

Digital Trade: In Search of Appropriate Regulation

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A. Introduction

Technological changes can be rapid but they do not always per se call for a legal reform.¹ Yet, some technologies can be of a particularly disruptive nature and trigger radical changes in existing economic sectors and enable new modes of work, production and consumption. Digital technologies, taken as a generic category of technological inventions and applications, fall under this rare kind of ‘disruptive technologies’. To make apt policy decisions, one needs to understand their current state of evolution and integration in the economy and in other areas of society, identify their effects on different existing policies and institutions, and finally, formulate an adequate regulatory response that should work both for the current moment in time, as well as in anticipation of future technological development. In this line, the present chapter aims to contextualize the effects of digital technologies for trade and to analyze the implications of the new technological affordances and the new patterns of digital trade for global trade law and policies.

The chapter starts with a brief look into disruptive technologies and discusses the Internet as a discrete type of general purpose technology (GPT). It then explores the sweeping effects of digitization at different levels of the economy and on trade and trade policies. In order to understand what needs to be changed or at least calibrated in existing external trade policies, we also need to know what we have in terms of existing regulatory frameworks. It is the objective of the chapter’s third part to attend to this need, as well as to show how selected countries have responded to the digital challenge and formulated distinct or less distinct responses in their respective trade policies. The focus here is placed on the newer and most advanced templates in the area of digital trade law – those of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and of the United States Mexico Canada Agreement (USMCA). The chapter goes on to contextualize and assess the impact of the existing legal framework, as shaped by preferential trade agreements. In its last part, the chapter asks whether there are better ways to address the data-driven economy and what the essential elements of such a model may be.

B. Digital disruption

I. Overview and terminological remarks

There is no clear definition of what should qualify as a ‘disruptive technology’. While definitions vary, there seems to be one common feature across the different technological

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¹ See famously, Frank H. Easterbrook, ‘Cyberspace and the Law of the Horse’, *The University of Chicago Legal Forum* (1996), 207–216.

advances that is that they all ‘have the potential to disrupt the status quo, alter the way people live and work, rearrange value pools, and lead to entirely new products and services’.² This resonates the idea voiced by Joseph Schumpeter that significant advances in economies can be accompanied by a process of ‘creative destruction’.³ The McKinsey Global Institute identified in 2013 twenty-five technologies as ‘disruptive’, because they were (1) rapidly advancing; (2) their potential scope of impact was broad; (3) they affected significant economic value; and (4) their economic impact was potentially disruptive.⁴ Amongst the technologies listed were: mobile Internet; automation of knowledge work; the Internet of Things (IoT); cloud technology; advanced robotics; autonomous and near-autonomous vehicles; next-generation genomics; energy storage; 3D printing; advanced materials; advanced oil and gas exploration; and renewable energy.⁵ It is evident, even to the naked eye, that many, indeed the majority, of these technologies are linked to information technology (IT) and the process of digitization. Even if we consider one of the less IT-related examples – that of gene sequencing, its development too is in fact highly dependent on improvements in computational power and Big Data analytics.⁶ Other authors have also addressed these radical changes and signalled the dawn of a ‘Fourth revolution’⁷ (also ‘Fourth industrial revolution’⁸), calling for new regulatory responses.⁹

II. Digital technologies as general purpose technologies

Another way of thinking about the multiple and multifaceted effects of the digital technology is to see it as a ‘general purpose technology’ (GPT).¹⁰ A GPT is a specific type of technology that has broad-ranging enabling effects across many sectors of the economy. Technologists typically define a GPT as a generic technology that comes to be

² James Manyika et al., *Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy* (Washington, DC: McKinsey Global Institute, 2013), at 1.

³ Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy*, 3rd edn. (New York: Harper, 1950), at 83 and passim.

⁴ Manyika et al. (2013), at 2–3.

⁵ Manyika et al. (2013), at 2–9; similarly but less comprehensively, see Klaus Schwab, *The Fourth Industrial Revolution* (New York: Portfolio, 2017).

⁶ Manyika et al. (2013), at 14.

