

A Digital Trade Strategy for Canada



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Executive Summary

The Internet's arrival in everyday life in the late 1990s has led to the rapid development of electronic commerce or digital trade over the past two and half decades. Some goods and services that used to be of a physical nature can now be consumed in digital form through online purchases, rentals or subscriptions. Payment for goods and services has also become mostly digital in nature.

The economy's digitalization increases competition, innovation and productivity. Digital trade is an important part of that equation. It is even more so internationally, since digitalization makes international trade easier by expanding market reach, lowering trade costs and facilitating supply chain adaptation. However, Canada remains a marginal player when it comes to international digital trade.

Based on the data available, Canada's digital trade performance is below its economy's capacity and remains too focused on the US. Canada's digital competitiveness provides a strong basis for international digital trade. However, Canadian businesses, especially small- and medium-sized enterprises (SMEs), need to invest more in information and communication technologies (ICTs), notably more advanced ones. Ultimately, it needs to be easier for Canadian enterprises to do business in the digital sphere and take that business abroad. Trade agreements and trade promotion programs can help Canada's international digital trade, but they are not enough.

Canadian businesses and governments must therefore expand their current efforts to digitalize Canada's economy and join the world's digital trade leaders. To do so, they need a clear and coherent digital trade strategy, which rests on three pillars:

- (1) reliable and inclusive access to high-quality digital infrastructure at competitive prices internationally;
- (2) enhanced digital capacity through the adoption of well-established and advanced digital technologies, especially for SMEs, and the development of digital skills among Canadian workers, managers and entrepreneurs; and
- (3) the reduction, if not elimination, of non-tariff barriers to international digital trade.

Recommendations

1. Create a Canadian Digital Policy Council to take charge of the digital trade strategy for Canada.
2. Digital trade strategy's pillar #1: Extend and upgrade Canada's digital infrastructure.
 - a. Offer a flexible mix of regulatory and funding instruments used to address the specific needs and capabilities of Canada's varied local or regional communities to ensure that Canadians and Canadian businesses have access to affordable, fast, reliable and secure Internet.
 - b. Upgrade Canada's and the world's digital payments infrastructure, so that paying for digitally ordered goods and services is simple, affordable, reliable and secure for buyers and sellers.
 - c. Ensure effective regional and international cooperation on sharing information and developing common technical and regulatory standards for telecommunication and payment networks to operate efficiently, reliably and securely across borders.
 - d. Facilitate international trade in telecommunications and financial services through the effective implementation of Canada's existing trade agreements.
3. Digital trade strategy's pillar #2: Enhance Canada's digital capacity.
 - a. Invest in digital technology adoption as well as digital skills development.
 - b. Provide labour market flexibility, competitive pressures and risk capital to support the adoption of digital technology.
 - c. Integrate multiple disciplines that include both technical and non-technical knowledge in devising programs aimed at developing Canadians' digital skills.
 - d. Expand the Canada Digital Adoption Program to include advice and training for SMEs on finding customers, delivering products and services to them, and, finally, getting paid in the digital economy, especially when undertaking international digital trade where digital regulatory and cultural environments vary.
 - e. Provide advice, training and financial support to SMEs in protecting their intellectual property in the digital economy, possibly as part of an expanded Canada Digital Adoption Program.
 - f. Provide advice, training and financial support to SMEs in protecting their digital infrastructure and operations from cyber threats, possibly as part of an expanded Canada Digital Adoption Program.

- g. Make Canada's Trade Commissioner Service a key partner in delivering the Canada Digital Adoption Program.
4. Digital trade strategy's pillar #3: Remove barriers to international digital trade.
- a. Ensure that Canada's data protection laws and regulations remain "adequate" by the European Union's *General Data Protection Regulation (GDPR)* standards so that Canadian and European businesses can maintain their international digital trade activities across the Atlantic. For this purpose, it is imperative that Bill C-27 becomes law in the fall of 2022, because the European Commission is expected to decide on whether it renews or not Canada's adequacy with the *GDPR* by the end of 2022.
 - b. Work closely with the U.S. and Mexico to implement chapter 19 on digital trade of the *Canada-United States-Mexico Agreement (CUSMA)*. Set up a formal North American Digital Trade Council with government and business representatives from all three *CUSMA* parties.
 - c. Ensure that the taxation of digital activities, domestically and internationally, does not impede digital trade.
 - d. Ensure that Canada's application to join the *Digital Economy Partnership Agreement (DEPA)* is successful.
 - e. Continue playing an active role in the negotiations of a plurilateral agreement on "trade-related aspects of electronic commerce" at the World Trade Organization.
 - f. Actively participate in the Global Cross-Border Privacy Rules Forum's activities, including towards its interoperability with the EU's *GDPR*.
 - g. Take a leadership role in the creation of an International Digital Standards Board responsible for ensuring a single international digital trade area.

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Introduction

The Internet's arrival in everyday life in the late 1990s has led to the rapid development of electronic commerce or digital trade over the past two and half decades.¹ Digital trade began with advertising on websites (targeting the now infamous “eyeballs”) and was quickly followed by the “dot.com” bubble where people could buy all sorts of “stuff” online. The dot.com bubble might have burst around the turn of the century, but buying goods and services online remained and grew steadily. Digital trade reached new heights during the Covid-19 pandemic as lockdowns forced conventional retailers to close and people to stay home.²

In 2019, about 1.5 billion people made purchases online around the world.³ Some goods and services that used to be of a physical nature (e.g., art, baseball or hockey cards, books, newspapers, magazines, CDs, DVDs or videogames) can now be consumed in digital form through online purchases, rentals or subscriptions. Payment for goods and services has also become mostly digital in nature. Even in the metaverse, defined as “shared virtual world environments which people can access via the Internet”,⁴ digital trade plays a crucial role.⁵

Business-to-business transactions dominate digital trade

Most digital trade within and across national borders takes place between businesses, compared to business-to-consumer (B2C) or business-to-government (B2G) transactions.⁶ According to the United Nations Conference on Trade and Development (UNCTAD), business-to-business (B2B) transactions accounted for close to 82 percent of digital trade worldwide, which was estimated to be US\$26.7 trillion in 2019 (see Table A1 in Appendix).

The United States, Japan, China and Korea were the dominant markets for B2B digital trade in 2019, accounting for close to 84 percent of B2B sales worldwide (see

¹ There is no agreed definition of e-commerce or digital trade. The terms e-commerce and digital trade are often used interchangeably. For this report's purposes, we use the term “digital trade” to mean “digitally enabled transactions in trade in goods and services which can be either digitally or physically delivered and which involve consumers, firms and governments” (López González and Jouanjean 2017, 4). The OECD et al. (2020) define digital trade as “all trade that is digitally ordered and/or digitally delivered”. Digitally ordered trade corresponds to the “sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders” while digitally delivered trade represents “transactions that are delivered remotely in an electronic format, using computer networks specifically designed for the purpose” (OECD et al. 2020, 11). Digital trade can take place within borders as well as across them.

² UNCTAD (2021a).

³ *ibid*, 6.

⁴ Reuters (2021).

⁵ Riedl (2021).

⁶ Measuring digital trade adequately is a challenge and “there is no consensus on the precise size of digital trade or what exactly it constitutes” (Nair 2021, 6). For instance, the OECD, the WTO and the IMF published the first version of their “Handbook on Measuring Digital Trade” only in 2020 (OECD et al. 2020). In the executive summary, they write: “Digitalisation is now everywhere but, to date, it remains largely invisible in our official statistics of trade” (10). For a good explanation of this “invisibility”, see Nair (2021, 6-7).

Table A1 in Appendix). Canada stood outside the top ten markets in terms of B2B digital trade in 2019, behind smaller economies such as Australia and Spain, which implies that its global market share was no more than one percent (ibid).

In terms of B2C digital trade, China and the U.S. lead the world, together accounting for a little less than 60 percent of worldwide sales in 2019 (see Table A2 in Appendix). To compare, Canada's market share was only one percent, good for tenth place globally (ibid).

Most digital trade happens within national borders

Most digital trade activity takes place within national borders. UNCTAD estimates that only nine percent of global B2C digital trade sales in 2019 were international in nature, representing an estimated US\$440 billion.⁷

International digital trade applies more to services than to goods

In 2016, the McKinsey Global Institute estimated that only 12 percent of all goods traded across national borders were the result of digital trade.⁸ With respect to services, however, the percentage is much higher. UNCTAD estimates that the exports of digitally deliverable services (without any differentiation between B2C, B2B or B2G) were US\$3.2 trillion worldwide in 2020, which represented more than 60 percent of all services traded across borders worldwide.⁹ In 2005, this share stood at 45 percent.¹⁰ This is significant given that services have been the “most dynamic segment of world trade” since the mid-1990s.¹¹ The U.S., Ireland, the United Kingdom (U.K.), Germany and China are the top-5 traders of digitally deliverable services (see Table A3 in Appendix).¹²

Physical and digital trade are often complementary

With the economy's increasing digitalization, goods and services in physical and digital forms become more and more intertwined.¹³ One can buy a videogame

⁷ UNCTAD (2021a, 5). No data are available for cross-border B2B digital trade.

⁸ Manyika et al. (2016).

⁹ UNCTAD (2021c, 6). According to UNCTAD, digitally “deliverable” services are estimated by aggregating insurance and pension services, financial services, charges for the use of intellectual property, telecommunications, computer and information services, other business services and audiovisual and related services that are deliverable in electronic form. As such, they may differ from digitally “delivered” services, which statistical agencies try to measure directly by surveying businesses on the actual value of the services that they have exported and imported digitally. For a discussion on the different ways that statistical agencies are using to measure digital trade, see Nair (2021, 19-21).

¹⁰ UNCTAD (2021b, 10).

¹¹ WTO (2015).

¹² UNCTAD (2021c) does not provide data for Canada.

