO team members in advance of a TPR. In the eventual TPR, the first set of topics in Table 1, related to digital strategy, could be included in introductory sections that review a member's environment for trade. The second set of topics in Table 1, related to specific policy measures on digital trade, could specify policy areas to be covered regarding a member's regulation of digital trade. Of course, consultations with country and field experts and experience with future TPRs could sharpen and narrow this framework to a more practical form.

Section 2 of this report provides an overview of how the digital revolution is changing the nature of trade, while Section 3 elaborates upon the necessary elements for forming digital strategies and highlights measures taken by specific countries. Section 4 examines emerging e-commerce policy measures for digital trade with reference to negotiations among WTO members and regional trade agreements (RTAs). Section 5 analyses examples of policy barriers in various countries. Section 6 examines implications of digital trade for global trade statistics. Section 7 concludes with recommendations for TPRs.

2. How the digital revolution is changing the nature of trade

E-commerce has changed the way people live, work, interact, and participate in the economy. Digital technologies drive innovation, generate efficiencies, and improve many goods and services. These technologies affect international trade by reducing trade costs; facilitating the co-ordination of global value chains (GVCs); optimizing inventory and transportation by artificial intelligence (AI) applications; diffusing ideas and technologies across borders; decreasing cross-border obstacles by Blockchain technologies and connecting greater numbers of businesses and consumers globally which pushes out the trading frontier. New technologies and an open Internet ecosystem are creating new opportunities for trade, enabling new value chains with new players and new business models, as well as spurring innovation.

Innovative business models that use digital technologies like digital matching services, logistical support, and secure online payment systems are providing solutions that allow firms to sell their products online and in new markets. For instance, online platforms have lowered barriers to entry for firms to trade by allowing smaller firms to pay for and use the platform's logistics and customer service infrastructure to sell in global markets. Other digital intensive firms combine their online services with local or offline activities to profitably sell new types of products globally which also affect outsourcing and offshoring dynamics.

Cross-border online shopping as part of the total online shopping increased from 15% in 2015 to 21% in 2017, primarily due to a significant increase in US shoppers purchasing from foreign suppliers. In addition, mobile money has made it easier, safer, and cheaper to transfer money and pay for goods and services, leading to financial inclusion in low income countries, particularly in sub-Saharan Africa. The share of the population aged 15 years and older in sub-Saharan Africa having a mobile money account increased to 21% in 2017, the highest in the world.

Digital transformation has not only changed how we trade but also what we trade: a larger number of smaller and low-value packages of physical goods, as well as digital services, are now crossing borders; goods are increasingly bundled with services; and new and previously non-tradable services are now being traded across borders. The rise of services in international cross-border trade is closely linked to rapid technological developments. Services that traditionally required proximity to customers can now reach global markets at lower costs.

While digital innovations offer opportunities for corporate efficiency and customer participation in the markets, they also raise challenges for governments related to complementary policies and regulatory frameworks. The availability and connectivity supported by digital infrastructure, for example, fixed broadband and internet penetration, are not at the same level across or within countries, nor among urban and rural populations (WTO,

2018²). Additionally, there is room for regulation improvement in warranty and liability issues, intellectual property rights, data privacy, and the legitimacy of electronic signatures and contracts. The advancement of business models and the importance of human capital investment also increase uncertainties in the current economic environment. The developing and developed economies will face challenges including the shift to digitalized entities from physical existence, the reallocation of tasks between labor and capital, the establishment of facilitation and logistics, and the decline in trade costs (WTO, 2018²).

3. Common Elements of a Digital Strategy

With the rapid growth of e-commerce, governments play an important role in seizing the benefits of digitalization by developing access to digital infrastructure, lowering trade costs, facilitating human capital development, improving MSMEs' involvement, and addressing concerns about consumer protection, data privacy, and cybersecurity issues. While trade protectionism also emerges from the actions related to protect local businesses, it restricts the access of foreign participants. Many governments have digital strategies to drive these activities.

National digital strategies are of great interest to TPRs since they describe priorities for building and regulating a national digital economy. In some cases, these strategies may include actions to protect local businesses and restrict access to foreign participants in violation of WTO agreements for non-discrimination or national treatment. Other strategies may address new issues in governing digital trade that could become subject to new international agreements.

Human Capital Development

A central requirement of the digital economy is skilled manpower for developing new digital platforms and industries and for enabling workers and users to meet their technical requirements. To facilitate these investments, many governments cooperate with educational and other organizations to build learning programs related to digital skills and related cognitive skills. The availability of accessible communications technology is a key concern of governments to facilitate the connection between disadvantaged groups with new technologies. These activities typically require significant investments in traditional education and in government programs to oversee new educational programs and organizations.

Information and Communications Technology (ICT) Infrastructure

Information and Communications Technology (hereafter "ICT") is the foundation of digital transformation. It includes broadband services and digital business infrastructures such as investment incentives, digital standards, clusters, and incubators. A typical TPR could offer some basic information on the status of these services, since they are an important measure of a country's readiness to participate in the digital economy.

Complementary areas include electricity supply, trade logistics, delivery, tracking and payment systems. These services were once provided by traditional copper wire technology, but now focus on wireless fiber optic and satellite technologies. ICT technologies, individually and in combination, have allowed the internet to reach half the world's population. Cross border trade in services largely depends on digital infrastructure as the channel for

² World Trade Organization (WTO) (2018), World Trade Report: The Future of World Trade: How Digital Technologies are Transforming Global Commerce, WTO, Geneva, https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf

the transmission of information over the internet. Information and communications technologies are also the vehicles through which other innovative services, which utilize AI, cloud computing, and the Internet of Things (IoT), can be delivered to businesses and ordinary consumers.

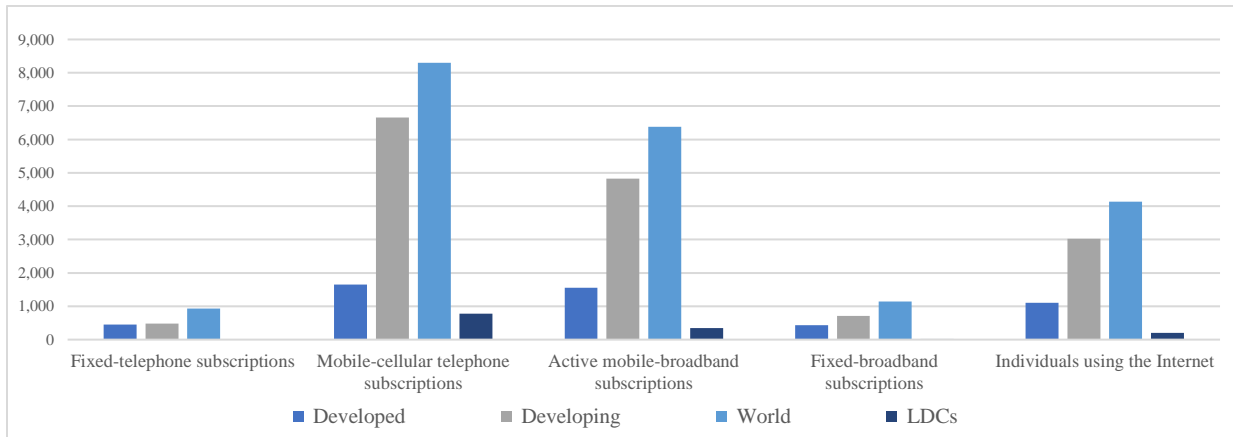


Figure 1. 2019 ICT indicators for developed and developing countries and the world (totals, in millions, estimated)

Source: ITU data, <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

Demands on networks are growing as more people, things, and activities go online. By 2022, there will be three connected devices per person around the globe. Digital progress in developing and developed countries is based on the deployment of the internet infrastructure, but basic broadband coverage still constitutes a significant digital divide. Although connectivity has improved greatly over the past 5-10 years, major gaps remain: numbers of mobile cellular subscriptions are high in both developed and developing economies, mobile broadband subscriptions are at around 50% in developing countries but only 24% in least-developed countries (LDCs). Only 42% of individuals in developing countries and 18% in LDCs use the internet, in comparison to more than 80% in developed countries.³ Therefore, developing economies which are not yet involved in services trade in a significant way can utilize investments in ICT infrastructure to enter this increasingly important world market.

Investments in telecommunications infrastructure can not only provide a short-term boost for the economy but can also lay the groundwork for long-term growth and employment prospects. A reliable, comprehensive, and affordable high-speed broadband network is central to competitiveness in the digital era. In 2018, fourth-generation (4G) services became the leading mobile technology, with 3.4 billion subscribers. As growth continues across developing markets, 4G is expected to reach 60% of total mobile services in use by 2023. Meanwhile, fifth-generation (5G) high-bandwidth mobile technology as a means of better-quality connection of developing countries to the global economy is expected to enhance these countries' participation in e-commerce, trade in services, and value-chains.

Trade in information and communication technology (ICT) services, including computer services and related activities (IT services), has more than doubled since 2005 and was estimated at \$1.8 trillion in 2017. Exports of IT services were estimated at \$438 billion in 2017, with the European Union as the largest global exporter followed by India while the United States and Canada as the main importers. New technologies such as the

³ World Trade Organization (WTO) (2019), World Trade Report: The Future of Services Trade https://www.wto.org/english/res_e/booksp_e/00_wtr19_e.pdf

Internet of Things, cloud analytics and artificial intelligence, are not only expected to boost the IT industry and global trade in computer services, but also trade in intellectual property (IP)-related services over the next few years.