⁷ Luciano Floridi, *The Fourth Revolution: How the Infosphere Is Reshaping Human Reality* (Oxford: Oxford University Press, 2014). Warschauer and Matuchniak talk of digitization as the ‘fourth revolution in the means of production of knowledge, following the three prior revolutions of language, writing, and print’. They argue that its emergence and spread are particularly swift as they occur simultaneously with the transition from industrial to informational economy. See Mark Warschauer and Tina Matuchniak, ‘New Technology and Digital Worlds: Analyzing Evidence of Equity in Access, Use, and Outcomes’, *Review of Research in Education* 34:1 (2010), 179–225, at 179, referring to Stevan Harnad, ‘Post-Gutenberg Galaxy: The Fourth Revolution in the Means of Production and Knowledge’, *Public-Access Computer Systems Review* 2:1 (1991), 39–53.

⁸ Schwab (2017). Schwab makes the following distinctions: The ‘First Industrial Revolution’ used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres.

⁹ Schwab (2017).

¹⁰ Boyan Jovanovic and Peter L. Rousseau, ‘General Purpose Technologies’, in Philippe Aghion and Steven N. Durlauf (eds), *Handbook of Economic Growth* (Amsterdam: Elsevier, 2005), 1182–1224.

(1) *widely* used; (2) to have *multiple* uses, and (3) to have many *spillover effects*.¹¹ GPTs are not only non-rival and long-lasting, but play the role of ‘*enabling technologies*’ by opening up new opportunities rather than offering complete, final solutions.¹² GPTs also tend to shift value to consumers, at least in the long run, and ultimately give all players an opportunity to raise productivity, driving increased competition that leads to lower prices.¹³ The Internet is an excellent example of a GPT. It introduced new ways of producing, distributing, accessing and re-using information that has enabled major innovations – some of them like online shopping may seem trivial, as they plainly transform existing market processes to a new space but others are truly far-reaching – like the emergence of new global value chains and new forms of competition, entirely new disruptive platforms like search engines and social networking sites, or the sharing economy applications like *Airbnb* or *Uber*.

Another feature of GPTs that may be critical for policy-makers is that their evolution is not linear. Instead, their effects are multifaceted and it may be difficult to predict where and how changes will unfold.¹⁴ As digital technologies are deeply intertwined with societies, that are in themselves complex and multi-directional, matters only become more complicated. It has been for instance argued in this context that the benefits of the Internet as an enabling platform for innovation and growth cannot be taken somehow as given but need to be seen as a consequence of its original design that embedded openness and generativity.¹⁵ Benkler and others have shown that innovation occurs differently in this networked environment and that it is typified by: change and complexity, rather than predictability and ‘well behaved’ change; innovation, rather than efficiency and optimization; and ‘scruffy’, adaptive learning systems that do better than slower-moving, optimized systems.¹⁶ Regulators must thus understand these systemic specificities; they need to learn to deal with unpredictability and to think of policy design that can adequately address it. Also, because the effects of digital technologies are multi-directional, some applications that have the potential to drive productivity growth, such as advanced robotics and automated knowledge work, could at the same time cause negative

¹¹ Richard S. Whitt and Stephen Schultze, ‘The New “Emergence Economics” of Innovation and Growth, and What It Means for Communications Policy’, *Journal of Telecommunication and High Technology Law* 7 (2009), 217–315; Richard S. Whitt, ‘A Deference to Protocol: Fashioning a Three-dimensional Public Policy Framework for the Internet Age’, *Cardozo Arts and Entertainment Law Journal* 31 (2013), 689–768, at 717–729.

¹² Whitt (2013).

¹³ Manyika et al. (2013), at 24.

¹⁴ An example from history with another GPT is the development of the printing press. The printing press was first used as a way to make the bible accessible but it became instrumental for the leaders of the Reformation, who adopted the technology to print the pamphlets that spread the movement at unprecedented speed. The printing press also helped spark the scientific revolution and the Enlightenment by disseminating research and discoveries. Indirect effects included accelerated city growth. Some historians attribute Europe’s rapid growth and global influence and the eclipse of Islamic nations after the 15th century to the rapid adoption of printing in Europe and its slow adoption in Islamic economies. See Manyika et al. (2013), at 25; Jeremiah E. Dittmar, ‘Information Technology and Economic Change: The Impact of the Printing Press’, *The Quarterly Journal of Economics* 126 (2011), 1133–1172.

¹⁵ Jonathan L. Zittrain, *The Future of the Internet – and How to Stop It* (New Haven: Yale University Press, 2008).