¹³ According to the OECD-WTO-IMF framework for measuring digital trade, goods cannot be delivered in digital form, only services can: “by this definition, digital equivalents of goods—such as e-books or digital software—would be considered as the delivery of a licence to use the product and not physical ownership of the product” (Nair 2021, 14). The logic is that “digital goods” such as books, movies, songs or software that are downloaded (after being purchased) onto an electronic device can usually not be transferred (for free or a price) to someone else (unless it is done illegally). The advent of so-called “non-fungible tokens” (NFTs), where a digital good has a specific identity and associated ownership registered on a blockchain, is likely to change this definitional approach. This is because digital goods registered as NFTs can have their ownership transferred to someone else. In fact, this is how a lot of firms intend to make money from the metaverse.

console (a physical good) and pay an online subscription to play the games (a digital service). Another example is buying a culinary robot (the physical good) with access to an online application to download recipes specific to the appliance (the digital service). And let's not forget using digital trading platforms such as those offered by Alibaba, Amazon, eBay or Shopify to sell physical goods around the world. Even 3D printing, which was expected to reduce trade in physical goods because it is cheaper to buy the digital blueprint of a physical good and print it locally than import the same good from far away, has so far increased the export and import of 3D-printed goods.¹⁴

Digitalization creates new trading opportunities, especially abroad

The above-mentioned examples underscore digitalization's importance for "diversifying the scope and geographic reach of trading opportunities for [...] both established businesses and new enterprises".¹⁵ In addition to expanding market reach, digitalization lowers trade costs and facilitates supply chain adaptation: "digital technologies may decrease the relevance of distance, be it geographical, linguistic or regulatory, and that they also facilitate searches for products, introduce mechanisms to verify quality and reputation, and simplify cross-border transactions".¹⁶ Digitalization also means more competition since consumers, businesses and governments can more easily get goods and services beyond locally provided options.¹⁷ Surely, greater competition from abroad can lead domestic firms to boost their innovation and productivity; however, they also need access to external markets if they are to compete effectively.

Canada needs a clear and coherent digital trade strategy

It is undeniable that digital trade represents an opportunity for Canadian businesses. This is particularly true internationally, where Canada remains a marginal player. How does Canada join the world's digital trade leaders? It needs a clear and coherent strategy. This report's purpose is to offer such a strategy, focusing on international digital trade. By recognizing what Canada has achieved so far and identifying the challenges that need to be addressed, the report offers a set of recommendations to increase Canada's international digital trade significantly in the short and long term.

¹⁴ Andrenelli and López González (2021).

¹⁵ UNCTAD (2021b, 10).

¹⁶ WTO (2018, 64).

¹⁷ Goldfarb (2011).

Canada and Digital Trade: Where Do We Stand?

Canada appears well positioned to take advantage of digital trade opportunities

According to the IMD World Competitiveness Center's World Digital Competitiveness Ranking 2021, Canada ranked 13th with a score of 87.3 while the U.S. was first with a score of 100; however, Canada was in 8th place in 2018, its position having gradually declined since.¹⁸ Digital competitiveness is defined as the ability to “adopt and explore new digital technologies that transform government practices, business models, and society in general”.¹⁹ The Digital Riser Report 2021, for its part, considered Canada as its “top riser” among G7 countries between 2018 and 2020 in terms of improved digital competitiveness and seventh among G20 countries.²⁰ Top digital risers implement “bold public-private partnership to foster innovation and entrepreneurship”.²¹

Canadian adoption of advanced ICTs is low

In 2019, 80 percent of Canadian businesses used at least one type of information and communication technology (ICT).²² The most used ICTs were company-wide computer networks, industry and non-industry-specific business software and cloud computing (see Figure 1). More advanced types of ICTs, such as artificial intelligence (AI), radio-frequency identification tags, 3D printing, advanced robotics and blockchain are used by less than three percent of businesses (see Figure 1). Even more common, well-established ICTs such as customer relationship management software, electronic data interchange on the Internet and enterprise resource planning software are only used by 16.4 percent, 11.1 percent and 5.9 percent of businesses, respectively (see Figure 1).

¹⁸ The IMD's World Digital Competitiveness Ranking 2021 considers three factors to establish its ranking: knowledge, technology and future readiness (IMD 2021). Within the knowledge factor, the report considers the following sub-factors: talent, training and education, and scientific concentration. The technology sub-factors are regulatory framework, capital and technological framework. As for the future readiness sub-factors, the report analyzes adaptive attitudes, business agility and IT integration.

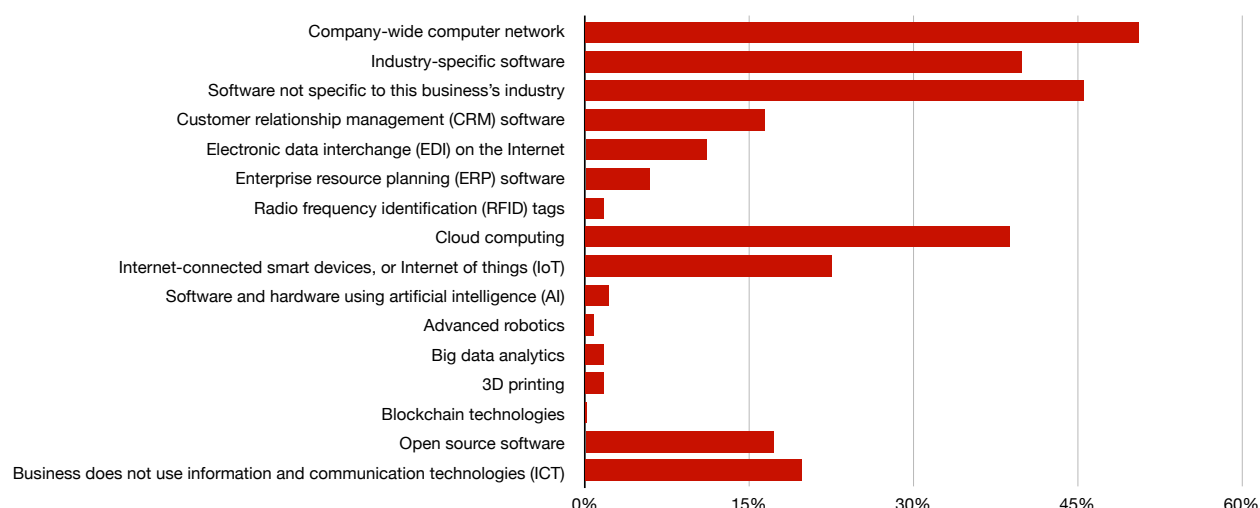
¹⁹ IMD (2021, 19).

²⁰ Meissner et al. (2021).

²¹ Meissner (2021).

²² Statistics Canada (2020a).

Figure 1: Information and communication technologies used by businesses, Canada, 2019



Source: Statistics Canada (2020a)

ICTs are key to driving digital trade

In its 2018 annual report on world trade, the World Trade Organization (WTO) demonstrates that ICTs are important for growing international trade.²³ First, ICTs reduce trade costs by, for instance, making it easier to search for products and services, verify their quality and reputation, optimize their transportation (telematics, robotization and AI), and pay for them.²⁴ Second, ICTs create new business opportunities, especially in services “because of the greater ease of supplying services digitally, but also because new ways of delivering services emerge and replace trade in goods (like in the case of music streaming versus trade of CDs), and because international production networks increase the services content of manufacturing goods”.²⁵ Finally, ICTs make it easier for SMEs to do business internationally because distance (geographic, linguistic, regulatory) matters less.

²³ WTO (2018).

²⁴ *ibid*, 64, 66.

²⁵ *ibid*, 116.

Low ICT adoption impacts Canada's digital trade

Low ICT adoption would explain, in part, why Canada is not among the top-ten most digitally competitive economies. In turn, this would explain why Canada does not rank in the top-ten economies for digital trade.

According to the IMD World Competitiveness Center, Canada's digital competitiveness is negatively affected by the following challenges:²⁶

- Shortage of skilled talent, including in technology, cleantech, digital health, advanced manufacturing and fintech;
- Scaling up SMEs to develop, commercialize and export intellectual property (IP);
- Lack of regulatory clarity to attract foreign direct investment in high-tech areas such as AI, digital health and fintech;
- Access to high-quality digital infrastructure at reasonable cost in suburban and rural areas; and,
- Building local supply chains and leveraging trade agreements to build international supply chains.

These challenges are in line with those identified by Robert Asselin and Sean Speer in their “A New North Star” report (2019) arguing for Canada's economy to be orientated towards intangibles.²⁷ They also reflect the broader set of issues relating to Canada's overall economic competitiveness.²⁸

Addressing these challenges would not only make it easier for Canadian firms to engage in digital trade at home and abroad, but it would also increase the economy's productivity. According to a study conducted by Statistics Canada, Canadian labour productivity grew three times faster in “digitally intensive sectors” than in non-digitally intensive sectors between 2002 and 2019.²⁹ Greater productivity means more competitiveness, which in turn means higher levels of international trade.

²⁶ IMD (2021).

²⁷ Asselin and Speer (2019).

²⁸ Deloitte and Business Council of Canada (2019).

²⁹ Liu (2021).

Measuring the size of Canada's digital trade is a challenge

According to Swapna Nair from the Conference Board of Canada, “Canada is still in the early stages of developing its official statistics around digital trade”.³⁰

Nevertheless, Statistics Canada is making progress in measuring Canada's digital trade.³¹ It measures Canada's digital trade within and across national borders from two perspectives: enterprise and consumer. The agency also distinguishes between digitally ordered trade (goods and services) and digitally delivered trade (services only).³² To get as complete a picture of Canada's digital trade as possible, it is therefore necessary to pull data from multiple sources produced by Statistics Canada and UNCTAD (see Table 1 for a summary).

Canada's digital trade from an enterprise perspective

From an enterprise perspective, Statistics Canada estimates that, for 2019, there was \$336 billion worth of digitally ordered goods and services supplied in Canada,³³ which represented 6.8 percent of the total supply of goods and services.³⁴ Seventy-one percent of digitally ordered goods and services were sourced directly from the supplier, while 27 percent came from domestic retailers and wholesalers. Digital intermediary platforms accounted for the remaining two percent. The most important sectors in terms of revenues derived from digitally ordered goods and services were wholesale trade (\$85 billion), transportation and warehousing (\$60 billion), manufacturing (\$38 billion) and retail trade (\$22 billion).³⁵

As for digitally delivered services, they were worth \$116 billion in 2019, which accounted for 2.3 percent of total goods and services supplied in Canada.³⁶ Canadian multinational enterprises (MNEs) reported a higher propensity to digitally deliver their services (88 percent) than foreign MNEs (83 percent) and purely domestic businesses (68 percent).³⁷

One quarter of Canadian businesses with five or more employees had at least some “e-commerce sales” in 2019, with 39 percent of large businesses, 34 percent of medium-sized businesses and 23 percent of small businesses reporting digital trade.³⁸ Canada's performance is in line with the OECD's averages: 21 percent and 44 percent of small and large businesses, respectively, had online sales in 2017.³⁹ The portion of Canadian businesses with 50 percent or more of their total sales occurring

³⁰ Nair (2021, 17).