In 2017, the largest overall increase in services restrictiveness (lack of market access) was in the telecommunications sector which was primarily due to increased restrictions on foreign investment and operations in the sector. To promote market access, governments should lower barriers to trade and investment, promote competition, simplify administrative procedures, and boost connectivity in rural and remote areas. Investments in physical and digital infrastructures, in addition to policies aiming at market openness and liberalizing infrastructure-related services, could reduce trade costs and promote services trade.

IP-Related Services

IP-related services consist of fees for the reproduction and distribution of copyrights on computer software, audio-visuals, books, broadcasting, and recording of live performances. In the last five years, the growth of on-demand music and video streaming, through online platforms, has turned audio-visuals into the most dynamic segment of the United States' IP-related services exports.

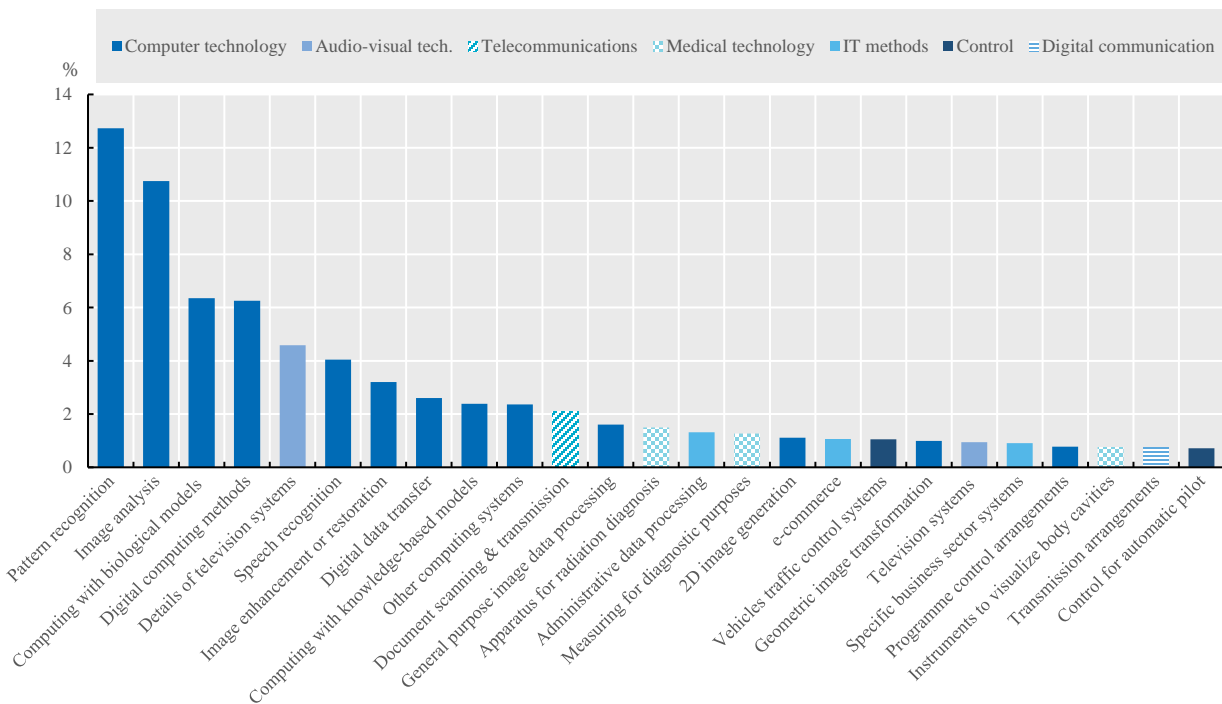


Figure 2. Top 25 technologies combined in AI-related patents of the world's top R&D investors, 2014-16

Source: OECD, STI Micro-data Lab: Intellectual Property Database, <http://oe.cd/ipstats>, January 2019.

In general, cross-border trade in IP-related services is dominated by flows between developed countries (92 per cent of exports and 75 percent of imports) and is estimated at \$396 billion. Digital communications, IT and electrical machinery were the key areas of technology for patent applications in China in 2017, while Singapore focused on IT, semiconductors, pharmaceuticals, and biotechnologies. The Republic of Korea ranked third globally for applications for industrial designs, mainly in ICT and audio-visuals in the same year.

Digitization has led to a significant rise in developing Asia's IP-related services exports which increased by 17% per annum on average since 2005. In the Middle East, Israel is an international hub for research and innovation ranging from IT to medical technologies and pharmaceuticals. In 2017, Israel spent 4.5% of GDP on R&D and ranked first in the world, and fourth for exports of R&D services, followed by the European Union, the United States, and China. Although IP-Related services are covered in great detail in existing TPRs, policies with respect to digital IP services can elaborate upon countries' measures in the age of digitization.

Digital Professional Services

Services now account for one-fifth of cross-border trade and are the fastest growing sector. Distribution services and financial services are the most traded services globally, accounting for almost one-fifth of trade in services each, followed by telecommunications, audio-visual and computer services, which together account for 13.2%. Trade in other sectors, such as educational, health, and environmental services, although currently relatively small, is increasing rapidly.

Exports of digitally deliverable services amounted to \$2.9 trillion in 2018, 50% of global services exports. Of this, business services exports are about \$1.2 trillion. The faster growth of ICT services exports and digitally deliverable services in comparison to total services exports demonstrates increasing digitalization of an economy.

Developed economies grew with respect to the use of intellectual property, financial services, and audiovisual and related services while in developing countries, telecommunications, computer and information services constituted the largest share (around 30%) of digitally deliverable services. In LDCs, these services accounted for 16% of all their services exports.

Exports of digitally deliverable services have been growing in Africa, the transition economies, West Asia, as well as in Latin America and the Caribbean, but they have remained considerably lower than in the other regions. In the United States, these services represented slightly more than half of the country's exports of all services in 2016 while a study in the EU during 2014 concluded that 52% of intra-EU trade was in digitally deliverable service and 56%. In Costa Rica, these services represented 41% of total exports of services in 2017 of which 95% were digitally delivered.

The advent of new digital technologies has led to the supply of several professional services across borders, including those for which it was previously necessary to be face-to-face, for example, telemedicine and telesurgery. As countries prepare to offer the following digital services, TPRs should evaluate various new policies that emerge as a result of digital advancement that has changed the nature of trade in services.

Telemedicine

Telemedicine is the remote diagnosis and treatment of patients through telecommunications technology. Biometric measuring devices such as equipment monitoring heart rate, blood pressure and blood glucose levels are increasingly used remotely to monitor and manage patients with acute and chronic illnesses. This will likely lead to healthcare services migrating from hospitals into patients' homes and may increase the cross-border trade of healthcare services.

Telesurgery

Telesurgery uses wireless networking and robotic technology to allow surgeons to operate on distantly located patients. This technology removes geographical and financial barriers that prevent timely and high-quality surgical intervention. However, there are several challenges to telesurgery, such as the stability and security of networks, and legal and regulatory issues. Moreover, the current cost of acquiring and maintaining telesurgery systems is extremely high.

Online Education Services

Digital technologies have increased trade in education services through online courses. In addition to recorded lectures, readings and problem sets, many e-learning platforms provide interactive courses with user forums to encourage interactions among students, professors and teaching assistants, as well as immediate feedback through quizzes and assignments.

Students from developing countries and remote areas in particular, have access to education from top university professors through online videos and interactive assignments, often at a fraction of the normal university tuition. The global online education services are projected to grow from \$3.9 Bn in 2018 to \$20.8 Bn by 2023, with an annual growth rate of 40.1%⁴.

The rapidly growth of 4G networks has significantly enhanced delivery of education services by improving download speeds which allow teachers to deliver online learning material, such as videos through digital platforms. The addition of virtual reality and amplified reality technologies have the potential to engage and motivate students to explore education material from a variety of differing perspectives. As the quality of online education continues to improve, more individuals will enroll in online education, offering new opportunities for cross-border trade in education services. These new opportunities for cross-border trade in education services are likely to benefit developing countries through knowledge diffusion at low costs, and thus contribute to human capital development in developing countries.

Trade in New Digital Technologies

Data-driven and digital innovation have increased significantly. In the first half of 2018, artificial intelligence (AI) start-ups received 12% of private equity investment worldwide and the share is increasing in all major economies. Data also increasingly serve as a foundation of digital transformation, and enhancing access to data is essential, including through sharing mechanisms that reflect legitimate national, private and security interests.

But not all countries innovate in the same way or to the same extent: over 2013-16, about 60% of the People's Republic of China's patents were in information and communications technologies compared to 33% of OECD countries' patents⁵. To unleash digital innovation, policies should promote entrepreneurship; facilitate access to finance; support basic research, knowledge diffusion and open science; and open government data. Policies should also encourage experimentation.

Blockchain technologies

⁴ World Trade Organization (WTO) (2019), World Trade Report: The Future of Services Trade: https://www.wto.org/english/res_e/booksp_e/00_wtr19_e.pdf

⁵ OECD. 2019 "Going Digital: Shaping Policies, Improving Lives", OECD Publishing, Paris, <http://www.oecd.org/going-digital/going-digital-shaping-policies-improving-lives-9789264312012-en.htm>

Blockchain technologies, known for the technology behind cryptocurrencies, allow multiple parties to participate in secure, trusted transactions without any intermediary. In developing countries, these are used for digital identification, property rights and aid disbursement. Blockchain applications are currently used in Africa in the areas of fintech, land management, transport, health and education in Africa (UNECA, 2017). China alone accounts for nearly 50% of all patent applications for technology families relating to blockchains, and, together with the United States, they represent more than 75 percent of all such patent applications.