¹⁶ Yochai Benkler, ‘Growth-Oriented Law for the Networked Information Economy: Emphasizing Freedom to Operate over Power to Appropriate’, in Kauffman Taskforce on Law, Innovation and Growth (ed), *Rules for Growth: Promoting Innovation and Growth through Legal Reform* (Kansas City, MO: Kauffman Foundation, 2011), 313–342, at 314.

effects on other fields – such as notably, employment.¹⁷ In this sense, policy-makers need to continually balance the benefits against the risks – this has become particularly evident in recent years with the increased value of data and the new set of concerns in the area of privacy protection, as discussed below.

III. Data and Big Data

Data is a relatively recent buzzword in the contemporary debates of digitally driven economic growth and innovation.¹⁸ Enabled by a new generation of digital technologies and because of their deep embeddedness in all facets of societal life, companies increasingly capture vast amounts of information about their customers, suppliers and operations. Millions of networked sensors are now implanted in the physical world, in devices, such as cars and home personal assistants, extracting, creating and communicating data. Individuals with smartphones and on social network sites only fuel this exponential growth of data and ultimately lead to accumulation of Big Data sets.¹⁹ Data has become so essential to economic processes that it is said to be the ‘new oil’.²⁰ Like other factors of production, such as natural resources and human capital, it is increasingly the case that much of modern economic activity, innovation and growth cannot occur without data.²¹ A plethora of studies and expert reports point at the vast potential of data as a trigger for more efficient business operations, highly innovative societal solutions, and ultimately better policy choices.²² The transformative potential refers not only to new ‘digital native’ areas, such as search or social networking, but also to ‘brick-and-mortar’, physical businesses. The data gathered, for instance, in manufacturing can help improve processes, anticipate risks and prevent accidents; public

¹⁷ Manyika et al. (2013), at 27, referring to Erik Brynjolfsson and Andrew McAfee, *Race against the Machine: How the Digital Revolution Is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy* (Lexington, MA: Digital Frontier Press, 2011).

¹⁸ Although there were some debates on data flows in the 1980s. See e.g. Christopher Kuner, ‘Regulation of Transborder Data Flows under Data Protection and Privacy Law: Past, Present and Future’, *OECD Digital Economy Paper* 187 (2011); Susan Aaronson, ‘Why Trade Agreements Are Not Setting Information Free: The Lost History and Reinvigorated Debate over Cross-Border Data Flows, Human Rights and National Security’, *World Trade Review* 14 (2015), 671–700.

¹⁹ James Manyika et al., *Big Data: The Next Frontier for Innovation, Competition, and Productivity* (Washington, DC: McKinsey Global Institute, 2011). There are no clear definitions of small versus Big Data. Definitions vary and scholars seem to agree that the term of Big Data is generalized and slightly imprecise. One common identification of Big Data is through its characteristics of volume, velocity, and variety, also referred to as the ‘3-Vs’. Increasingly, experts add a fourth ‘V’ that relates to the veracity or reliability of the underlying data, as well as a fifth one that relates to the value of the data. See Viktor Mayer-Schönberger and Kenneth Cukier, *Big Data: A Revolution That Will Transform How We Live, Work, and Think* (New York: Eamon Dolan/Houghton Mifflin Harcourt, 2013), at 13. For a brief overview of the phenomenon of Big Data and review of the literature, see Mira Burri, ‘Understanding the Implications of Big Data and Big Data Analytics for Competition Law: An Attempt for a Primer’, in Klaus Mathis and Avishalom Tor (eds), *New Developments in Competition Behavioural Law and Economics* (Berlin: Springer, 2019), 241–263.

²⁰ *The Economist*, ‘The World’s Most Valuable Resource Is No Longer Oil, but Data’, print edition, 6 May 2017.

²¹ Manyika et al. (2011).

²² See e.g. Manyika et al. (2011); Mayer-Schönberger and Cukier (2013); Nicolaus Henke et al., *The Age of Analytics: Competing in a Data-Driven World* (Washington, DC: McKinsey Global Institute, 2016).

sector administration can also be better structured, made more efficient and more citizen-oriented.²³