³¹ For an excellent discussion of the current limitations to Statistics Canada's attempts to measure digital trade, see Nair (2021, 18-21). It is important to note that Canada is not the only jurisdiction facing challenges in measuring digital trade, so do the European Union (E.U.), the U.K. and the U.S. (see Nair 2021, 24-26).

³² Nair (2021, 17).

³³ Total supply includes goods and services produced in Canada as well as abroad.

³⁴ Statistics Canada (2021d).

³⁵ Statistics Canada (2020a).

³⁶ Statistics Canada (2021d). Of this amount of digitally delivered supply, 65 percent was digitally ordered.

³⁷ Statistics Canada (2020b).

³⁸ Statistics Canada (2020a). Statistics Canada uses the term “e-commerce sales” to refer to orders received over the Internet that include both B2C and B2B transactions.

³⁹ OECD (2021, Figure 3.2). No percentage is available for medium-sized enterprises.

online was 6.8 percent in 2019, but it increased to 10 percent in 2020.⁴⁰ In the finance and insurance sector, that proportion was 21.3 percent in 2020, an increase of 9.5 percentage points from 2019.⁴¹ For the retail sector, only 5.9 percent of total retail sales in Canada in 2020 took place online; however, the percentage was up from 3.5 percent in 2019.⁴²

Canada's digital trade from a consumer perspective

From a consumer perspective, 82 percent of Canadians shopped online in 2020, compared to 73 percent in 2018.⁴³ In terms of value, online spending was \$84.4 billion in 2020, up from \$57.4 billion in 2018. That spending went primarily to goods with a total average amount spent of \$2,336 per online shopper in 2020, compared to \$1,165 in 2018. For services, the average total spending per online shopper in 2020 was \$568, up from \$346 in 2018.⁴⁴

Canada's international digital trade

As is the case internationally, most of Canada's digital trade takes place within the country's national borders. Only 22 percent of Canadian businesses with online sales in 2019 had customers in the U.S., while 11 percent had customers outside Canada and the U.S.⁴⁵

In terms of digitally ordered goods and services, Statistics Canada reports that imports amounted to \$52 billion in 2019, which represented 7.2 percent of total imports into Canada.⁴⁶ In terms of digitally deliverable services, UNCTAD estimates that Canada's exports and imports reached US\$59 billion each in 2019.⁴⁷ According to a survey conducted by Statistics Canada in 2019, more than 80 percent of surveyed Canadian businesses that exported digitally delivered services reported the U.S. as their main trading partner while more than half indicated exporting only to one trading partner, most often the U.S. Even the digitally delivered services exported by foreign-owned MNEs operating in Canada were primarily destined for the U.S. rather than their own market.⁴⁸ Therefore, digitalization does not seem to have diminished the pull of gravity coming from the U.S. economy.

For those Canadian businesses that reported not having made online sales in 2019, 74 percent indicated that the reason for not engaging in digital trade was that their goods and/or services were not suitable for sales over the Internet. Another 20

⁴⁰ Statistics Canada (2021b).

⁴¹ *ibid.*

⁴² Statistics Canada (2021a).

⁴³ Statistics Canada (2021c).

⁴⁴ *ibid.*

⁴⁵ Statistics Canada (2020a).

⁴⁶ Statistics Canada (2021d).

⁴⁷ UNCTADStat (<https://unctadstat.unctad.org/wds/TableView/tableView.aspx?ReportId=158358>). See footnote 11 for an explanation of the difference between digitally "deliverable" and digitally "delivered". Statistics Canada measured digitally delivered services' exports and imports – directly surveying a certain portion of Canadian businesses active in the relevant service sectors – for the first time in 2019: exports were estimated at \$16.4 billion while imports were estimated at \$13.2 billion (Statistics Canada 2020b; 2021d).

⁴⁸ Statistics Canada (2020b).

percent indicated that “their employees lacked the skills, training or experience required to conduct sales over the Internet (11%) or that high set-up costs prevented them from conducting sales over the Internet (9%)”.⁴⁹

Table 1: Summary of Canada’s digital trade statistics

	Total Value	%	Imports	Exports
Digitally ordered goods and services	\$336 billion (2019)	6.8% of total supply (2019)	\$51.7 billion (2019)	n/a
Digitally delivered services	\$116 billion (2019)	2.3% of total supply (2019)	\$13.2 billion (2019)	\$16.4 billion (2019)
Digitally deliverable services	-	-	US\$58.6 billion (2019)	US\$59.0 billion (2019)
Online (retail) spending by Canadians	\$84.4 billion (2020)	5.9% of total retail sales (2019)	n/a	-

Sources: Statistics Canada, multiple publications; UNCTADStat (see text above)

Barriers to international digital trade are not different

Barriers to international digital trade are no different than traditional trade barriers in that they take two main forms: tariff and non-tariff. Tariffs can apply to physical goods that are digitally ordered across borders,⁵⁰ unless the good is exempted from customs duties because it satisfies a free trade agreement’s (FTA) rules-of-origin requirements or the good’s value is below some *de minimis* threshold.⁵¹ Tariffs could also apply to “digital goods” such as songs, videos, movies or software when they are downloaded from the Internet. However, in 1998, WTO members agreed to a moratorium on imposing customs duties on electronic transmission.⁵² This moratorium has been in effect ever since, having been regularly renewed.⁵³ The moratorium has been incorporated into bilateral or plurilateral FTAs, such as Canada’s *Comprehensive Economic and Trade Agreement (CETA)* with the EU and the *Canada-United States-Mexico Agreement (CUSMA)*.

⁴⁹ Statistics Canada (2020a).

⁵⁰ The WTO defines tariffs as “customs duties on merchandise imports”, which “give a price advantage to locally-produced goods over similar goods which are imported, and they raise revenues for governments” (https://www.wto.org/english/tratop_e/tariffs_e/tariffs_e.htm).

⁵¹ In addition to regular tariffs, special trade-defence custom duties can affect digital trade: anti-dumping duties, countervailing duties and safeguard measures (Ferracane et al. 2018).

⁵² WTO (1998).

⁵³ The moratorium was last extended in June 2022 at the WTO’s 12th Ministerial Conference (<https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:WT/MIN22/32.pdf&Open=True>). For an analysis of the Moratorium’s net benefits, see Andrenelli and López González (2019).

Non-tariff barriers (NTBs) are the main impediments to international digital trade.⁵⁴ Susan Aaronson lists the following NTBs to international digital trade: localization requirements (data storage, processing or other digital trade activities), other data flow restrictions (e.g., privacy protection), infringement of IP rights, filtering/blocking of websites or applications, cybersecurity (too little or too much), other national standards and conformity assessments (e.g., obligation to divulge source codes or other trade secrets).⁵⁵ To this list, one could add barriers to foreign technologies, preferential subsidies, discriminatory taxation, restrictions on foreign investment, local presence requirements and “buy local” requirements in public procurement contracts.⁵⁶

NTBs to international digital trade tend to hurt the economy

According to a study by Martina Ferracane and collaborators, “digital openness boosts productivity and investments in so-called knowledge-based intangibles such as research and development (R&D), design, (digital) training and data, which spurs growth in digital and non-digital sectors”.⁵⁷ In a study of Swedish enterprises from a wide range of sectors, it was found that the ability to move data across borders easily was crucial for the well-functioning of firms’ global value chains.⁵⁸ Another study found that restrictions on cross-border data flows are associated with lower imports of data-intensive services.⁵⁹ More generally, a one-point increase in a country’s data restrictiveness measure (based on OECD data) corresponds, over a five-year period, to a seven percent decrease in the volume of gross production that is traded, a 2.9 percent reduction in productivity, and 1.5 percent higher prices for goods and services in downstream industries.⁶⁰

Canada is open to international digital trade, but Canadian companies faces barriers abroad

Based on the various types of non-tariff barriers to international digital trade mentioned above, Martina Ferracane and her collaborators created a digital trade restrictiveness index for 64 countries.⁶¹ According to this index, Canada came in 37th place, with a score of 0.23 that put it just below the average. In comparison, New Zealand was found to be the most open in digital trade, coming in first place with a score of only 0.09, while China was last with a score of 0.70. The OECD has also produced a digital trade restrictiveness index but only for services.⁶² In this case, Canada is ranked first out of 74 countries. These results indicate that Canada is a relatively open place for foreigners to engage in international digital trade. However, this is less the case for Canadian firms that wish to engage in international digital

⁵⁴ Non-tariff barriers correspond to regulations or administrative measures that either prevent a good or a service from being internationally traded (imported or exported) or impose additional costs for a good or service to be traded internationally because of the need to satisfy a jurisdiction’s specific regulatory and/or administrative requirements.

⁵⁵ Aaronson (2019, Table 1).

⁵⁶ Ferracane et al. (2018); Goldfarb (2011).

⁵⁷ Ferracane et al. (2018, 4).

⁵⁸ Rentzhog (2015).

⁵⁹ van der Marel and Ferracane (2021).

⁶⁰ Cory and Dascoli (2021).

⁶¹ Ferracane et al. (2018).

⁶² https://stats.oecd.org/?datasetcode=STRI_DIGITAL.

trade, especially when it comes to digital services where businesses based in Canada face relatively higher restrictions when accessing foreign markets.⁶³ It is therefore important to put in place policies to support Canadian businesses in their international digital trade.

Canada supports international digital trade through trade agreements and trade promotion programs

Canada's approach to supporting international digital trade is mainly based on trade agreements and trade promotion programs.⁶⁴ As such, Canada is following in the U.S.' footsteps, whereby it has relied on trade agreements to support its international digital trade.⁶⁵

The federal government's Trade Commissioner Service (TCS) has embraced digital trade as a strategy for Canadian SMEs to sell their products or services abroad.⁶⁶ The TCS helps SMEs access international online retailers or marketplaces, build "global awareness of Canadian brands online" and navigate shipping and logistics for sending goods abroad. During the pandemic, the TCS has organized virtual trade missions across the world to showcase Canadian products and services, including for firms in the ITC sector.

Trade agreements are the second mechanism that Canada has adopted to support international digital trade (see Figure 2). The *CETA* was Canada's first trade agreement with a chapter on digital trade; however, it was very limited in scope.⁶⁷ *CETA*'s chapter 16 has only one article of substance (article 16.3), which prohibits the imposition of tariffs on electronic transmissions: "A Party shall not impose a customs duty, fee, or charge on a delivery transmitted by electronic means". Chapter 16 does not address any other potential barriers to trade identified above, thereby offering no improvement on the WTO's moratorium.