Three-dimensional (3D) printing

Three-dimensional (3D) printing, also known as additive manufacturing, can potentially disrupt manufacturing processes by enhancing international trade in designs rather than in final products. Firms can scan any product through smart apps and turn it into a digital design file. The customer then views and configures it before picking up the product, which is produced via 3D printing. The construction sector is increasingly making use of 3D printing by sending construction designs to distant locations through digital networks. It offers opportunities for developing countries to bypass traditional manufacturing processes.

In Africa for example, such ventures exist for local entrepreneurship in Togo, for medical supplies in Uganda, for filling import gaps in Nigeria, for commercial ventures in South Africa, and for renewable energy in Rwanda. The largest bicycle and scooter maker in India have been using 3D printing since 2014 which has allowed products to reach international markets at faster rates. This technology is being used to create prosthetics in countries such as Cambodia, Sudan, Uganda, and the United Republic of Tanzania. However, 3D-printing capacity remains highly concentrated with five leading countries the United States, followed by China, Japan, Germany, and the United Kingdom account for an estimated 70% of the total.

Internet of things

Internet of things (IoT) refers to the growing range of Internet-connected devices such as sensors, meters, radio frequency identification (RFID) chips and other gadgets that are fixed in various everyday objects enabling them to send and receive various kinds of data. It has wide applications, including in energy meters, for RFID tagging of goods for manufacturing, livestock and logistics, for monitoring soil and weather conditions in agriculture, and for wearables.

In 2018, there were more 8.6 billion “things” connected to the Internet compared to the 5.7 billion mobile broadband subscriptions that connect people. The number of IoT connections is estimated to grow at 17% a year and exceed 22 billion by 2024. The top seven countries; the United States, China, Japan, Germany, the Republic of Korea, France, and the United Kingdom account for nearly 75% of worldwide spending on IoT, with the first two countries representing 50% of global spending.

5G mobile broadband Fifth generation (5G) wireless technology is expected to be extremely important for IoT due to its greater ability to process massive volumes of data and offers the possibility to connect many more devices (e.g. sensors and smart devices). According to the estimates, the United States, followed by Europe and Asia Pacific will be leaders in 5G adoption by 2025. Significant investments in 5G infrastructure will be required in developing countries to benefit from the impact of IoT. Lastly, by 2025, the share of 5G in total connections is expected to reach 59% in the Republic of Korea, compared with only 8% in Latin America and 3% in the sub-Saharan Africa.

Cloud Computing

Cloud computing is facilitated by higher Internet speeds, which have drastically reduced latency between users and far away data centers leading to lower data storage costs. As cloud computing transforms business models, the need for in-house IT expertise is reduced and there is more flexibility for scaling. Some free cloud services provide office-like application tools that are useful for micro, small and medium-sized enterprises (MSMEs). This is especially useful for countries where the cost of licensed software can be an obstacle to creating applications and providing services. However, in many developing countries, high costs of additional international bandwidth to access overseas servers and data centers still limit the use of cloud services.

Most cloud traffic is generated in North America, followed by Asia Pacific and Western Europe, which together account for about 90% of all cloud traffic. From 2016 to 2021, cloud traffic is expected to grow at the fastest annual growth rate of 35% in the Middle East and Africa, followed by Central and Eastern Europe and Asia Pacific, each of which is expected to grow at 29% per annum. The cloud market is also highly concentrated. According to Synergy Research Group (2019), the top 5 providers – Amazon Web Services (AWS), Microsoft, Google, IBM, and Alibaba – account for 75% of the global cloud infrastructure services, with AWS alone accounting for over a third of that market.

Online Platforms

Online platforms and search engine services reduce the cost of searching for and obtaining information. They facilitate businesses in finding consumers, connect ordinary consumers with suppliers, firms with workers and investors with entrepreneurs. The reduction in search costs and verification costs has led to an increase in offshoring, bringing new opportunities for services trade.

Online labor platforms connect freelance service providers with worldwide clients. These platforms enable individuals to offer their services across borders with more flexibility through online freelance marketplaces by using web collaboration software and video conferencing. Occupations such as software development, creative design and multimedia, sales and marketing support, as well as professional services, are offered online. In many economies, individuals on average earn higher wages through such platforms than through local companies.

The reduced costs of searching information have also led to the growth of online “peer-to-peer” platforms dedicated to facilitating matching. This technological development, coupled with the growing demand for affordable services, has enhanced the “sharing economy”. Platforms in the sharing economy allow apartments, cars, and other items to be sold or rented by private owners directly to consumers. In addition, social networking platforms such as Facebook, Instagram, Zoom and many others connect people and allow them to share personal profiles and interests.

The world's top digital companies are highly concentrated geographically. Most of the world's 70 highest valued online platforms are based in the United States, increasing their share from 65% to 70%, followed by Asia (particularly China). Online platforms in Latin American and African are only marginal. An analysis of web traffic data confirms the dominance of the large United States digital platform companies. The United States hosts more than half of the top 100 websites used in 9 of the world's 13 subregions shown in the table. Even in Western Europe, the most-used websites are based in the United States.

Platforms have also revolutionized the advertising services sector (US Bureau of Economic Analysis, 2018). The sector has moved away from traditional media such as television, radio, and newspapers into digital channels. Social media platforms, search engines and websites collect data to create automated and personalized online advertisements which can reach potential customers from all over the world.

Since 2006, US exports of cross-border advertising services have almost quadrupled. Advertising platforms like Facebook and Google rely significantly upon advertising revenues. Advertising accounts for over 80% of the total revenues of Twitter and Google, and nearly 100% of Facebook and Snapchat. These platforms have a strong incentive to extract and store personal data, which is essential to their targeted advertising businesses. As a result, these businesses are extremely likely to face controversies over data privacy, leading to many countries taking strict measures. Therefore, TPRs should also evaluate the strategies that countries adopt to promote or discourage online platforms which significantly affect the revenue of digital economies.

4. Emerging Policy Measures for Digital Trade

Given the importance of digital trade, various groups of countries have begun work on common international rules for digital trade. Seventy-six countries launched negotiations for a global framework and obligations on e-commerce in the WTO framework in January 2019. These discussions provide a useful airing of views of central issues but given large differences in proposals few observers expect concrete results soon.

The United States generally favors a market-driven approach—an open, interoperable, secure, and reliable internet that facilitates the free flow of online information. In addition, policy objectives including privacy and national security are also supported. In recent years, however, the United States has established new barriers to protect domestic technologies and supply chains. The European Union agrees with substantial market access and the free flow of information, but also emphasizes the need for data protection and technological sovereignty. China, the third major player in the negotiations, has its own unique system. The Chinese government exercises considerable control over its networks and restricts companies that participate in its digital economy. China has established a firewall between its internet and the rest of the world, restricting movements of information and technology. Other countries broadly follow one or another of these approaches.

Meanwhile, regional trade agreements (RTAs) provide a laboratory for cross-border trade policies and have already achieved some concrete outcomes. They cover issues that cannot (at least for now) be agreed internationally but are important to businesses and policymakers. These RTAs already play an important role in trade governance; they cover more than half of international trade today, operating alongside global multilateral agreements under the WTO. In recent years, many countries have actively sought to establish new – and often more modern and progressive – bilateral and regional trade agreements that aim to increase trade and boost economic growth.

The e-commerce provisions of RTAs can be helpful in TPRs as benchmarks for assessing policies in different countries. As of June 2019, 84 RTAs included e-commerce provisions as standalone chapters or dedicated articles. Although the total number of RTAs incorporating such provisions is still limited, more than half of the WTO members have signed at least one RTA that contains a standalone e-commerce provision. Through specific reference to different RTAs, this section explores various policy measures about e-commerce that have been

adopted by one or more RTAs. From the viewpoint of TPRs, these measures offer a framework for describing the policy environment of digital trade in many countries.

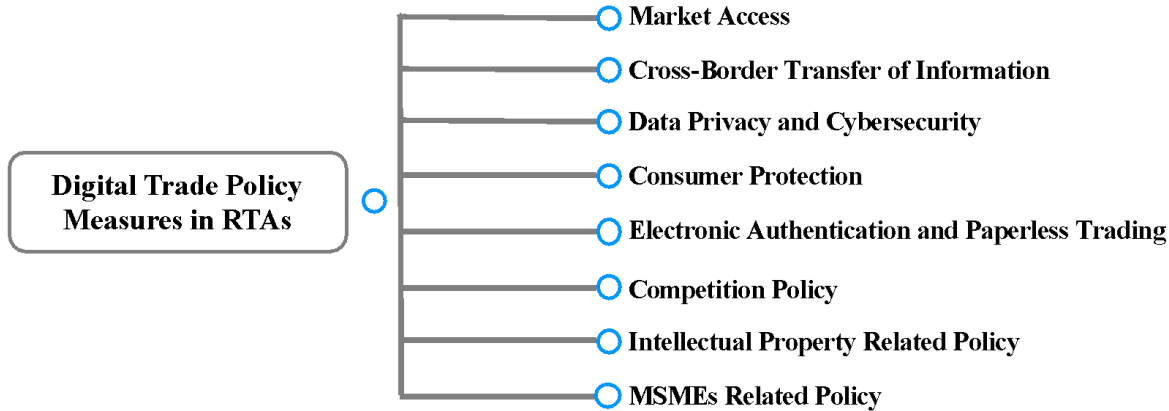


Figure 3. Main types of digital trade policy measures in RTAs

Market Access

Market openness enables digitalization to thrive by creating a business-friendly environment that allows foreign and domestic firms to compete on an equal footing and without unnecessary restrictions. Open trade and investment schemes can create new avenues to rapidly upgrade technologies and skills, and increase specialization, as frontier technologies, applications and processes diffuse through open markets. Market openness also fosters competition and helps domestic and foreign firms benefit from trade and investment which can contribute to economic growth.