The implications of Big Data availability and analytics are multiple and some of them far-reaching.²⁴ At a micro-level, for instance, the value of data changes the traditional relationship between consumers and producers. While in the past companies sold products to their customers in return for money and some negligible data, '[t]oday, transactions – and indeed every interaction with a consumer – produce valuable information. Sometimes the data itself is so valuable that companies such as *Facebook*, *LinkedIn*, *Pinterest*, *Twitter*, and many others are willing to offer free services in order to obtain it'.²⁵ Data becomes also absolutely essential in terms of competition and market power. Firms, like *Apple*, *Google*, *Amazon*, *Facebook*, *Microsoft*, *General Electric* or *Baidu*, have had a sizeable first-mover advantage in the field and become 'analytics leaders', while at the same time establishing themselves as some of the most valuable companies in the world.²⁶ These companies have differentiated themselves through unique data sources, analytics talent and investment in data infrastructure. The same trend can be seen amongst younger companies, 'the next wave of disruptors' – that tend to be companies with business models predicated on data analytics, such as *Uber*, *Flipkart*, *Airbnb*, *Snapchat*, *Pinterest* or *Spotify*.²⁷

In the context of trade and trade policies, the growing importance of data for the digital economy has one crucial implication: Data *must* flow across borders. Many of the innovations based on digital technologies do rely on global data flows. Things like the app economy, the outsourcing of many services, the provision of digital products and services, many cloud computing applications or the IoT would not function under restrictions on the cross-border flow of data.²⁸ This critical interdependence puts trade policy under pressure and demands solutions. These may not be easy however, as the use of data opens many regulatory questions as to the balance between access to and control of data and the protection of privacy and national security.²⁹ Furthermore, when data leaves the country, many jurisdictional issues arise and countries feel that they are no longer in a position to secure adequate protection for their citizens, as notably the European Union does with regard to personal data protection.³⁰

²³ See e.g. Manyika (2011).

²⁴ Mayer-Schönberger and Cukier (2013).

²⁵ Henke et al. (2016), at 26.

²⁶ Ibid.

²⁷ Ibid.

²⁸ See Anupam Chander, 'National Data Governance in a Global Economy', *UC Davis Legal Studies Research Paper* 495 (2016), at 2.

²⁹ Mayer-Schönberger and Cukier (2013); Urs Gasser, 'Perspectives on the Future of Digital Privacy', *Zeitschrift für Schweizerisches Recht* 135 (2015), 335–448; Urs Gasser, 'Recoding Privacy Law: Reflections on the Future Relationship among Law, Technology, and Privacy', *Harvard Law Review* 130:2 (2016), 61–70.

³⁰ Mira Burri and Rahel Schär, 'The Reform of the EU Data Protection Framework: Outlining Key Changes and Assessing Their Fitness for a Data-Driven Economy', *Journal of Information Policy* 6 (2016), 479–511; Mira Burri, 'Interfacing Privacy and Trade', *Case Western Journal of International Law* 52 (forthcoming 2021; on file with the author).

C. The effects of digitization on trade

I. Overview of developments and trends

Digitization has had and continues to have multiple effects on trade – first, taken broadly as an important part of globalization processes and second, taken more narrowly, as a trigger of new patterns of trade in services and goods and enabler of new types of competition. The McKinsey Global Institute published in 2016 an influential report on digital globalization that includes full data and econometric analyses of the changes in trade due to the advent and wide spread of digital technologies and the Internet in particular.³¹ It establishes that the world has never been more deeply connected by commerce, communication and travel than it is today. But it also clearly shows that the pattern of globalization is shifting – and this to a large extent because of the disrupting effects of digital technologies.

First, digitization contributes to growth. McKinsey’s econometric research indicates that global flows of goods, foreign direct investment and data have increased current global GDP by roughly 10% compared to what would have occurred in a world without any flows.³² This value was equivalent to USD 7.8 trillion in 2014 alone. Data flows account for USD 2.8 trillion of this effect, exerting a larger impact on growth than traditional goods flows. This is a remarkable development given that the world’s trade networks have developed over centuries, while cross-border data flows are relatively young.³³

Second, the share of digital trade is sizeable. Approximately 12% of the global goods trade is conducted via international electronic commerce, with much of it driven by platforms, such as *Alibaba*, *Amazon*, *eBay* and *Flipkart*. Also critically, some 50% of the world’s traded services are already digitized.³⁴ Digitization enables instantaneous exchanges of virtual goods. E-books, apps, online games, music and streaming services, software and cloud computing services can all be transmitted to connected customers anywhere in the world. As a result, many media websites are shifting from building national audiences to global ones; a range of publications, including *The Guardian*, *Vogue* and *BuzzFeed*, attract more than half of their online traffic from foreign countries.³⁵ The COVID-19 pandemic has only strengthened the importance of online commerce.³⁶

Third, digitization is making global flows more inclusive. The near-zero marginal costs of digital communications and transactions open new possibilities for conducting business across borders on a massive scale. So, while trade was previously largely driven by advanced economies and their large multinational companies, digital platforms allow more countries and smaller enterprises to participate. Still, one trend that needs to be carefully considered is the power of the few, as network effects that are intrinsic to digital

³¹ Manyika et al. (2016).