⁶³ In 2020, the U.K., the U.S., Mexico and Japan were ranked 8th, 9th, 10th and 11th with scores of 0.061, 0.061, 0.079 and 0.082, respectively, compared to Canada's score of 0. For their part, France, Italy and Germany were ranked 24th, 27th and 32nd with scores of 0.123, 0.126 and 0.144, respectively. India came in 61st place with an index score of 0.322 while China ranked 71st with a score of 0.488.

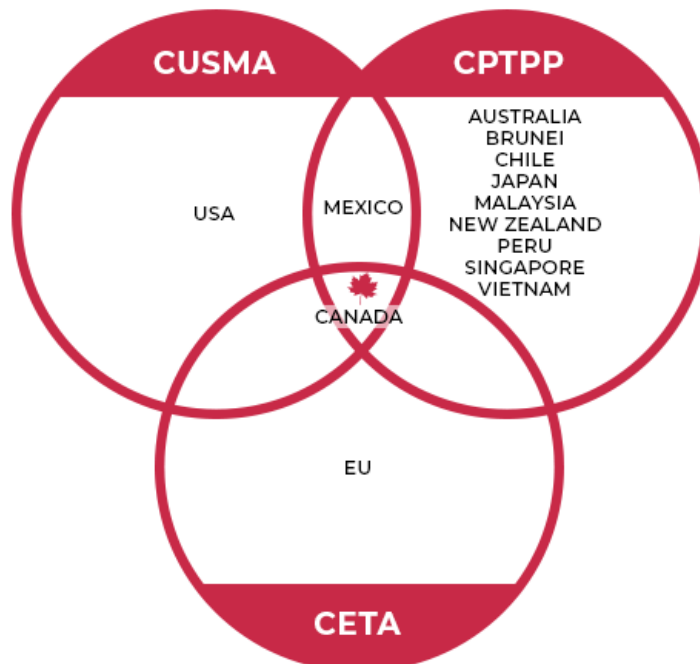
⁶⁴ In addition, Statistics Canada is collaborating with other statistical agencies and international organizations to develop comprehensive and accurate measures of international digital trade so that countries can assess their performance and the effectiveness of their policies (Statistics Canada 2020b, 19).

⁶⁵ Aaronson and Leblond (2018); Gao (2018).

⁶⁶ <https://www.tradecommissioner.gc.ca/guides/e-commerce-electronique.aspx?lang=eng>.

⁶⁷ <https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/text-texte/16.aspx?lang=eng>. For an analysis comparing the digital trade chapters in the *CETA* and the *Trans-Pacific Partnership* (now the *Comprehensive and Progressive Agreement on Trans-Pacific Partnership*), see Wolfe (2019).

Figure 2: Trade agreements governing Canada's international digital trade



EU regulation of personal data could impede Canada's international digital trade with the EU

There are no provisions on cross-border personal data flows in the *CETA* because they are governed by the E.U.'s data protection regime. Pursuant to this regime, the European Commission regularly conducts an “adequacy” assessment of Canada's privacy regime.⁶⁸ Canada's adequacy standing allows personal data for business purposes to flow freely from the E.U. to Canada. Personal information can also flow freely from Canada to the E.U. as long as firms based in Canada ensure that federal rules under the *Personal Information Protection and Electronic Documents Act* (*PIPEDA*) are respected even after personal information has left the country's shores.⁶⁹ The problem here is that the *PIPEDA*, which was passed in 2000, needs to be modernized in order to satisfy the E.U.'s latest data protection rules, the *General Data Protection Regulation* (*GDPR*),⁷⁰ which began applying in May 2018. The E.U.'s current adequacy decision vis-à-vis Canada is based on the legal regime that applied in the E.U. before the *GDPR*. According to privacy and data protection experts, the *PIPEDA* will not pass muster with the European Commission when it reviews its data protection adequacy decision for Canada (expected by the end of 2022 because it is the last year that it can do so according to the *GDPR*).⁷¹ In November 2020, the federal government introduced Bill C-11, *the Digital Charter Implementation Act*,

⁶⁸ https://ec.europa.eu/info/law/law-topic/data-protection/international-dimension-data-protection/adequacy-decisions_en.

⁶⁹ <https://www.priv.gc.ca/en/privacy-topics/privacy-laws-in-canada/the-personal-information-protection-and-electronic-documents-act-pipeda>.

⁷⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02016R0679-20160504&qid=1532348683434>.

⁷¹ Bernier (2017); Scassa (2020).

2020 in the House of Commons, to replace the *PIPEDA*'s privacy provisions with two new statutes: the *Consumer Privacy Protection Act* (*CPPA*) and the *Data Protection Tribunal Act*. The first statute was meant to replace the *PIPEDA*'s "normative core" while the second statute served to "establish a new administrative tribunal to oversee the *CPPA*'s enforcement regime".⁷² However, Bill C-11 expired when the 44th general election was called, and Parliament was dissolved at the end of summer 2021. In June 2022, the federal Minister of Innovation, Science and Industry, François-Philippe Champagne, introduced Bill C-27, a revised version of the old Bill C-11 to which a third component was added: the Artificial Intelligence and Data Act.⁷³ Assuming that Bill C-27 becomes law sometime in the fall of 2022, it is reasonable to expect that the European Commission will renew Canada's *GDPR* adequacy decision, which is imperative for supporting digital trade between Canada and the E.U.

The CPTPP and the CUSMA are Canada's key vehicles to support its international digital trade

With the *Comprehensive and Progressive Agreement on Trans-Pacific Partnership* (*CPTPP*), Canada undertook much more extensive commitments regarding the removal of barriers to international digital trade. This agreement was supposed to replace the *North American Free Trade Agreement* (*NAFTA*) between Canada, Mexico and the U.S.; however, soon after being inaugurated as President of the U.S., Donald Trump decided to pull the U.S. out of what was then called the *Trans-Pacific Partnership* (*TPP*). The other eleven negotiating members of the *TPP*, led by Japan, decided to renegotiate an agreement among themselves, with the hope that the U.S. would rejoin in the future, perhaps after Donald Trump was no longer President. Instead, Donald Trump called on his North American counterparts to negotiate a new, modernized *NAFTA*. Unlike the *NAFTA*, this new agreement, the *CUSMA*, contains a chapter on digital trade.⁷⁴ Perhaps unsurprisingly, given that the *TPP* was a U.S.-led initiative, the *CUSMA*'s digital trade chapter, chapter 19, closely resembles the *CPTPP*'s chapter 14 on e-commerce, although the former goes further in liberalizing international digital trade between its member states.⁷⁵

The *CUSMA*'s chapter 19 prohibits the imposition of several barriers to international digital trade. First, the parties cannot impose customs duties on digital transactions, although domestic taxes on digital trade are allowed if they do not discriminate against firms from the other two parties. Second, the *CUSMA* prohibits restrictions to cross-border data transfers. This includes personal information.⁷⁶ Third, the *CUSMA* prohibits any requirement to locate computing facilities in a member state as a condition of doing business in that jurisdiction, except for contracts with

⁷² Scassa (2020).

⁷³ <https://www.parl.ca/legisinfo/en/bill/44-1/c-27>. For a discussion of Bill C-27's main features, see So (2022).

⁷⁴ <https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cusma-aceum/text-texte/19.aspx?lang=eng>.

⁷⁵ For details on how the two agreements compare with respect to their digital trade chapters, see Leblond (2021).

⁷⁶ Exceptions are allowed for a "legitimate public policy objective" if they are applied in a manner that is not protectionist in nature.

governments.⁷⁷ Fourth, the *CUSMA* forbids requiring the transfer or access to the source code of software (including algorithms that are part of a source code) as a condition for selling or using that software in a member state's territory. Finally, the *CUSMA* prohibits interactive computer services such as Internet service providers, social media platforms and search engines from being treated as information content providers for liability purposes. In practical terms, this means that they cannot be held legally responsible for the content generated by users.

In addition to prohibiting barriers to international digital trade (with some exceptions), the *CUSMA*'s chapter 19 encourages or requires several endeavours that facilitate international digital trade. For instance, chapter 19 recognizes electronic signatures and encourages the member states to work together to convert the paper-based administration of international commerce into an electronic one. Chapter 19 also requires that the member states have consumer protection legislation and regulations in place for online commercial activities and that they work together to protect consumers in digital trade transactions. Similarly, chapter 19 mandates the adoption of legislation and regulations to protect individuals' right to privacy with respect to their personal information. However, the protection of privacy cannot be legislated in a manner that discriminates against firms offering digitally enabled goods and services from the other parties. In support of digital competition, chapter 19 explicitly recognizes that consumers must have not only access to the Internet and its information but also choice with respect to service providers and online applications. Chapter 19 also recognizes that "facilitating public access to and use of government information fosters economic and social development, competitiveness, and innovation" and, therefore, it commits the parties to making such information available digitally and easily accessible. Finally, in recognition of the fact that cybersecurity can "undermine confidence in digital trade", the chapter enjoins the *CUSMA*'s three member states to have capabilities to prevent and respond to cybersecurity incidents and adopt a risk-based approach in addressing cybersecurity threats, especially in working with businesses.

A WTO deal on international digital trade remains elusive

In addition to the *CETA*, the *CPTPP* and the *CUSMA*, Canada is an active participant in the WTO's *Joint Statement Initiative on Electronic Commerce* (JSI), which aims to negotiate a plurilateral agreement on "trade-related aspects of electronic commerce". The *JSI* negotiations began in 2018 to delimit the scope of potential plurilateral negotiations on international digital trade. In February 2021, the *JSI*'s consolidated negotiating text was leaked.⁷⁸ Overall, the text confirms that Canada, Japan and the U.S. are, not surprisingly, pushing for the *CPTPP/CUSMA*'s language, especially with regards to provisions affecting the transfer of data between member states. For its part, the E.U. is proposing what essentially amounts to a full exception to the prohibition on restricting cross-border flows when it comes to protecting personal data and privacy. As for China, it is calling for the right to regulate cross-border data flows and international digital trade as it sees fit, proposing language indicating that any restrictive measure would be acceptable if a member state

⁷⁷ The *CUSMA*'s chapter 19 does not apply to government procurement.