The scope of market openness provisions ranges from restrictions on number of suppliers, to non-discriminatory treatment of digital products, as well as no customs duties on electronic transmission or digital products. Other relevant provisions address the applicability of WTO rules to e-commerce, as highlighted in table 2. Words in specific provisions are often different across agreements. Common provisions in non-discrimination clauses refer to the national treatment of digital products, the exemption to non-discrimination obligations, and most-favoured-nation treatment of digital products. The language of customs duties provisions also differs across RTAs. Most provisions specify that the parties shall not impose customs duties on digital products by electronic transmission, while some would give parties the right to impose internal tax or charge on digital products.

Table 2. Provisions related to digital economy on market access

Provision: Market Access	
Restrictions on number of suppliers (numerical quotas, monopolies, exclusive service suppliers)	Australia – Hong Kong, China, 2020, Article 7.3 CAFTA, 2006, Article 28 Pacific Alliance, 2016, Article 9.6 US – Oman, 2009, Article 11.4
Non-discriminatory treatment of digital products	Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.4 GCC – Singapore 2015, Article Australia - Hong Kong, China 2020, Article 7.4

	Pacific Alliance, 2016, Article 11.3 US – Oman, 2009, Article 11.2, 11.3
No customs duties on electronic transmission/digital products	Australia – Chile, 2009, Article 16.4; Canada – South Korea, 2015, Article 13.3; The EU – Japan, 2019, Article 8.72; India – Singapore, 2005, Article 10.4; The United States – Singapore, 2004, Article 14.3
Recognition {where relevant} of the applicability of WTO {[Agreement]} (rules) to measures affecting e-commerce	China – Georgia, 2018, Article 12.2 South Korea – the US, 2012, Article 15.1
Recognition of the applicability of (relevant) WTO rules [to e-commerce]	Canada – Columbia, 2011, Article 15.2 The United States – Singapore, 2004, Article 14.1

Source: Based on Monteiro and Teh (2017)⁶ and WTO Regional Trade Agreements Database, <http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

Cross Border Transfer of Information

Data increasingly boost trade in the digital age and any measures related to data flows are likely to have trade consequences. Such measures result from data-related regulation, such as local storage requirements, personal data protection agreements or trade agreements that cover cross-border data flows. Several existing measures already make some cross-border data flows conditional or ban others altogether.

Restrictions on cross-border information transfers range from cooperation and authorization (including exceptions and requirements) to the importance of maintaining information free flow, as discussed in table 3. Apart from recognizing the importance of free cross-border data flow, parties also make commitments to refrain from unnecessary barriers.

Policymakers tend to restrict data transfers because of their concerns regarding data privacy and security. Arguably, some also use these policies to foster domestic firms that would normally keep and process data on domestic servers. Data flow restrictions often involve limitations on the ability of companies to transmit data across the border, i.e. from domestic users to foreign countries. Transfer restrictions are a key issue and may impose a high cost on foreign companies who want to do business and thus impact trade.

Table 3. Provisions related to digital economy on cross-border transfer of information

Provision: Cross-border transfer of information	
Cooperation	Canada – Columbia, 2011, Article 15.7; Canada – Honduras, 2014, Article 16.5; Canada – South Korea, 2015, Article 13.7; The EU – Japan, 2019, Article 8.80; South Korea – the US, 2012, Article 15.5 Chile – Thailand, Article 11.7

⁶ Monteiro and Teh (2017). Provisions on Electronic Commerce in Regional Trade Agreements. Geneva: World Trade Organization. https://www.wto.org/english/res_e/reser_e/ersd201711_e.pdf

	Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.11 Australia – Hong Kong, China, 2020, Article 11.7 Pacific Alliance, 2016, Article 13.11
Unnecessary barrier to cross-border transfer of information	South Korea – the US, 2012, Article 15.8 Australia – Hong Kong, China, 2020, Article 11.7
Importance of information free flow	South Korea – the US, 2012, Article 15.8

Source: Based on Monteiro and Teh (2017)³ and WTO Regional Trade Agreements Database, <http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

Data privacy and Cybersecurity

As digital transformation progresses, privacy, and the protection of personal data, is emerging as an ever more critical influence on trust. Personal data plays an important role in our economies and new technologies and responsible data use are generating great societal and economic benefits. At the same time, the abundance of personal data gathered, processed and exchanged has elevated the risks to individuals' privacy.

Data-privacy concerns vary by country. A 2019 survey on Internet security and trust conducted by the Centre for International Governance Innovation (CIGI) and Ipsos with UNCTAD and the Internet Society, found that 78% of Internet users in 25 countries were at least somewhat concerned about their privacy online (CIGI-Ipsos et al., 2019). These concerns were the most widespread in Egypt, Hong Kong (China), India, Mexico and Nigeria where the proportion was 90% or higher while the lowest level of concern was seen in Kenya at 44%.

As more personal data is collected and stored by the firms, internet service providers and governments, the data privacy risks increase. In Chile, for example, about 7.5% of individuals reported a privacy violation, whereas in the Czech Republic the share was less than 1%. Personal data breaches are a major source of privacy violations, and digital technologies are increasingly being used to derive personal data by matching and extracting datasets.

Currently there are significant gaps and exemptions contained in data protection law, which have a great impact on interoperability across countries. For instance, some data protection laws only apply to small businesses or small datasets, or specific sectors such as health and credit, or would be based on the subject and the source of the data.

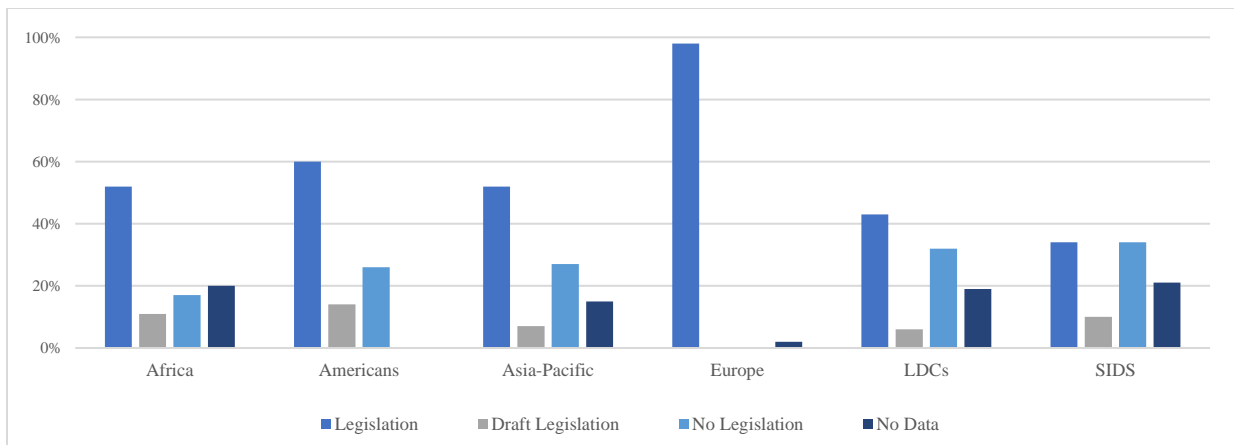


Figure 4. Data protection and privacy legislation

Source: Based on UNCTAD e-commerce legislation database

Countries with cybersecurity strategies may implement various types of policies to guarantee the security of their IT systems, propose security standards or requirements for their purchasing systems, including foreign participation in government systems, specific certification process for cryptographic technology, etc.

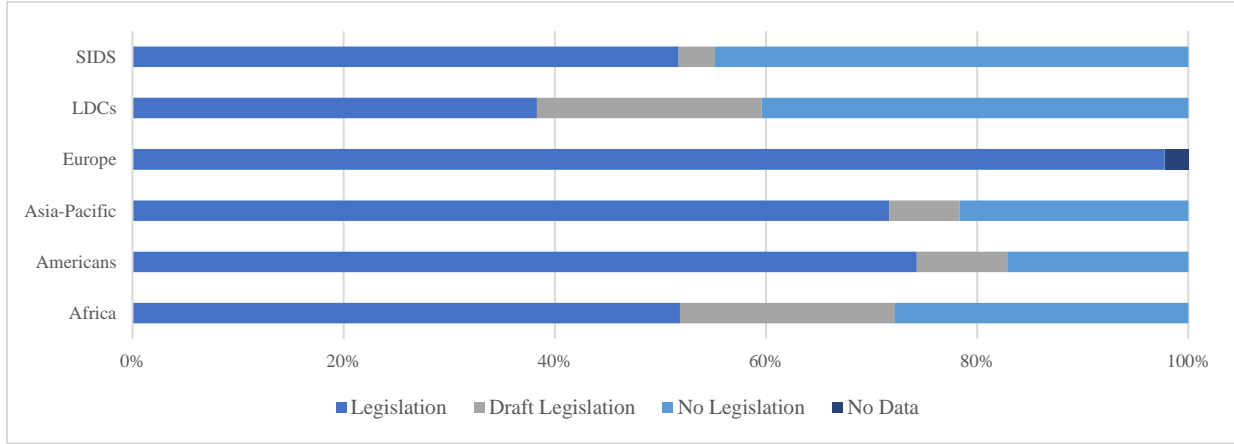


Figure 5. Cybercrime legislation

Source: Based on UNCTAD e-commerce legislation database

Countries use bilateral or regional trade agreements to address issues related to data flow with privacy-related provisions. For example, the United States-Mexico-Canada Agreement refers to the adoption or maintenance of a legal framework that offers protection of personal information, while mentioning that no party should restrict the cross-border transfer of information with limited exceptions for legitimate public policy objectives.