³² Global flows of data primarily consist of information, searches, communications, transactions, video, and intracompany traffic. They underpin and enable virtually every other kind of cross-border flow. Container ships still move products to markets around the world, but now customers order them online, track their movement using RFID codes, and pay for them via digital transactions.

³³ Manyika et al. (2016), at 73 and chapter 4.

³⁴ Manyika et al. (2016), at 7.

³⁵ Manyika et al. (2016).

³⁶ See e.g. WTO, E-Commerce, Trade and the Covid-19 Pandemic, Information Note by the WTO Secretariat, 4 May 2020.

markets often trigger ‘winner-takes-all’ scenarios.³⁷ Companies like *Google*, *Facebook*, *Amazon* and *Apple* have dominant positions in multiple markets and ways to leverage this dominance onto other markets. The vast data assets that these firms possess only make these effects stronger and may call for intervention.³⁸

II. Global value chains

The first concrete effect of digitization on trade that we need to mention are the so-called ‘*global value chains*’ (GVCs). In the last decade, international production, trade and investments have increasingly become organized within these GVCs, where different production stages are located across different countries.³⁹ Production in global value chains is commonly portrayed as the flow of intermediary goods and services being brought together, sold and used. The fast spread of digital technologies and the Internet have been the main driver behind the proliferation of GVCs. They allow manufacturers to manage and optimize complex industrial processes with tasks performed by various partners in different geographical locations.⁴⁰ Again, it is essential for GVCs to function that large quantities of data must be moved across borders. It is interesting to stress in this context, as shown by a study of the Swedish Board of Trade that it is not only large companies, like *Google* or *Facebook*, that rely on data flows but smaller ones do as well. It is also shown that the amount of data that needs to be moved to ensure effective production processes is already now immense.⁴¹ Despite being not an entirely new phenomenon, GVCs have not as yet been properly addressed in trade policies.

III. Growing importance of services trade and servicification

Another, perhaps more sweeping change that can be attributed to digitization and the Internet in particular is the increased trade in services. Services were for a long time thought non-tradable, as it is the nature of many services that their provision coincides with the consumption and requires the physical proximity and interaction of the producer and the consumer (hairdressing being the textbook example). Digitization has changed this. Many services, such as legal, engineering, computer related and financial services, can now be provided online in part or in whole, depending on the nature of the service and the extent to which the domestic regulatory framework permits for it. As mentioned above, 50% of the world’s traded services are already digitized and this opens entirely new opportunities for global trade in services.⁴²

Digitization also strengthens the current trend of ‘servicification’, whereby there is an increase in the use, produce and sale of services.⁴³ This happens as some goods are traded

³⁷ See e.g. Carl Shapiro and Hal R. Varian, *Information Rules* (Boston, MA: Harvard Business School Press, 1999).

³⁸ See e.g. Ariel Ezrachi and Maurice E. Stucke, *Virtual Competition: The Promise and Perils of the Algorithm-driven Economy* (Cambridge, MA: Harvard University Press, 2016); Burri (2019).

³⁹ See e.g. OECD, WTO and World Bank Group, *Global Value Chains: Challenges, Opportunities, and Implications for Policy*, Report prepared for submission to the G20 Trade Ministers Meeting Sydney, 19 July 2014.

⁴⁰ Kommerskollegium, *No Transfer, No Production: Report on Cross-border Data Transfers, Global Value Chains, and the Production of Goods* (Stockholm: Swedish Board of Trade, 2015).

⁴¹ Kommerskollegium (2015).

⁴² See e.g. Daniel Castro and Alan McQuinn, *Cross-border Data Flows Enable Growth in All Industries* (Washington, DC: Information Technology and Innovation Foundation, 2015); Manyika et al. (2016).