⁷⁸ https://www.bilaterals.org/IMG/pdf/wto_plurilateral_ecommerce_draft_consolidated_text.pdf.

claims that such a measure is necessary to protect its national security.⁷⁹ This confirms the Chinese government's unwillingness to accept binding language that constrains its ability to control what goes in and out of China in terms of data and digital trade.⁸⁰ Given these differences as well as other divisions among WTO members regarding international digital trade negotiations,⁸¹ a plurilateral agreement on "trade-related aspects of electronic commerce" is unlikely in the near future if the agreement's ultimate goal is to serve as a plurilateral governance platform to support international digital trade.⁸²

The Digital Economy Partnership goes beyond the CPTPP and the CUSMA

Since February 2021, Canada has held exploratory discussions to join the *Digital Economy Partnership (DEPA)*,⁸³ which is a standalone international digital trade agreement that currently has three members: Chile, New Zealand and Singapore.⁸⁴ On May 22, 2022, Canada submitted a formal request to launch negotiations to join the *DEPA*.⁸⁵ The *DEPA* is meant to overcome the "digital noodle bowl" problem of divergent rules governing digital trade around the world, which is a concern for businesses, especially SMEs, that are trying to comply with them.⁸⁶ The proliferation of international digital trade provisions in FTAs that increasingly overlap is a good example of such divergence and complexity for business (e.g., which provisions apply when they apply simultaneously?). Like the *CPTPP*'s chapter 14 and the *CUSMA*'s chapter 19, the *DEPA* is built on the core trade principles of non-discrimination, transparency and cooperation; however, the *DEPA*'s scope is much broader than the *CPTPP* and *CUSMA* in that it also covers electronic invoicing and payments, cryptography, digital identities, emerging technologies and data innovation as well as cooperation on competition policy, fintech and regtech.⁸⁷ Unlike traditional trade agreements, the *DEPA* does not include provisions on market access (e.g., for digitally delivered services), IP or technical barriers to trade.⁸⁸ This is perhaps why the "DEPA can be thought of as a side agreement to CPTPP that builds on its e-commerce chapter while also venturing into uncharted territories".⁸⁹ On the other hand, the *DEPA*'s modular structure (16 modules in total) means that it

⁷⁹ See Leblond (2021).

⁸⁰ Aaronson and Leblond (2018).

⁸¹ Aaronson and Struett (2020).

⁸² It appears that little progress in the negotiations has been made since the consolidated negotiating text was leaked in February 2021. In mid-July 2022, a meeting of the WTO's e-commerce negotiators indicated that there was now "a commitment to revise the working modalities of the initiative to ensure that it achieves progress in the next few months and to issue a new consolidated negotiating text by the end of 2022" (https://www.wto.org/english/news_e/news22_e/ecom_14jul22_e.htm).

⁸³ <https://www.international.gc.ca/trade-commerce/consultations/depa-apen/background-information.aspx?lang=eng>.

⁸⁴ China and Korea formally applied to join the *DEPA* in the fall of 2021. Korea began its accession negotiations in January 2022.

⁸⁵ <https://www.canada.ca/en/global-affairs/news/2022/05/minister-ng-announces-canadas-request-to-join-the-digital-economy-partnership-agreement.html>.

⁸⁶ Honey (2021).

⁸⁷ Honey (2021, 231). Like the *CPTPP* and the *CUSMA*, it does not cover government data (except for open government data), government procurement and financial services (except for electronic payments).

⁸⁸ Honey (2021, 228).

⁸⁹ Taheri et al. (2021).

was “designed as a building block for other agreements[whereby] individual elements can easily be plucked out and inserted into others’ agreements or used as a model in the WTO process”.⁹⁰

Although the *DEPA* is much wider in terms of its scope of application and deeper in terms of cooperation between its parties than the *CPTPP* and the *CUSMA*, it also includes a lot of hortatory language. Moreover, like the *CPTPP* and the *CUSMA*, its effectiveness in many areas ultimately rests on arbitration panels’ decisions under the dispute-settlement mechanism to determine what and when national NTBs to international digital trade are acceptable. For example, mandating the parties to follow international standards, when they exist, does not eliminate potential problems in terms of what national standards or regulations are legitimate or not if they end up imposing limitations or additional costs to firms conducting international digital trade.⁹¹ As discussed above, restrictions on international digital trade have a negative impact on business and the economy. Uncertainty with respect to how much such digital trade agreements can ensure that international digital trade can take place without impediments reduces businesses’ willingness to invest and engage in international digital trading activities.

The Global Cross-Border Privacy Rules Forum

In April 2022, the U.S. Secretary of Commerce, Gina Raimondo, announced the establishment of the Global Cross-Border Privacy Rules (CBPR) Forum (the Forum). Canada, Japan, the Republic of Korea, the Philippines, Singapore, Taiwan and the United States are its founding members.⁹² The Forum is meant to promote “trusted global data flows that are critically important to our modern economy”.⁹³ To do so, the Forum will promote the Asia-Pacific Economic Cooperation’s (APEC) Cross-Border Privacy Rules System⁹⁴ from which firms will be able to obtain data privacy certifications that demonstrate their compliance with the CBPR. Under the APEC’s CBPR System, accountability agents, which are recognized but independent public or private sector entities, are responsible for certifying firms that comply with the CBPR. At the time of writing, 49 companies were listed as being compliant (or certified) under the CBPR System.⁹⁵ The Forum is also expected to “disseminate best practices for data protection and privacy and interoperability” and “pursue interoperability with other data protection and privacy frameworks”. And this is to be done through “consultation and exchange of views among representatives of members” and “active stakeholder participation”.⁹⁶ As the Forum is still in its infancy, it remains to be seen how “interoperable” it will be, most especially with the E.U.’s *GDPR*. The E.U. does not currently consider parts of the APEC’s CBPR System as

⁹⁰ Honey (2021, 234-235).

⁹¹ Leblond (2021, 172-173).

⁹² <https://www.commerce.gov/global-cross-border-privacy-rules-declaration>.

⁹³ <https://www.commerce.gov/news/press-releases/2022/04/statement-commerce-secretary-raimondo-establishment-global-cross-border>.

⁹⁴ <https://www.apec.org/About-Us/About-APEC/Fact-Sheets/What-is-the-Cross-Border-Privacy-Rules-System>.

⁹⁵ <http://cbprs.org/compliance-directory/cbpr-system/>.

⁹⁶ <https://www.commerce.gov/global-cross-border-privacy-rules-declaration>.

adequate.⁹⁷ So, the Forum's member states that want to allow their firms to access personal data from the E.U. would still need to have their laws and regulations aligned with the *GDPR*. The same would also apply to companies certified under the CBPR System; they would not qualify to flow data freely from the EU; they would need to obtain firm-specific permissions allowed under the *GDPR*.

Canada has a good basis to develop its digital trade but more needs to be done

Based on the data available, Canada's digital trade performance is below its economy's capacity and remains too focused on the U.S. Canada's digital competitiveness provides a strong basis for international digital trade. However, Canadian businesses, especially SMEs, need to invest more in ICTs, notably more advanced ones. Ultimately, it needs to be easier for Canadian enterprises to do business in the digital sphere and take that business abroad. Trade promotion programs and trade agreements can help Canada's international digital trade. There is a risk, however, that too many agreements for Canadian firms to manage or comply with, especially SMEs, can increase the cost of conducting international digital trade. In other words, the federal government must be careful not to drown business in the "digital noodle bowl".

⁹⁷ The EU's position was made clear in the European Commission's *GDPR* adequacy decision for Japan: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019D0419&from=EN>.

A Digital Trade Strategy for Canada

What should Canada do to improve its digital trade performance? To complement efforts to improve the economy's overall competitiveness, a digital trade strategy for Canada should rest on three pillars: digital infrastructure, digital capacity and international digital trade barriers. First, businesses across the country should have reliable and inclusive access to high-quality digital infrastructure at competitive prices. Second, businesses should adopt as well as develop and protect well established and advanced ICTs to a much larger extent than they have so far. This also means enhancing Canadians' digital skills so that they can make the most of ICTs. Finally, businesses should face minimal barriers to international digital trade from countries abroad as well as at home. Canadian governments (at all levels) and businesses should work closely together to develop and implement policies to achieve these three objectives. They should also collaborate actively with their peers abroad, which face similar challenges.

To be effective, a digital trade strategy for Canada must develop its three pillars in an integrated manner. Greater investment in digital capacity will have a limited impact on Canada's digital trade if it is not also supported by the required digital infrastructure. And high-quality digital infrastructure and capacity will only go so far in creating opportunities for international digital trade for Canadian businesses if they face important non-tariff barriers abroad. The integrated development of the digital strategy's three pillars requires focused government leadership and close engagement with Canada's business community.

Pillar #1: Extending, upgrading and securing Canada's digital infrastructure

High-speed fifth generation (5G) telecommunication networks and applications may be available in urban centres in Canada, but rural communities are often living in a slower world. This makes it difficult, if not impossible, for people and enterprises to take part in digital trade, domestically as well as internationally.⁹⁸ Closing this "digital divide" is key to ensure businesses as well as consumers can take equal part in the digital economy and conduct digital trade.⁹⁹ In Canada, 20 percent of the population lives in a rural area and accounts for 30 percent of the country's GDP.¹⁰⁰ This is why federal and provincial governments have committed billions of dollars to support the development of digital infrastructure (namely broadband connectivity) in rural areas.¹⁰¹ However, "more than half of Canada's rural households still do not have access up to the speed of the [Canadian Radio-television and Telecommunications Commission's] own lacklustre targets — at least 50 Megabits per second (Mbps) for downloads and 10 Mbps for uploads — for minimum Internet services".¹⁰² In part, this is because only a fraction of the billions of dollars committed through programs have been spent so far. In the case of federal programs, only 11 percent (\$870 million) of about \$8 billion allocated to rural connectivity initiatives has been reported as

⁹⁸ Koch (2020).

⁹⁹ Weeden and Kelly (2021).

¹⁰⁰ Gaspard and Khan (2021, 6).

¹⁰¹ Abdelaal and Andrey (2022, 8).