Regional privacy frameworks for example Convention 108 of the Council of Europe binds 47 Council of Europe member states and is also open to non-members. Another example is the European Union's General Data Protection Regulation (GDPR), which standardizes data protection laws of all countries in the European Economic Area. Non-binding agreements can also lead to standardized privacy laws and facilitate privacy-respecting data flows. The Asia-Pacific Economic Cooperation (APEC) organization has implemented a voluntary but enforceable system of Cross-Border Privacy Rules (CBPR), through which participating APEC economies work to lift the overall standard of privacy across the region.

The number of RTAs covering personal information protection and cybersecurity issues has been increasing. A wide range of provisions has been established to guarantee the adoption, importance, cooperation, and compatibility of data protection (see table 4 below). A complementary provision also refers to taking into account international standards, practices or criteria in the development of standards and measures of personal information protection. Other relevant provisions include the cooperation among parties in case of leaked data. However, a limited number of RTAs contain provisions related to the protection of personal information establishing different content principles (WTO, 2018²).

Table 4. Provisions related to digital economy on data privacy

Provision: Personal information protection and data privacy	
Adoption of personal data protection measures	Australia – Chile, 2009, Article 16.8;

	Australia – China, 2015, Article 12.8; Canada – Columbia, 2011, Article 15.6; Canada – South Korea, 2015, Article 13.4
Information (and experiences) exchange	Canada – Columbia, 2011, Article 15.6
Taking into account international standards in developing standards/measures	The ASEAN – Australia – New Zealand, 2010, Article 10.7; Australia – Chile, 2009, Article 16.8; Australia – China, 2015, Article 12.8; Canada – South Korea, 2015, Article 13.4 Australia – Hong Kong, China, 2020, Article 11.9
Definition of personal information/data	Australia – Chile, 2009, Article 16.1; Australia – China, 2015, Article 12.2; Canada – Columbia, 2011, Article 15.9; Canada – South Korea, 2015, Article 13.9; South Korea – the US, 2012, Article 15.9
Importance of protecting personal data	The ASEAN – Australia – New Zealand, 2010, Article 10.7; The EU – Japan, 2019, Article 8.78 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.8 Australia – Hong Kong, China, 2020, Article 11.9
Compatibility of e-commerce development with international standards of data protection	Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.8 EU – Canada, 2017, Article 16.4
Cooperation	Canada – South Korea, 2015, Article 13.7 Australia – Hong Kong, China, 2020, Article 11.13
Cooperation with authorities in case of leaked personal data	Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.8 Australia – Hong Kong, China, 2020, Article 11.9
Provision on personal data protection not applying before enacting domestic laws	The ASEAN – Australia – New Zealand, 2010, Article 10.7

Source: Based on Monteiro and Teh (2017)³ and WTO Regional Trade Agreements Database,

<http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

Consumer protection

Governments are committed to establish a legal framework for consumer protection from fraudulent and deceptive online activities and misleading online advertisements, as well as unsolicited commercial electronic messages, to enhance confidence and trust.

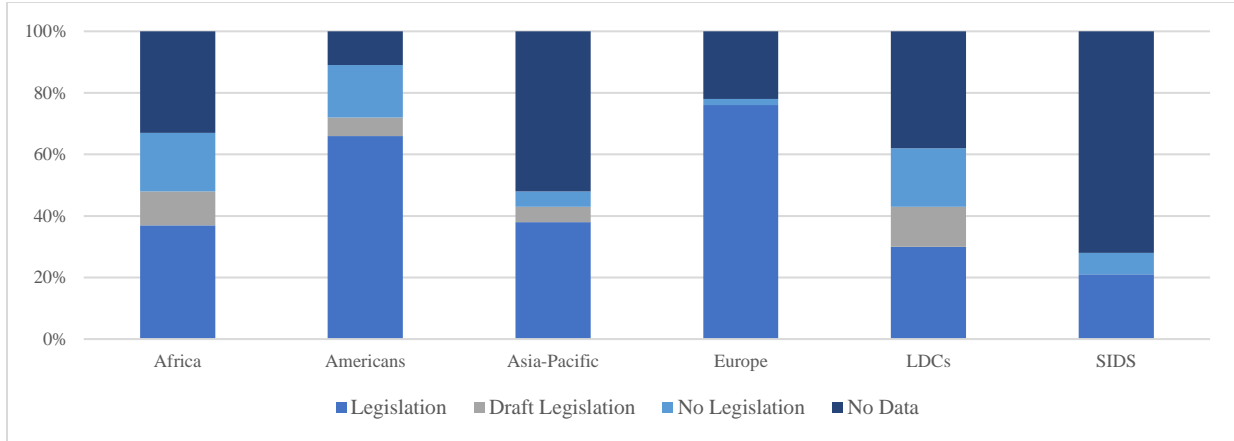


Figure 6. Consumer protection legislation

Source: Based on UNCTAD e-commerce legislation database

The scope of provisions on online consumer protection ranges from the importance of consumer protection, information and experiences exchange between parties, to cooperation between authorities and encouragement of business to adopt fair business practices. A complementary provision further requires that online consumer protection shall be at least equivalent to other forms, non-electronic for instance.

Table 5. Provisions related to digital economy on online consumer protection

Provision: Online consumer protection	
Importance of consumer protection	Canada – Columbia, 2011, Article 15.4; Canada – Honduras, 2014, Article 16.4; Canada – South Korea, 2015, Article 13.6; The EU – Japan, 2019, Article 8.78; South Korea – the US, 2012, Article 15.5 Australia – Hong Kong, China, 2020, Article 15.6
Information (and experiences) exchange	Canada – Columbia, 2011, Article 15.4; Canada – Honduras, 2014, Article 16.4; Canada – South Korea, 2015, Article 13.6
Cooperation between authorities on consumer protection	The EU – Japan, 2019, Article 8.78; South Korea – the US, 2012, Article 15.5 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.7
Consumer protection at least equivalent to non-electronic commerce	The ASEAN – Australia – New Zealand, 2010, Article 10.6; Australia – Chile, 2009, Article 16.7; Australia – China, 2015, Article 12.7
Cooperation	Australia – China, 2015, Article 12.10; Canada – South Korea, 2015, Article 13.7; The EU – Japan, 2019, Article 8.80 Australia – Hong Kong, China, 2020, Article 11.5

Adoption of consumer protection measures	Australia – Chile, 2009, Article 16.7; The EU – Japan, 2019, Article 8.78 Australia – Hong Kong, China, 2020, Article 11.5 Pacific Alliance, 2016, Article 13.8
Encouragement of business to adopt fair business practices	Australia – Chile, 2009, Article 16.7 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.4 Australia – Hong Kong, China, 2020, Article 11.6 Pacific Alliance, 2016, Article 13.4 US – Oman, 2009, Article 14.3
Provision on equivalent consumer protection not applying before enacting domestic laws	The ASEAN – Australia – New Zealand, 2010, Article 10.6

Source: Based on Monteiro and Teh (2017)³ and WTO Regional Trade Agreements Database, <http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

Electronic authentication, contracts, and signature

Many countries are building a legal framework for the validity of electronic contracts and signatures. International organizations are also cooperating in this area to facilitate smooth cross-border flows when electronic signatures happen in different jurisdictions.

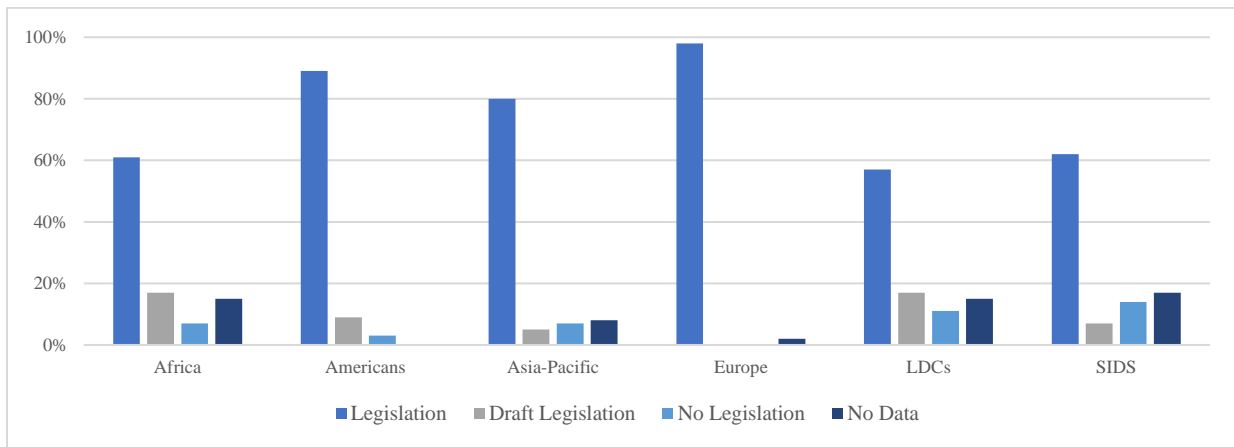


Figure 7. E-transaction legislation

Source: Based on UNCTAD e-commerce legislation database

An increasing number of RTAs include a wide range of electronic authentication related provisions, including the definition of certificate, development of exchanging information and experience between parties, mutual recognition and interoperability of digital certificates, cooperation, as well as the adoption of measures.