⁴³ See e.g. Kommerskollegium, *Everybody Is in Services: The Impact of Servicification in Manufacturing on Trade and Trade Policy* (Stockholm: National Board of Trade, 2012); Rainer Lanz

as services: for example, while software has been typically distributed on a tangible medium (CD), now that same software can be delivered and updated online. The same is true for trade in books, movies and music, where trade in the physical form has been replaced by a cross-border movement of digital content. In addition, many of the newer generation of IT products, such as smartphones, music players or video game consoles, inherently include some sort of support, continuous maintenance or new content, which transcend the purchase of the initial product.

The McKinsey Global Institute has identified another effect of digitization on the relationship between products and services. They argue that the technology component of some goods can fundamentally affect the value of the good. The so-called ‘digital wrappers’, as digital add-ons, can enable or raise the value of other activities: logistics companies use for instance sensors to track physical shipments, reducing losses in transit and enabling more valuable merchandise to be shipped and insured. Online user-generated reviews and ratings increase the level of trust for many individuals, so that these would feel more confident in making cross-border transactions – be it by buying a book on *Amazon* or booking a hotel.⁴⁴ Overall, the relationship between trade in goods and trade in services becomes more complex in the digital space; previous distinctions between goods and services may not be valid any longer and this has regulatory implications under current international trade law.

IV. Implications for domestic regulation

Global digital trade is hard to stop at the border. At the same time, digital content and applications have profound effect on individuals in a certain country as well as on its society as a whole. They may induce certain behavioural patterns, affect the conditions for diversity, social cohesion and democratic practice; they may influence consumer protection, financial stability and safety. They may impact on national security. Overall, digital trade can affect the capacity of domestic regulators to achieve their regulatory aims in many aspects and in many different areas. The increased centrality of data and the importance of cross-border trade flows have brought about a new set of concerns. The sheer volume and the personal nature of the information collected and used can be in themselves worrying.⁴⁵ Big Data methods provide new and powerful means to sort, combine and analyze data. The inherent ability of such technologies to capture sensitive details from information that, to the average customer, might seem mundane or meaningless, is astounding.⁴⁶ Furthermore are the practices behind Big Data often not transparent and, as mentioned above, under the control of few gatekeepers.⁴⁷ Privacy policy reports in the EU, as well as in the US, point out that conventional methods of protecting users, such as anonymization and de-identification, are no longer effective.⁴⁸ The related concerns, such as discrimination or control over individual’s future activities,

and Andreas Maurer, ‘Services and Global Value Chains – Some Evidence on Servicification of Manufacturing and Services Networks’, *WTO Working Paper ERSD 3* (2015).

⁴⁴ Manyika et al. (2016).

⁴⁵ Gasser (2015), at 349.

⁴⁶ Gasser (2015); Daniel J. Solove, ‘A Taxonomy of Privacy’, *University of Pennsylvania Law Review* 154 (2006), 477–560, at 506.

⁴⁷ Gasser (2015), at 343–350.

⁴⁸ See US President’s Advisory Council on Science and Technology, *Big Data and Privacy: A Technological Perspective*, Washington, DC, 2014; European Union Agency for Network and Information Security (ENISA), *Privacy and Data Protection by Design – from Policy to Engineering*, Brussels, 2014.

are multiple. The possible permanence of personal data means also that it can be potentially reused for unanticipated purposes.⁴⁹ Privacy, which is a fundamental right, under international human rights law and under the constitutions of many countries, as well as the EU Charter of Fundamental Rights, is endangered.⁵⁰

Tensions between domestic and global rules in general, and between privacy and free data flows in particular, are bound to increase and policy-makers will need to find appropriate frameworks to balance the trade-offs between these.⁵¹ This may be particularly hard, as the approaches of the US and the EU towards the protection of privacy are at this stage hardly reconcilable.⁵² We address this issue again below.

V. New types of trade barriers

Digital trade has dramatically changed in the last decade. States have reacted to this change and the perils associated with it – such as risks for citizens’ privacy and national security – in a number of ways. Some of them have been associated also with a new palette of measures that inhibit digital trade. A number of studies in the last five years have tried to map and analyze information on these new digital trade barriers.⁵³ In the following, we provide a brief overview combing this available data without giving priority to one particular source.

One of the first comprehensive taxonomies on digital trade barriers was provided by the reports of the United States International Trade Commission (USITC).⁵⁴ Based upon enquiries of industry participants and experts, as well as fieldwork, the reports pointed at several types of non-tariff trade barriers. Some of them can be grouped under the so-called ‘digital trade localization measures’. Others are not strictly trade measures and encompass issues relating to censorship, divergent approaches to data privacy and intellectual property (IP) protection that different countries have adopted, which disrupt in

⁴⁹ Gasser (2015), at 353.