¹⁰² Weeden and Kelly (2021).

expended.¹⁰³ Poor coordination and last-mile connectivity have also affected programs' effectiveness.¹⁰⁴ Smaller service providers and Indigenous communities have also been unable to access or qualify for funds to undertake community-based projects.¹⁰⁵ The recommended solution is a flexible mix of regulatory and funding instruments used to address the specific needs and capabilities of Canada's varied local or regional communities.¹⁰⁶

Inclusive access to cheap and reliable high-speed Internet is the starting point for any digital trade to occur. Being able to pay and receive payment in digital form is probably the next most important piece of the digital trade puzzle.¹⁰⁷ So, attention must also be paid to Canada's digital payments infrastructure, to make sure that paying for digitally ordered goods and services – whether they come from within Canada or from abroad – is affordable, reliable, secure and inclusive. Whether payment is done through credit cards, wire transfers or payment platforms such as PayPal, there is a significant cost per transaction, often for both sides of the transaction. In a recent survey of small businesses conducted by the Canadian Federation of Independent Business, 78 per cent said they could not afford credit card processing fees.¹⁰⁸ Internationally, the Financial Stability Board reports that a “general perception is that cross-border payments are lagging behind domestic ones and present four main categories of challenges, namely: cost, speed, access and transparency”.¹⁰⁹ So, reducing payment-related transaction costs would help stimulate digital trade, domestically as well as internationally. Certainly, greater efforts must be put on cross-border payments if Canada is to increase its international digital trade. Thankfully, there are already several initiatives under way in Canada “to provide consumers, businesses and financial institutions with a modern, fast and convenient payment system”: Real-Time Rail, open banking (or consumer-directed finance), a new Retail Payments Oversight Framework, and Project Jasper.¹¹⁰ Internationally, the Financial Stability Board, of which Canada is a member, has provided the G20 with a roadmap to enhance cross-border payments.¹¹¹ It is crucial for these efforts to continue moving forward as quickly as possible if Canada's payments infrastructure is to become an enabler of digital trade, domestically and internationally.¹¹²

As recognized in Canada's Digital Charter in Action, Canada's critical infrastructure for the digital economy (e.g., ICTs and finance) must be protected from cyber

¹⁰³ Gaspard and Khan (2021, 2).

¹⁰⁴ Abdelaal and Andrey (2022, 19).

¹⁰⁵ Abdelaal and Andrey (2022, 20).

¹⁰⁶ Gaspard and Khan (2021); Weeden and Kelly (2021).

¹⁰⁷ World Economic Forum (2020).

¹⁰⁸ <https://www.cfib-fcei.ca/en/media/news-releases/consumers-shift-digital-payment-methods-credit-card-fees-are-becoming>.

¹⁰⁹ Financial Stability Board (2020, 13).

¹¹⁰ Lane (2020, 4).

¹¹¹ <https://www.fsb.org/work-of-the-fsb/financial-innovation-and-structural-change/cross-border-payments/>.

¹¹² Real-Time Rail, the new national payment system that would allow businesses to process consumer payments instantly, is reported to be four years behind schedule and will not be ready before mid-2023 at the earliest (Victor 2022).

threats.¹¹³ It is therefore good news that the federal government has launched a process – beginning with a public consultation that concluded on June 1, 2022 – to renew the National Strategy for Critical Infrastructure, which was developed more than ten years ago (in 2009).¹¹⁴

For international digital trade, it is key for Canada's digital infrastructure, whether it concerns the Internet or payments, to interconnect cheaply, easily, reliably and securely with its economic partners' digital infrastructure. For this to happen, effective regional and international cooperation on sharing information and developing common technical and regulatory standards must occur, including with respect to telecommunication networks, cybersecurity, blockchain, AI, privacy, and anti-money laundering and terrorism financing. Moreover, facilitating international trade in telecommunications and financial services is important if consumers and businesses are to have easier and cheaper access to such services. For the latter, it is best to rely on effectively implementing Canada's existing trade agreements. Trade agreements can also facilitate cooperation on several relevant issues related to digital infrastructure, since many of them include institutional mechanisms for cooperation between Canada and its partners. In other instances, Canada can rely on international organizations or fora such as the International Telecommunications Union, the Bank for International Settlements and the Financial Stability Board for cooperating with its economic partners.

Pillar #2: Enhancing Canada's digital capacity

Building high-quality digital infrastructure is crucial for enabling digital trade, but so is building digital capacity. In fact, they go hand in hand: "improving the roll-out of high-quality broadband infrastructure is complementary to the adoption of more sophisticated digital applications".¹¹⁵ Building digital capacity requires investing in digital technology adoption as well as digital skills development to create "a culture of use for advanced digital technology".¹¹⁶

Low managerial quality, lack of ICT skills and poor matching of workers to jobs negatively affect digital technology adoption and diffusion. More specifically, building digital capacity requires access to a deep talent pool, which depends on the general level of ICT competence in the labour force as well as the provision of specific ICT training (on the job or between jobs).¹¹⁷

ICT training for low-skilled workers is especially beneficial, since "the marginal benefit of training for adoption is found to be twice as large for low-skilled than for high-skilled workers".¹¹⁸ Labour market flexibility, competitive pressures and the

¹¹³

[https://ic.gc.ca/eic/site/062.nsf/vwapj/Digitalcharter_Report_EN.pdf/\\$file/Digitalcharter_Report_EN.pdf](https://ic.gc.ca/eic/site/062.nsf/vwapj/Digitalcharter_Report_EN.pdf/$file/Digitalcharter_Report_EN.pdf).

¹¹⁴ <https://www.canada.ca/en/services/defence/nationalsecurity/criticalinfrastructure/lets-talk-critical-infrastructure.html>.

¹¹⁵ Andrews et al. (2018, 7).

¹¹⁶ Weeden and Kelly (2021).

¹¹⁷ Shortt et al. (2020, 3) report that the number of ICT graduates would represent 13 percent of the ICT positions that are available.

¹¹⁸ Andrews et al. (2018, 8).

availability of risk capital are also importantly related to the adoption of digital technology.¹¹⁹

These findings apply to the Canadian context. Canadian SMEs experience lower levels of “digital maturity” than larger enterprises.¹²⁰ This is problematic for the economy since 99.8 percent of all Canadian businesses are SMEs.¹²¹ It is therefore crucial to improve the digital maturity of SMEs since, according to research by the Business Development Bank of Canada, digitally mature SMEs are 70 percent more likely to be exporters as well as more likely to have higher sales and profit growth.¹²² Knowledge and skills shortages as well as limited access to reliable, high-speed Internet are barriers to Canadian SMEs improving their digital maturity. Lower digital maturity for Canadian SMEs extends to what Goldsmith calls “foundational technologies” such as social media and e-commerce. So, it is not surprising that he also finds that “SMEs fall behind larger companies in adoption of all types of cybersecurity, despite cyber-attacks often being fatal to small businesses”.¹²³

The launch by the federal government of the Canada Digital Adoption Program with a \$4 billion envelope (\$1.4 billion in grants and \$2.6 billion in loans) is therefore good news for improving the country’s digital capacity.¹²⁴ This program offers two “streams”: (1) support for SMEs to take advantage of e-commerce opportunities (“Grow Your Business Online”) and (2) support for SMEs to develop and implement digital adoption strategies (“Boost Your Business Technology”).¹²⁵ The Grow Your Business Online stream offers micro-grants of \$2,400 to “smaller, consumer-facing businesses” to develop digital trade activities, in addition to guidance from a network of service providers. The Boost Your Business Technology stream is for SMEs (with revenues between \$500,000 and \$100 million) that want to “improve their productivity and become more competitive in the digital marketplace” by adopting more advanced ICTs. These SMEs are eligible for grants of up to \$15,000 (to develop a digital adoption plan) and interest-free loans of up to \$100,000 from the Business Development Bank of Canada for the acquisition of new technologies.¹²⁶

Whether the Canada Digital Adoption Program will be sufficient to push more Canadian SMEs to get involved in digital trade, especially internationally, and invest in advanced ICTs remains to be seen. The relatively small sums involved may not suffice to entice SMEs to do so. Moreover, there are concerns about the network of service providers’ reach and ability to support SMEs in the two streams, notably the focus on creating jobs for young people to advise businesses taking advantage of

¹¹⁹ *ibid.*

¹²⁰ Goldsmith (2021, 5). Digital maturity is composed of technological intensity (“the level of technology adoption and use across both internal and customer-facing operations and processes”) and digital culture (“skills, leadership, and governance in place to successfully integrate digital technologies”).

¹²¹ Goldsmith (2021, 9).

¹²² Goldsmith (2021, 9).

¹²³ Goldsmith (2021, 7-8).

¹²⁴ Goldsmith (2021, 5).

¹²⁵ <https://ic.gc.ca/eic/site/152.nsf/eng/home>.

¹²⁶ <https://www.canada.ca/en/innovation-science-economic-development/news/2022/03/background-er-the-canada-digital-adoption-program.html>.

the Program.¹²⁷ The youth job creation portion of the Program includes digital skills training but only for 35 hours, which is laudable but possibly insufficient to allow individuals to truly master more advanced ICTs and, thereby, help SMEs become more competitive and be willing to engage in digital trade, at home as well as abroad. The Program should also devote significant resources to helping SMEs boost their cybersecurity knowledge and defenses.¹²⁸

To develop digital skills in Canada, the Canadian federal government created the Digital Skills for Youth (DS4Y) program in 2018. This program was a 50-percent wage subsidy for businesses with less than 100 employees to hire and train individuals under 30 in digital/information technology positions. However, this program ended in the spring of 2020 and was not renewed.¹²⁹ The federal government also set up the Digital Literacy Exchange Program (DLEP), which began in 2018 and ends in 2022.¹³⁰ The DLEP's mandate is to "support not-for-profit organizations in the delivery of digital literacy training initiatives for Canadians who need improved skills and confidence in using computers and the Internet". A third federal program to enhance Canadians' digital skills is CanCode, which was extended in 2021 with a new budgetary envelope of \$80 million.¹³¹ CanCode supports "opportunities for Canadian students (kindergarten to grade 12) to learn digital skills including coding, data analytics, and digital content development".

Developing digital skills of a technical nature is necessary for Canadian workers, managers and entrepreneurs to pursue greater digital trade at home and abroad. It is, however, not enough. It is also important to develop "softer" skills in sales, marketing, product management, project management, interpersonal relations, problem resolution, etc.: "Companies are increasingly recognizing the importance of multiple disciplines as pathways to jobs that rely on digital skills".¹³² Canada should, therefore, integrate these multiple disciplines in devising programs aimed at developing Canadians' digital skills. To do so, it could draw inspiration from what other jurisdictions, such as Australia, the E.U. and Singapore, have done to make "much greater progress in developing the sorts of skills infrastructure, such as programs and taxonomies for digital skills—including digital skills toolkits, roadmaps and frameworks—that are needed".¹³³

Higher levels of digital skills among Canadians combined with greater penetration of digital technologies within Canadian businesses should make it easier for Canadian enterprises to develop new digital technologies and services. Such innovation can then be exported to the rest of the world. To maximize the benefits from international digital trade, however, it is crucial to protect the IP underpinning these

¹²⁷ Hannay (2022); Wells (2022).

¹²⁸ It is unlikely that an awareness campaign for SMEs and their workers equivalent to the Get Cyber Safe (<https://www.getcybersafe.gc.ca/en>) for individuals will be enough to ensure that Canadian businesses' ICTs and digital practices are adequately secure against cyber threats.