Table 6. Provisions related to digital economy on electronic authentication and signatures

Provision: Electronic authentication and signatures	
Definition of certificate / authentication	The ASEAN – Australia – New Zealand, 2010, Article 10.2;

	Australia – Chile, 2009, Article 16.1; Australia – China, 2015, Article 12.2; Canada – Columbia, 2011, Article 15.9; The EU – Japan, 2019, Article 8.71; South Korea – the US, 2012, Article 15.9
Working towards mutual recognition of digital certificates	The ASEAN – Australia – New Zealand, 2010, Article 10.5; Australia – Chile, 2009, Article 16.6 Australia – China, 2015, Article 12.6 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.6 Australia – Hong Kong, China, 2020, Article 11.3 Pacific Alliance, 2016, Article 13.8
Cooperation	The EU – Japan, 2019, Article 8.80
No adoption of measures preventing from providing authentication's compliance	The EU – Japan, 2019, Article 8.77; South Korea – the US, 2012, Article 15.4
Adoption of measures permitting to determine appropriate authentication technologies	The ASEAN – Australia – New Zealand, 2010, Article 10.5; Australia – Chile, 2009, Article 16.6 Australia – Hong Kong, China, 2020, Article 11.3
Adoption of measures permitting to provide authentication's compliance	The ASEAN – Australia – New Zealand, 2010, Article 10.5; Australia – Chile, 2009, Article 16.6; Australia – China, 2015, Article 12.6; South Korea – the US, 2012, Article 15.4
Interoperability of digital certificates	The ASEAN – Australia – New Zealand, 2010, Article 10.5; Australia – Chile, 2009, Article 16.6 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.6 Australia – Hong Kong, China, 2020, Article 11.3
Use of digital certificates	Australia – China, 2015, Article 12.6
No adoption of measures denying legal validity solely based on electronic form	The EU – Japan, 2019, Article 8.77

Source: Based on Monteiro and Teh (2017)³ and WTO Regional Trade Agreements Database,
<http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

Paperless trading administration

Paperless trading mainly refers to making the availability of trade administration documents in electronic form. A wide range of paperless trading administration related provisions (as table 7 shows), although the language particularly differs through RTAs, include the legal equivalence of electronic trade administration documents submitted by importers and exporters, cooperation in international fora, considerations regarding international standards, as well as the implementation of electronic government initiatives.

Table 7. Provisions related to digital economy on paperless trading administration

Provision: Paperless trading administration	
Making trade administration documents available in electronic form	The ASEAN – Australia – New Zealand, 2010, Article 10.8; Australia – China, 2015, Article 12.9; Australia – Hong Kong, China, 2020, Article 11.10 Canada – Columbia, 2011, Article 15.5; Canada – South Korea, 2015, Article 13.5; South Korea – the US, 2012, Article 15.6 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.9
Legal equivalence of electronic trade administration documents	Australia – Chile, 2009, Article 16.9; Australia – China, 2015, Article 12.9; Canada – Columbia, 2011, Article 15.5; Canada – South Korea, 2015, Article 13.5; South Korea – the US, 2012, Article 15.6 Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.9 Australia – Hong Kong, China, 2020, Article 11.10
Definition of trade administration documents	The ASEAN – Australia – New Zealand, 2010, Article 10.2; Australia – Chile, 2009, Article 16.1; Australia – China, 2015, Article 12.2; Canada – Columbia, 2011, Article 15.9; Canada – South Korea, 2015, Article 13.9; South Korea – the US, 2012, Article 15.9
Cooperation	The ASEAN – Australia – New Zealand, 2010, Article 10.9
Cooperation in international fora	The ASEAN – Australia – New Zealand, 2010, Article 10.8; Australia – China, 2015, Article 12.9
Taking into account international standards	Australia – Chile, 2009, Article 16.9; Australia – China, 2015, Article 12.9
Implementation of paperless trading/ e-government initiatives	The ASEAN – Australia – New Zealand, 2010, Article 10.8
Applicability of customs administration chapter	Comprehensive and Progressive Agreement for Trans-Pacific Partnership, 2018, Article 14.3

Source: Based on Monteiro and Teh (2017)³ and WTO Regional Trade Agreements Database,
<http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

Competition policy

Digital technologies and data lead to greater competition in many markets, while also leading to greater concentration, market power and dominance in other markets. Competition authorities must be prepared with flexible tools and co-operate across borders to address transnational competition issues. With the emergence of “winner-takes-all” dynamics and tech giants such as Amazon, Alibaba and Google, a number of governments

pay growing attention to competition policy to address monopoly and market power and to ensure a level playing field for small firms. Thus, the application of competition policy regulations to online platforms is an especially important characteristic of a country's digital commerce environment.

Intellectual Property-Related Policy

Intellectual property protection provides the legal framework related to domestic and international digital product trading, such as online commercial transactions of music, software and films. It includes relevant issues including unauthorized distribution, IP infringement, the relationship between trademarks and internet domain names. Besides referring to WIPO "Internet Treaties", one of the most common types of provisions on intellectual property issues address the protection and enforcement of copyrights, technological protection measures, and rights management information protection (WTO, 2018²). Other specific provisions related to IP include trademark protection, programme-carrying satellite, and cable signals protection.

MSMEs Related Policy

Many governments are making efforts to increase the involvement of MSMEs in the digital era, such as the Digital Free Trade Zone launched by the cooperation among Malaysian government, Alibaba, and Malaysia Digital Economy Corporation (WTO, 2018²). Other governments also offer advisory services on e-marketplaces and facilitate training programs to help MSMEs improve their online export capabilities. One of the most common types of provisions related to MSMEs refers to encouraging the private sector to adopt self-regulation, including codes of conduct, model contracts, guidelines, and enforcement mechanisms. Other specific provisions also address the cooperation on private sector participation and MSMEs and focus on improving the use of e-commerce and/or solving problems when MSMEs engage in e-commerce.

Table 8. Provisions related to digital economy on private sector participation

Provision: Private sector participation	
Importance of encouraging self-regulation	Canada – South Korea, 2015, Article 13.2
Regulatory framework supporting industry-led development	The ASEAN – Australia – New Zealand, 2010, Article 10.9
Encouraging self-regulation	Canada – Columbia, 2011, Article 15.7; Canada – Honduras, 2014, Article 16.5; Canada – South Korea, 2015, Article 13.7; Canada – Panama, 2013, Article 15.3 Australia – Hong Kong, China, 2020, Article 11.13
Cooperation on private sector participation	The ASEAN – Australia – New Zealand, 2010, Article 10.9
Cooperation on SMEs	The ASEAN – Australia – New Zealand, 2010, Article 10.9; Canada – Columbia, 2011, Article 15.7; Canada – Honduras, 2014, Article 16.5; Canada – South Korea, 2015, Article 13.7; The EU – Japan, 2019, Article 8.80 Chile – Thailand, 2017, Article 11.7 Australia – Hong Kong, China, 2020, Article 11.13
Importance of facilitating the use by SMEs	Canada – South Korea, 2015, Article 13.2

	EU – Canada, 2017, Article 16.5
Information and experiences exchange	Canada – Panama, 2013, Article 15.3

Source: Based on Monteiro and Teh (2017)³ and WTO Regional Trade Agreements Database,
<http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx>

5. Examples of Policies on Digital Trade in Various Countries

Barriers to digital trade limit the ability of all the firms to take advantage of the digital economy. When local governments impose unnecessary restrictions on cross border data flows or differentiate between foreign digital services, local firms using these services may be affected the most, since they will be unable to benefit from the cross-border digital services that enable global competitiveness. In this section, we review examples of policy barriers that have been imposed by countries in several major areas of e-commerce regulation.

Restrictions on Cross-Border Data Flows and Data Localization Requirements

China's 2016 Cybersecurity Law restricts cross-border data transfers and enforces broad-based data localization orders. Several regulations in this law severely restrict routine cross-border transfers of information. In addition, the law also imposes data localization obligations on some companies, including those that operate "critical information infrastructure," a vaguely defined term that practically includes all the sectors of the economy.

In late 2019, India started considering a revised draft privacy law that would inflict significant restrictions on cross-border data transfers and demand storing copies of personal data in India. The draft law would permit the government to access non-personal or anonymized data held by data fiduciaries, which raises concerns about businesses' ability to protect intellectual property. The draft law would be an addition to other recent measures that restrict the cross-border flow of data and create burdensome data localization requirements, including a requirement in 2018 for payment service suppliers to store all information related to electronic payments by Indian citizens within India.

Kenya passed a new data protection law in 2019 that includes potentially restrictive provisions related to the cross-border transfer of personal information, including "proof" that personal data will be secured as a condition for cross-border transfer, consent for transfer of a broad range of personal data considered "sensitive," and official discretion to forbid cross-border transfer of certain categories of personal data.

Korea restricts the export of geo-location data which hinders the services of foreign suppliers which include services such as traffic updates and navigation into their products. In addition, despite the steps taken by Korea to expand cloud computing opportunities in its territory, restrictions on the cross-border use of cloud computing for financial services remain a serious barrier to the competitiveness of foreign cloud computing suppliers in the Korean market. Similarly, Nigeria requires businesses to store all data related to its citizens locally which affects foreign businesses that distribute their data storage and processing globally.

Russian law requires companies that collect electronic data to store the data concerning its citizens, locally. For this reason, several U.S.-based services have been blocked in the country for failure to comply with this law. In 2019 Russia passed a law which requires pre-installation of Russian software applications on certain consumer electronic products, including smartphones, computers, tablets, and smart TVs. These software applications

include search engines, maps and navigation, anti-virus, national payment, and social network applications. As a result of this law, software imports are limited.