¹²⁹ <https://www.canada.ca/en/employment-social-development/services/funding/youth-employment-strategy/digital.html>.

¹³⁰ <https://ised-isde.canada.ca/site/digital-literacy-exchange-program/en>.

¹³¹ <https://ised-isde.canada.ca/site/cancode/en>.

¹³² Shortt et al. (2020, 10).

¹³³ Shortt et al. (2020, 4).

technologies and services developed by Canadian enterprises through patents, copyrights, trademarks, industrial designs as well as contractual agreements with employees, suppliers and customers. Furthermore, these legal protections should be adopted not only for the Canadian market but for the entire world, to ensure that technologies' value is captured by those who developed them and their associated services. Obviously, owners of these IP rights must be willing and able to enforce their ownership through legal means when there is infringement by their competitors.

Developing and protecting attractive products and services and being able to sell them digitally form the basis from which digital trade can occur. The next steps in the value chain are to find customers, deliver products and services to them, and, finally, get paid. These tasks are even more challenging when doing business internationally, including dealing with different sets of regulatory requirements for handling data. Knowledge and skills in these areas should also be an integral part of Canada's digital capacity enhancement. For example, the Canada Digital Adoption Program could be expanded to include these dimensions, including IP protection and cybersecurity. The TCS could also be a partner to the Program to advise and support those participating SMEs that want to conduct international digital trade. The TCS is already focusing its efforts at helping Canadian SMEs take advantage of international digital trade opportunities, including with respect to IP services.¹³⁴

Building digital capacity in Canada should be part of a "challenge-driven industrial strategy", which focuses on leveraging two elements: (1) "a mix of public and private R&D spending as well as a broader set of policy interventions to fuel commercial-oriented innovation" and (2) "Canada's human and intellectual capital to commercialize Canadian products and services".¹³⁵ To leverage the first element, Robert Asselin, Sean Speer and Royce Mendes (in their "New North Star II" report) call on Canadian governments and businesses to create an R&D and commercialization strategy for the intangibles economy that includes building R&D linkages between the public and the private sectors, creating an IP strategy, embracing a "whole-of-government" approach, curbing "innovation leakage" and leveraging public procurement to cultivate global champions.¹³⁶ To leverage the second element, the authors recommend that Canada's public and private sectors work together to experiment with new models of education and training as well as retain a larger portion of international students who come to this country.¹³⁷

¹³⁴ Hemmadi (2022).

¹³⁵ Asselin et al. (2020, 9).

¹³⁶ Asselin et al. (2020).

¹³⁷ Asselin et al. (2020).

Pillar #3: Removing barriers to international digital trade

The third and final pillar of Canada's digital trade strategy should focus on two objectives: (1) ensure that any taxation of digital activities, if any, does not impede international digital trade and (2) remove non-tariff barriers to international digital trade.

With respect to tariffs on digital trade, Canada should take all available actions to ensure that the WTO Moratorium on Customs Duties on Electronic Transmissions remains in place for the foreseeable future. The moratorium has been renewed at every WTO ministerial conference since 1998. The same precautionary approach should also be applied to the broader taxation of digital trade activities, whether it is in the form of value-added taxes or digital services taxes. According to a study conducted by the World Economic Forum, survey respondents identified digital taxation as the second-most important policy concern for digital trade, behind data governance measures.¹³⁸ Canada should, therefore, continue cooperating with the more than 130 countries that have signed on to a new framework for international tax reform to address the tax challenges arising from the economy's digitalisation. This high-level agreement was reached through the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS).¹³⁹

Like other countries, Canada faces the so-called “data trilemma”, which states that the following three elements cannot hold simultaneously: freely flowing data across borders; national data protection laws and regulations that are distinct from those of other countries; and a high level of trust in the data environments among individuals, consumers, businesses and governments.¹⁴⁰ Only two of the three elements can occur at the same time, which leads to three possible outcomes or scenarios. (1) Strong national data protection laws and regulations lead to high levels of trust, but they impose restrictions on cross-border data flows and digitally delivered services. (2) The free flow of data across borders while maintaining national data policies lead to accepting weaker (foreign) data protection measures when data flows abroad, which could negatively affect trust. (3) Data flowing freely across borders with a high degree of trust surrounding the collection and use of data means either adopting another jurisdiction's regulatory standards (for data to flow freely with this jurisdiction and others with the same recognized standards) or cooperating with governments in other countries to develop and enforce common, high-quality protection standards and regulations for personal as well as non-personal data. In other words, the last scenario means giving up on separate or independent national data protection laws and regulations.

The uncertainty surrounding current digital trade provisions found in Canada's trade agreements risks leaving businesses in Canada and its economic partners in two unsatisfactory scenarios. In the first scenario, Canada and its partners adopt whatever regulations they deem necessary to protect individuals, consumers, businesses and governments at the national level but at the expense of cross-border

¹³⁸ World Economic Forum (2021, 9).

¹³⁹ <https://www.oecd.org/newsroom/130-countries-and-jurisdictions-join-bold-new-framework-for-international-tax-reform.htm>.

¹⁴⁰ Leblond and Aaronson (2019).

data flows and international digital trade. In the second scenario, international digital trade is free to take place – because of limiting national data regulations’ scope of applicability – but at the expense of trust in data-driven markets.

To avoid these two unsatisfactory scenarios, there is a third scenario that involves high-quality, common digital rules between trade partners, whereby international digital trade flows freely across borders while consumers, businesses and governments place a high degree of trust in the goods and services that are digitally ordered and delivered. This scenario is considered “first best”: “The first-best outcome for businesses would unquestionably be to establish global rules that would mitigate and minimise impediments to digital trade, including seeking to untangle the digital noodle bowl across as many markets as possible”.¹⁴¹ In this third, more desirable scenario, there are two options. One option is for Canada (and other trade partners) to adopt (or import) an existing regulatory regime. The second option is to create an international regime for setting common digital standards.

With the first option, Canada and other countries could import the E.U.’s digital governance regime, which has made important strides in recent years to create a high-trust digital market environment.¹⁴² This option would be in line with the E.U.’s strategy of pushing its standards and regulations internationally, which has become known as the “Brussels Effect”.¹⁴³ A good example of this strategy is the E.U.’s *GDPR* adequacy assessments that allow (or not) firms based in economic partners like Canada to import personal data from the E.U. The problem with this option is that Canada has no say in the digital rules that would govern its economy and digital trade. Therefore, there is a risk that an imported digital governance regime would not correspond adequately to the needs and preferences of Canada’s economy and society.¹⁴⁴

The U.S. rejects the option of importing the E.U.’s digital governance regime, preferring to have a say over the standards and rules that govern its digital trade and data-driven markets.¹⁴⁵ Instead, it prefers to pursue the second option of an international regime for setting common or equivalent digital standards. Therefore, it has recently launched the Global CBPR Forum, which aims to develop international privacy rules outside of the APEC’s remit – where rules have not been updated for more than a decade – so that there is a credible alternative to the E.U.’s *GDPR*. Given its plurilateral nature, the Forum is an improvement on the E.U.’s unilateral approach with the *GDPR* in terms of decision-making and ability to influence privacy and data protection standards. However, it will depend on the amount of influence that Canada and other Forum members will have on the

¹⁴¹ Honey (2021, 236).

¹⁴² <https://carleton.ca/ces/2022/new-video-eu-digital-governance-lessons-and-consequences-for-canada/>.

¹⁴³ Bradford (2020).

¹⁴⁴ For instance, the E.U.’s digital governance regime has been criticized for imposing important regulatory burdens and costs on business, especially SMEs. In the *GDPR*’s case, it has been estimated that the regulation has reduced firms’ profits by eight percent on average compared to a two-percent reduction for sales (Frey and Presidente 2022).

¹⁴⁵ See Fefer (2021).

development of new or updated CBPR when compared to the U.S., which is undeniably the Forum's leader.¹⁴⁶

The competition between the E.U. and the U.S. with respect to digital governance standards represents a challenge for Canada and other countries that have both economies as their largest trade partners: they want to be able to continue conducting trade with both and, as such, do not want to be forced to choose one set of rules over the other. For Canada and Japan, which are both members of the Forum, it means working together to ensure that the Forum's CBPR converge towards (i.e., are made interoperable with) those of the E.U.'s *GDPR*. In other words, they must push the U.S. to cooperate with the E.U. rather than compete.

The ideal scenario for Canada (and other partners like Japan, Mexico and the U.K.) is one where the E.U. and the U.S. cooperate to create an international regime for setting common digital standards that include but go well beyond privacy standards or rules. Such a regime would create a single digital trade area with its own standard-setting and monitoring body to develop and enforce common standards and practices. In this single digital trade area, firms would be free to flow data across borders and conduct unfettered international digital trade because the rules and standards would be the same or equivalent across all member states.¹⁴⁷ The standard-setting and monitoring body, which could be called the International Digital Standards Board (IDSB), should be modelled on bodies that exist to set standards for banking and financial markets.¹⁴⁸ In this option, all member states would have a say in the regime's design and activities.

As part of its international digital trade strategy, Canada should play a leadership role in creating an IDSB and single digital trade area. The first and most important step is getting the E.U. and the U.S. to agree to cooperate on such a project. Thankfully, there is now a vehicle for such discussions to take place: the E.U.-U.S. Trade and Technology Council (TTC). Canada, with like-minded partners, must get the IDSB idea on the TTC's agenda. To do so, it can use several platforms that are its disposal: the *CETA*'s Regulatory Cooperation Forum, the Global CBPR Forum and the proposed North American Digital Trade Council (see below for details). Initial transatlantic cooperation between Canada, the E.U., Mexico and the U.S. – with effective supporting roles for partners such as Japan and the U.K. – on an IDSB and single digital trade area would undoubtedly act as a very strong attraction pole for other countries to join such an international digital governance regime.

Creating a single digital trade area with common or equivalent standards is likely to take years to accomplish. In the meantime, Canada should continue its involvement in the WTO's *JSI* as well as the Global CBPR Forum. It should also complete the negotiations to become a member of the *DEPA*. Once a member of the *DEPA*, it should encourage other economic partners to join to limit the proliferation of (potentially overlapping) bilateral or plurilateral digital agreements (i.e., the "digital

¹⁴⁶ At the time of writing, no information about the Forum's governance and decision-making had been made available to the public.

¹⁴⁷ Knake (2020); Leblond and Aaronson (2019); Meltzer (2019).