In 2018, Saudi Arabia issued the Cloud Computing Regulatory Framework, requiring localization for certain types of data. The framework also creates broad regulatory powers to require cloud and other ICT service providers to install government filtering software. Such requirements create market access barriers for many ICT services provided by foreign companies.

Turkey maintains multiple data localization requirements in various laws and regulations which include limitations on transfer of personal data abroad, requirements that suppliers of electronic payment services maintain information systems in Turkey, and requirements that publicly traded companies keep their primary and secondary information systems and data in Turkey. In addition, in 2019, Turkey enacted a measure that forbids public institutions from using cloud computing.

In 2018, Vietnam passed a law on cybersecurity that requires online service suppliers to store data, and establish a local presence in Vietnam. These requirements will potentially be imposed on only those companies that fail to comply with specific provisions of the law, such as failing to meet 24-hour takedown requirements for a wide range of online content. However, despite the scope of these requirements, they would still apply to a range of digital services.

Restrictions on Online Services

China forbids foreign companies from directly providing cloud computing services to customers in China, demanding foreign service suppliers to partner with a Chinese company and to give away that partner their technology, intellectual property, and brands in order to enter the market. In addition, China continues its policy to block websites, including communications, networking, online retailing, app stores, news, and other websites. Currently 10 out of the top 30 global sites and approximately 10,000 domains are blocked by the country.

Vietnam on the other hand, requires advertisers to contract with a local services supplier as a condition of placing advertisements on foreign websites targeting Vietnam. This requirement is burdensome, given that the online advertising market typically functions through automated, real-time auctions for ad space. Vietnam is also proposing to extend its broadcasting regulatory regime to online video services, including applying burdensome new requirements related to licensing, local presence, local content quotas, pre-editing and translation, and advertising to these services.

Digital Services Taxes

In 2019, France levied a tax on gross revenues of large digital companies from supplying digital interface services and targeted advertising, including on companies without a physical presence in France. According to a report by USTR, Austria, Czech Republic, Italy, Spain, Turkey, and the United Kingdom have also adopted or are considering similar legislation.

Indonesia issued a new regulation in 2018 to impose tariffs on electronically transmitted digital products, such as software, apps, video, and music. Although tariffs are currently set at zero, imposing duties on digital products would raise concerns about Indonesia's WTO commitment which is to not impose duties on electronic

transmissions. Such measures would significantly affect Indonesia's digital economy which is expected to be worth \$150 billion by 2025, much of which is driven by cross-border data flows involving U.S. firms.

6. Implications for global trade statistics

Considering the rapid development of digital revolution, the opportunities and challenges faced by governments, and the international trade coordination and barriers, well-developed statistical systems should adapt, expand, and provide more granular insights. The short-term challenge is to improve the flexibility and comparability of current statistical frameworks and indicators. These include exploiting tools and mechanisms to access micro-data, developing and enhancing connectivity through satellite accounts and networks, augmenting existing surveys by adding more questions, frequencies, and topic-specific modules.

To build a template for digital transformation and economic statistics, the Advisory Expert Group (AEG) on National Accounts provides support for capturing data within a macroeconomic framework (OECD, 2019⁷). However, heterogeneity exists in industry-level data. Further data collection and international harmonization should also enrich other dimensions of the digital transformation and expand the scope of business surveys, such as the quality of ICT-related human capital, the generation of ICT-related technological innovation and services.

At the micro-data level, the OECD has launched projects based on the distributed approach to utilize innovation survey data. For example, the DYNEMP project uses business registration data to analyze employment dynamics, embryonic businesses and allocative efficiency, and the MULTIPROD project analyzes aggregate productivity. In the meantime, the OECD has also developed a Micro-data lab to connect large-scale administrative and commercial datasets at the micro-level and do analysis on emerging technologies and their influences on corporate performance (OECD, 2019⁴).

Complementary policies regarding access, legal, technical and methodological implications should be explicit to ensure the quality of official statistics. For instance, the OECD Recommendation on Good Statistical Practice and the United Nations Statistics Division (UNSD) has enabled big data projects in NSOs with the combination of internet-based sources (OECD, 2019⁴).

For measuring e-commerce, the first potential avenue is to improve the data collection quality by ICT use surveys. For instance, several new questions are asked by a coalition of seven European countries led by Finland which covers e-commerce developments including bookings and reservations, window shopping, within-group transactions, etc. The second avenue is to expand the inclusion of e-commerce questions to better measure the e-commerce volumes. One example is the involvement of the Structural Business Surveys and Household Expenditure Surveys in the System of National Accounts. The third avenue is to use private big data sources, such as the data from banks and credit card companies, such as the collaboration between the OECD and Spanish Bank BBVA, which gives insights into cross-border expenditure flows and online consumption patterns.

However, challenges exist in measuring Multinational Enterprise (MNE) activities through online platforms which require the development of comparable data in the international scope. Potential measurement for cross-

⁷ OECD (2019), *Measuring the Digital Transformation: A Roadmap for the Future*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264311992-en>.

border data flows is also needed. The OECD has adopted valuation approaches based on market prices, costs, business models and data value chains, formal appraisals relevant to mergers and acquisitions, and value-added processes.

The long-term challenge is to design new and cross-subject methods on the collection and usage of data flows. These include building cooperation with private sector stakeholders, paying priority attention to specific areas – notably the Internet of Things, Blockchain, AI, etc. – and leverage them for digital governments, social impacts and people's well-being.

Measuring Internet of Things and Cloud Computing Services

The measurement of the Internet of Things (IoT) requires a taxonomy with a breakdown into categories, for different types of IoT-related devices that may have different network requirements. For example, remote surgery and automated vehicles need high reliability and low latency connectivity, while agricultural sensors have no harsh requirements towards high network speeds (OECD, 2019⁴). Additionally, the characters of IoT devices, notably Internet Protocol (IP) based and platform-agnostic, also bring challenges to assess their implications. Besides, the measurement of cloud broadband quality and cloud computing services need building partnerships with the private sector to exploit useful indicators, such as the Akamai content delivery network, Netflix streaming video service, and STEAM online gaming services (OECD, 2019⁴).

Measuring Electronic Skills

The growth of online workers and the increasing need for electronic skills lead to the emergence of skills statistics. There are four relevant areas in e-skills: job tasks surveys, skills assessments, expert and science-based technology evaluations and online job vacancies. The US Occupational Information Network (O*NET), the UK Employer Skills Survey, the OECD Programme for the International Assessment of Adult Competencies (PIAAC) and the OECD Programme for International Student Assessment (PISA) are good examples. Besides, alternative large datasets such as JP Morgan Chase Institute, and web-scraping could give useful information about platform-mediated workers (OECD, 2019⁴).

Measuring Security Risk and Individuals' Trust

International organizations have managed the coordination related to digital security risk and individuals' trust in online environments. For example, OECD has examined mechanisms to assist in building trust in peer platforms and conducted a survey on consumer trust focusing on their experiences in using PPMs. The OECD has also introduced projects to consolidate privacy and data protection, improving the comparability of data breach notification (OECD, 2019⁴).

Measuring Cross-Border Data Flows

Countries have designated national authorities responsible for data and privacy protection which verifies that other countries have principles that are adequate or equivalent to the protections afforded under domestic privacy rules. For example, Article 45 of the EU GDPR allows flows of personal data from the EU to third-party countries that have been deemed adequate, such as Israel and New Zealand. Other measures include model contracts, binding corporate rules for multinationals, and certification mechanisms to enable cross-border data flows along with enforceable protections for individuals whose data are transferred. One example of the latter mechanism is the US-EU Privacy Shield, which enables participating companies to transfer data between the two economic

areas after making an enforceable commitment to comply with a set of principles aligned with EU data protection requirements.

Cross-border cooperation can be increased through participation in discussions such as the Global Privacy Enforcement Network, which enables information sharing and co-operation and has also led to some joint initiatives, or bilateral cooperation between privacy enforcement authorities.

7. Conclusion and Recommendations

Digital innovations will bring wide-ranging benefits and structural changes in the world economy. According to the 2017 Information Economy Report by United Nations Conference on Trade and Development (UNCTAD), global production of information and communications technology (ICT) goods and services now accounts for approximately 6.5% of global GDP, while worldwide e-commerce sales reached \$25.3 trillion in 2015. Although the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS) offer relevant disciplines for many aspects of digital trade, they do not offer guidance for many new issues in digital trade, in regard to market access, cross-border data flows, data privacy and security, electronic government, etc. As summarized in Appendix 2, TPRs of leading digital economies, such as the EU, US, China, Canada, are more comprehensive than e-commerce related issues covered in other TPRs.

In this rapidly changing context, this study aimed to provide a comprehensive view of e-commerce issues in country-specific measures, provisions in multilateral co-operations, policy barriers, and implications in trade statistics. Its goal was to explore how future TPRs might offer more systematic coverage of these issues. It focused especially on current regional trade agreements (RTAs), which offer a range of model policy measures that provide useful information for assessing country policies in TPRs. However, as noted at the outset, this comprehensive exercise has produced a very full list of topics that would have to be covered only selectively in any given TPR. While the importance of digital trade is growing rapidly, this area still accounts for only a fraction of a country's trade environment. Further refinement and experience with TPRs could narrow this checklist and, even then, differences among countries would justify substantial differences in the coverage of digital trade issues across TPRs.