¹⁴⁸ Leblond (2021).

noodle bowl”, mentioned by Stephanie Honey above).¹⁴⁹ Although agreements such as the *JSI*, the Forum and the *DEPA* face uncertainty with respect to their effectiveness at supporting international digital trade, they remain useful mechanisms for learning from and collaborating with economic partners to remove impediments to international digital trade. As mentioned, if a single digital trade area is “first best” for international digital trade, then the *DEPA* as well as trade agreements such as the *CPTPP* and the *CUSMA* are second best.

Similarly, Canada should work closely with its two North American partners to implement as effectively as possible the *CUSMA*’s chapter 19 on digital trade. It should take advantage of the chapter’s numerous provisions that call on the North American partners to cooperate. Setting up a formal North American Digital Trade Council that would involve government and business representatives from all three *CUSMA* parties would be an important step in doing so.¹⁵⁰ The *CUSMA*’s provisions on consumer protection, privacy, cybersecurity and unsolicited electronic commercial communications are meant to achieve a trusting environment for digital trade. As mentioned above, creating such an environment requires close cooperation to develop and enforce common, high-quality standards and regulations for protecting personal as well as non-personal data, governing digitally delivered services and ensuring the security of North America’s cyberspace. A North American Digital Trade Council should also work with subnational governments in Canada, Mexico and the U.S. so that provincial or state laws and regulations to protect individuals, businesses and governments do not pose additional obstacles to cross-border data flows and digital trade.¹⁵¹ Finally, such a council would make it easier for the three North American partners to coordinate their efforts in the development (and regulation) of advanced digital technologies like AI, blockchain and quantum computing. Such cooperation could avoid duplication of efforts and protectionist actions (e.g., subsidies) in the pursuit of national industrial policies, which are gaining in popularity across all three countries. The recently announced cooperation initiatives in science, technology and innovation between Canada and the U.S.¹⁵² could eventually become an integral part of a North American Digital Trade Council.

The IDSB and single digital trade area, the *DEPA* and the North American Digital Trade Council are medium- to long-term projects that should be part of Canada’s digital trade strategy to reduce barriers to international digital trade. However, there is a project that requires Canada’s immediate attention: ensuring that its data protection laws and regulations remain “adequate” by the E.U.’s *GDPR* standards so that Canadian and European businesses can maintain, if not increase, their international digital trade activities across the Atlantic. If Canada were to lose its adequacy standing with the E.U., then personal data from the E.U. would become

¹⁴⁹ See also Ciuriak and Fay (2022).

¹⁵⁰ Leblond (2022).

¹⁵¹ Several Canadian provinces and U.S. states have adopted or are adopting their own privacy and data protection regimes, which make the digital regulatory environment more complex and potentially burdensome for firms conducting digital trade across North America (Leblond, forthcoming)

¹⁵² <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/joint-statement-to-leaders-from-canadas-minister-of-innovation-science-and-industry-and-the-united-states-director-of-the-white-house-office-of-sci.html>.

much more difficult to transfer to Canada, seriously hampering digital trade between Canada and the E.U. It is, therefore, crucial that Bill C-27 be adopted sometime in the fall of 2022 in time for the European Commission's decision on Canada's *GDPR* adequacy.

Next Step: Create a Canadian Digital Policy Council to Take Charge of the Digital Trade Strategy for Canada

The digital trade strategy for Canada will not happen on its own. It requires close and sustained collaboration between business and government. In his 2021 Mandate Letter, the Minister of Innovation, Science and Industry, François-Philippe Champagne, is tasked with establishing “a digital policy task force to integrate efforts across government and position Canada as a leader in the digital economy and in shaping global governance of emerging technologies”.¹⁵³ Logically, this digital policy task force should be in charge of promoting Canada’s digital trade strategy and ensuring the proper implementation of its three pillars.

Like the Council of Economic Advisors that the Deputy Prime Minister and Minister of Finance, Chrystia Freeland, has been mandated to create,¹⁵⁴ the task force should be permanent since the digital economy and digital trade are going to be with us for the foreseeable future and the programs that are going to underpin Canada’s digital trade strategy will need to be sustained and renewed over time. This is especially true for the creation of a single digital trade area with an International Digital Standards Board, which is a long-term project. Therefore, to reflect its permanent nature, the digital policy task force should perhaps be renamed the Canadian Digital Policy Council.

To be effective, the Canadian Digital Policy Council will require strong support and engagement from the Minister of Finance, the Minister of Innovation, Science and Industry, and the Minister of International Trade, Export Promotion, Small Business and Economic Development, whose departments are key to implementing the digital strategy’s three pillars. It will also need to coordinate closely with the Council of Economic Advisors, which is expected to “provide the Government with independent advice and policy options on long-term economic growth that will help Canada achieve a higher standard of living, better quality of life, inclusive growth and a more innovative and skillful economy”.¹⁵⁵ This is because digital policy and digital trade are key elements of the Council of Economic Advisors’ mandate.

It will be important for the Canadian Digital Policy Council to cooperate with Canadian provinces and territories in implementing the digital trade strategy, to avoid unnecessary duplications of efforts and spending and, instead, leverage existing resources to create synergies between actions taken by various

¹⁵³ <https://pm.gc.ca/en/mandate-letters/2021/12/16/minister-innovation-science-and-industry-mandate-letter>.

¹⁵⁴ <https://pm.gc.ca/en/mandate-letters/2021/12/16/deputy-prime-minister-and-minister-finance-mandate-letter>.

¹⁵⁵ <https://pm.gc.ca/en/mandate-letters/2021/12/16/deputy-prime-minister-and-minister-finance-mandate-letter>.

governments. Such cooperation should include the removal of (internal) regulatory barriers to digital trade across Canada (e.g., on privacy and data protection).

To make it even more effective, the Canadian Digital Policy Council should also be required to report back to Canadians every year on the digital trade strategy's progress and results. Such transparency would not only ensure accountability vis-à-vis the Canadian public for such a fundamental endeavour to the Canadian economy's future, but also provide an opportunity to improve and update the digital trade strategy as the Canadian and global economies evolve. Equally important, a yearly report would provide additional pressure on the relevant stakeholders (especially the federal government) to prevent the strategy from fizzling out over time.

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Appendix

Table A.1: E-commerce sales, top-10 countries, 2019

Rank	Economy	Total e-commerce sales (\$ billions)	Share of total e-commerce sales in GDP (%)	B2B e-commerce sales (\$ billions)	Share of B2B e-commerce sales in total e-commerce (%)	B2C e-commerce sales (\$ billions)
1	United States	9,580	45	8,319	87	1,261
2	Japan	3,416	67	3,238	95	178
3	China	2,604	18	1,065	41	1,539
4	Korea (Rep.)	1,302	79	1,187	91	115
5	United Kingdom	885	31	633	72	251
6	France	785	29	669	85	116
7	Germany	524	14	413	79	111
8	Italy	431	22	396	92	35
9	Australia	347	25	325	94	21
10	Spain	344	25	280	81	64
	10 above	20,218	36	16,526	82	3,691
	World	26,673	30	21,803		4,870

Source: UNCTAD (2021a, 4)

Table A2: B2C e-commerce sales, top-20 economies, 2019

Rank	Economy	B2C e-commerce sales (\$ billion)	Share of B2C e-commerce sales in GDP (%)	Online shoppers (million)	Online shoppers (% of internet users)
1	China	1,539	10.7	639	75
2	United States	1,261	5.9	189	80
3	United Kingdom	251	8.9	42	88
4	Japan	178	3.5	55	54
5	France	116	4.3	38	77
6	Korea (Rep.)	115	7.0	27	66
7	Germany	111	2.9	56	84
8	Spain	64	4.6	23	64
9	India	61	2.1	70	20
10	Canada	53	3.0	24	84
11	Hong Kong (China)	38	10.4	2	38
12	Italy	35	1.8	19	49
13	Russian Federation	31	1.9	34	35
14	Mexico	31	2.5	26	32
15	Netherlands	29	3.2	12	84
16	Thailand	27	5.3	5	14
17	Ireland	25	6.4	2	73
18	Australia	21	1.5	12	73
19	Malaysia	19	6.0	15	35
20	Brazil	16	0.9	48	39
	20 above	4,021	5.9	1,339	59

Source: UNCTAD (2021a, 5)

Table A3: Digitally deliverable services trade, top 10 importers and exporters, 2020

Digitally deliverable services imports								
By value				Rank	By value as % of GDP			
	US\$ millions	Change (%)	%GDP			%GDP	US\$ millions	Change (%)
United States of America	317,625	3.0	1.5	1	Luxembourg	99.8	73,084	-1.4
Ireland	280,744	-10.1	66.9	2	Malta	84.5	12,031	8.8
Germany	183,443	0.5	4.8	3	Ireland	66.9	280,744	-10.1
United Kingdom	146,312	-4.0	5.4	4	Singapore	31.6	106,919	-2.1
China	139,610	8.9	0.9	5	Cyprus	27.3	6,459	22.7
France	135,269	-4.4	5.2	6	Seychelles	27.0	318	-17.4
Japan	133,278	1.9	2.6	7	Anguilla	16.3	50	-23.9
Netherlands	124,037	-35.3	13.6	8	Saint Kitts and Nevis	15.8	139	-20.6
Singapore	106,919	-2.1	31.6	9	Aruba	14.9	340	-15.7
Switzerland, Liechtenstein	88,098	3.2	11.7	10	Dominica	14.7	72	-29.2
Digitally deliverable services exports								
By value				Rank	By value as % of GDP			
	US\$ millions	Change (%)	%GDP			%GDP	US\$ millions	Change (%)
United States of America	533,093	0.8	2.5	1	Luxembourg	134.1	98,277	-1.9
United Kingdom	286,701	-2.8	10.6	2	Ireland	58.2	244,152	9.7
Ireland	244,152	9.7	58.2	3	Malta	58.1	8,273	-1.8
Germany	203,657	0.1	5.4	4	Singapore	36.2	122,274	-2
India	154,775	4.63	5.8	5	Cyprus	36.2	8,548	20.2
China	154,375	7.5	1.0	6	Anguilla	30.0	92	-6.5
France	142,942	-8	5.5	7	Seychelles	27.1	320	-10.9
Netherlands	126,809	-33.9	13.9	8	Belgium	14.5	74,763	-1.1
Singapore	122,274	-2	36.2	9	Netherlands	13.9	126,809	-33.9
Japan	114,741	-2.5	2.3	10	China, Hong Kong SAR	11.3	39,407	-3.3

Note: Considers only economies for which UNCTAD holds 2020 data.

Source: UNCTAD (2021c, 11)



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