The analysis examined ten broad nation-specific and international coordination measures in e-commerce, including: (1) infrastructure and human capital investment; (2) goods and services; (3) market access; (4) cross-border transfer of information; (5) data privacy and cybersecurity; (6) consumer protection; (7) electronic authentication and paperless trading; (8) competition policy; (9) intellectual property related policy and; (10) MSMEs related policy. Legislations and multilateral agreements have not fully approached advanced technologies, while legislations regarding consumer protection, data privacy, e-transactions and cybercrime in LDCs lagged far behind. Policy barriers to digital trade are more frequent when local governments impose restrictions on cross-border transfer of information, or differentiate between foreign digital services and local firms, including data localization, limitations on cloud computing and online services.

Considering the short-term and long-term challenges faced by governments, the dynamic progress of digital technology, and rapid changes in related applications such as digital government and social impacts, countries can be expected to pay increasing attention to relevant policy measures. Moreover, influences from the COVID-19 pandemic will only encourage households, businesses and governments to exploit the power of digital innovation in most spheres of economic activity.

In conclusion, the authors believe that future TPRs should:

- Substantially increase their coverage of the environment of e-commerce and related policy issues, including especially policies that affect cross-border transactions.
- Ideally include a separate section for e-commerce to provide extensive, coherent coverage of digital trade issues, especially for digitally advanced countries.
- Review a detailed and comprehensive list of e-commerce topics and selectively address the most important among them. These decisions should consider the dynamic nature of digital trade regulations, including rules agreed in RTAs covering issues such as market access, cross-border data flows, data privacy, consumer protection, and electronic authentication.
- Provide information to researchers and policy makers for understanding how regulations of digital trade affect trade and economic welfare in leading economies and LDCs, and between countries participating in different RTAs.

Therefore, the comprehensive coverage of digital trade and e-commerce in a separate section ideally for digitally advanced economies will allow other research teams within WTO to conduct longer-term studies and in some cases perform cross-country analysis which is beyond the scope of TPRs.

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Appendix 1. Digital Economy Policy Measures Definition

Digital Trade Tools and Policy Measures	
Infrastructure and human capital investment	
Information and communication technology	Information and communication technology (ICT) policy measures mainly refer to (1). infrastructure development, including fixed broadband penetration and mobile broadband penetration, trade logistics, tracking systems, and payment systems; (2). investment incentives and barriers, such as foreign direct investment (FDI) for ICT.
Skill investment	Skill investment mainly refers to human capital investment on electronic skills. Many governments invest in human capital for training and developing digital technology-related skills via public expenditure on active labour market policies, placement and related services, and start-up incentives.
Goods and services	
Goods and services (distribution, financial, professional and entertainment) policies refer to measures taken for goods and services traded via international e-commerce.	
Trade barriers	Restrictions and barriers on goods and services have a huge impact on the development and performance of the digital industry, including (1). the protection of local industries, such as online platforms; (2). performance requirements; (3). limitations on downloading and streaming; (4). and restrictions on online advertising, etc.
Non-tariff measures and supporting measures	Non-tariff measures relate to trade finance and tax-based export incentives, while liberalizing measures relate to internal taxation of imports and import licensing requirements.
Taxation	Taxation on e-commerce often relates to non-physical presence and multiple taxes.
Market access	
Market access refers to business friendly policies that maintain an open environment for e-commerce related activities, as well as allow both foreign and domestic firms to compete on an equal ground.	
Cross-border transfer of information	

Cross-border transfer of information policy measures relate to international cooperation and data localization. Countries may foster a vibrant environment for e-commerce through RTAs. Data localization policies involve restrictions on the ability of firms to transmit data on domestic users to foreign countries, which may increase the cost of foreign companies wanting to do business and impact trade.

Data privacy and cybersecurity

Data privacy	Data privacy policy measures include (1). exemptions, such as the application to small businesses or to small datasets, or specific sectors such as health and credit, or based on the subject and the source of the data; (2). personal data protection against the abuse of private information via the Internet and/or community websites.
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Cybersecurity standards	Cybersecurity standards and requirements refer to foreign participation limitation, national security standards, security testing and certification.
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Consumer protection

Online consumer protection policy measures focus on fraudulent and deceptive online activities, unsolicited commercial electronic messages, and online advertisements.

Electronic authentication and paperless trading

Electronic authentication	Legislations related to electronic authentication aim to promote the growth of e-commerce by recognizing the legal enforceability of electronic records and signatures and ensuring the security of electronic transactions.
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Paperless trading	Paperless trading legislation refers to the electronic availability and acceptability, as well as the legal equivalence of electronic form of trade administration documents.
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Competition policy

Competition policy refers to addressing perceived excesses of market power and/or to ensure a level playing field for smaller firms by governments and regulatory authorities, and has a close relationship with e-commerce giants.

Intellectual property related policy

IP-related policy measures mainly relate to online IP infringement. Attention also exists in the relationship between trademarks and internet domain names.

MSMEs related policy

MSMEs related policy measures refer to government advisory services and facilitation for private sector and MSMEs to encourage the adoption of digital technologies, as well as codes of conduct, model contracts, guidelines, and enforcement mechanism.

Appendix 2. Digital Economy Policy Measures in TPRs

Infrastructure and human capital investment	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Information and communication technology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skill Investment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade policy measures on services and goods	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Trade barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-tariff measures and supporting measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taxation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Market access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross-border data flows	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru

Digital Economy Issues in the WTO's Trade Policy Reviews

Data localisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data privacy and cybersecurity	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Data privacy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cybersecurity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Consumer protection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic authentication and paperless trading	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Electronic authentication	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
paperless trading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Competition Policy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
Intellectual property	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	U.S.	Canada	EU	China	Trinidad and Tobago	Australia	Peru
MSMEs specific measures							
Government advisory services and facilitation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 3. RTA Examples

RTA Name	Date of entry into force	Signatories
ASEAN - Australia - New Zealand	1/1/2010	Australia; New Zealand; Brunei Darussalam; Myanmar; Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Philippines; Singapore; Viet Nam; Thailand
Australia - Chile	3/6/2009	Australia; Chile
Australia - China	12/20/2015	Australia; China
Canada - Costa Rica	11/1/2002	Canada; Costa Rica
Canada - Israel	1/1/1997	Canada; Israel
Canada - Jordan	10/1/2012	Canada; Jordan
Canada - Korea, Republic of	1/1/2015	Canada; Korea, Republic of
Canada - Panama	4/1/2013	Canada; Panama

Central European Free Trade Agreement (CEFTA) 2006	5/1/2007	Albania; Bosnia and Herzegovina; Moldova, Republic of; North Macedonia; UNMIK/Kosovo; Serbia; Montenegro
Chile - Thailand	11/5/2015	Chile; Thailand
China - Georgia	1/1/2018	China; Georgia
China - Hong Kong, China	6/29/2003	China; Hong Kong, China
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	12/30/2018	Australia; Brunei Darussalam; Canada; Chile; Japan; Malaysia; Mexico; New Zealand; Peru; Singapore; Viet Nam
Dominican Republic - Central America - United States Free Trade Agreement (CAFTA-DR)	3/1/2006	Costa Rica; Dominican Republic; El Salvador; Guatemala; Honduras; Nicaragua; United States of America
EFTA - Peru	7/1/2011	Peru; Iceland; Liechtenstein; Norway; Switzerland
EU - Canada	9/21/2017	Canada; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
EU - Central America	8/1/2013	Costa Rica; El Salvador; Guatemala; Honduras; Nicaragua; Panama; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
EU - Chile	01-Feb-2003(G) / 01-Mar-2005(S)	Chile; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Eastern and Southern Africa States Interim EPA	5/14/2012	Madagascar; Mauritius; Seychelles; Zimbabwe; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
EU - Ghana	12/15/2016	Ghana; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
EU - Japan	2/1/2019	Japan; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
EU - Korea, Republic of	7/1/2011	Korea, Republic of; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
EU - Ukraine	4/23/2014	Ukraine; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech

Eurasian Economic Union (EAEU) - Viet Nam	10/5/2016	Viet Nam; Armenia; Belarus; Kazakhstan; Kyrgyz Republic; Russian Federation
European Economic Area (EEA)	1/1/1994	Iceland; Liechtenstein; Norway; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech
Gulf Cooperation Council (GCC) - Singapore	9/1/2013	Singapore; Bahrain, Kingdom of; Kuwait, the State of; Oman; Qatar; Saudi Arabia, Kingdom of; United Arab Emirates
Hong Kong, China - Australia	1/17/2020	Australia; Hong Kong, China
India - Singapore	8/1/2005	India; Singapore
Japan - Australia	1/15/2015	Australia; Japan
Japan - Philippines	12/11/2008	Japan; Philippines
Japan - Switzerland	9/1/2009	Japan; Switzerland
Jordan - Singapore	8/22/2005	Jordan; Singapore
Korea, Republic of - United States	3/15/2012	Korea, Republic of; United States of America
Mexico - Central America	9/1/2012	Costa Rica; El Salvador; Guatemala; Honduras; Mexico; Nicaragua
New Zealand - Chinese Taipei	12/1/2013	Chinese Taipei; New Zealand
New Zealand - Singapore	1/1/2001	New Zealand; Singapore
Pacific Alliance	5/1/2016	Chile; Colombia; Mexico; Peru
Peru - Korea, Republic of	8/1/2011	Korea, Republic of; Peru
Singapore - Chinese Taipei	4/19/2014	Chinese Taipei; Singapore
Turkey - Malaysia	8/1/2015	Malaysia; Turkey
United States - Australia	1/1/2005	Australia; United States of America

United States - Chile	1/1/2004	Chile; United States of America
United States - Oman	1/1/2009	Oman; United States of America
United States - Peru	2/1/2009	Peru; United States of America
United States - Singapore	1/1/2004	Singapore; United States of America