⁵⁰ See e.g. Gasser (2015, 2016); Colin J. Bennett and Robin M. Bayley, ‘Privacy Protection in the Era of “Big Data”: Regulatory Challenges and Social Assessments’, in Bart van der Sloot, Dennis Broeders, and Erik Schrijvers (eds), *Exploring the Boundaries of Big Data* (Amsterdam: University of Amsterdam Press, 2016), 205–227; Burri (2021).

⁵¹ Burri (2021).

⁵² See Case C-362/14, *Maximillian Schrems v. Data Protection Commissioner (Schrems I)*, judgment of 6 October 2015, ECLI:EU:C:2015:650; Case C-311/18, *Data Protection Commissioner v. Facebook Ireland Limited and Maximillian Schrems (Schrems II)*, judgment of 16 July 2020, ECLI:EU:C:2020:559 and the subsequent Case C-311/18, *Data Protection Commissioner v. Facebook Ireland Limited, Maximillian Schrems (Schrems II)*, judgment of 16 July 2020, ECLI:EU:C:2020:559, both of which rendered the agreements for data transfer between the US and EU (Safe Harbor and Privacy Shield respectively) invalid on grounds that there were not enough safeguards and remedies in the US for EU citizens’ data. See also Paul M. Schwartz, ‘The EU-US Privacy Collision: A Turn to Institutions and Procedures’, *Harvard Law Review* 126 (2013), 1966–2009; Paul M. Schwartz and Daniel J. Solove, ‘Reconciling Personal Information in the United States and European Union’, *California Law Review* 102 (2014), 877–916.

⁵³ See e.g. United States International Trade Commission (USITC), *Digital Trade in the US and Global Economies*, Part 1, Investigation No 332–531 (Washington, DC: USITC, 2013); USITC, *Digital Trade in the US and Global Economies*, Part 2, Investigation No 332–540 (Washington, DC: USITC, 2014); Rachel Fefer et al., *Digital Trade and US Trade Policy*, Congressional Research Service, CRS Report R44565, 2017. For a country survey, see Anupam Chander and Uyên P. Lê, ‘Data Nationalism’, *Emory Law Journal* 64 (2015), 677–739. For a dynamic database, see the Digital Trade Estimates Project, available here: <http://ecipe.org/dte/> (last accessed 24 October 2020).

⁵⁴ USITC (2013, 2014), in particular USITC (2013), at chapter 5.

different ways digital trade, increase the cost of doing business and potentially hinder innovation.

Localization measures can be defined as measures that compel companies to conduct certain digital trade-related activities within a country's borders. They may include policies that require data servers to be located within the country; that require local content; government procurement preferences and technology standards that favour local digital companies. Russia, Turkey, China but also a number of other countries have installed a variety of these measures, especially after the 2013 Snowden revelations.⁵⁵ Such policies essentially limit market access and may result in higher costs and sub-optimal processes for foreign firms.⁵⁶ They may be however justified on grounds of privacy or national security protection.

Data privacy and protection measures: Divergent approaches to data privacy and protection can also qualify as a trade barrier. Particularly in the context of the data traffic between the US and the EU, it has been often reported that divergence imposed substantial costs and uncertainty on firms, especially SMEs. In the US, digital industry representatives were particularly keen on finding common ground and interoperability in regulatory approaches to data protection. Here, beyond the US perception, it is perhaps useful to note that too low standards of data protection can also be construed as obstacle to trade, as they do not provide sufficient consumer confidence and trust as a condition for functioning digital trade.

Intellectual property related measures: Representatives of digital content providers and of Internet intermediaries report substantial, although different, IP-related concerns. The content industries, including software, music, movies, books and journals and video games, identify Internet piracy as the single most important barrier to digital trade for their industries (China being the main culprit).⁵⁷ By contrast, representatives of intermediaries are particularly concerned about being held liable for IP infringing or illegal conduct of users of their systems.

Censorship: Censorship permits states to determine what information is accessible in the country and control internal dissent. Censorship has been one of the early Internet barriers and an immediate (although ill-placed) reaction to the borderless nature of the Internet. It has been typical of autocratic states like China and Russia but over the years has proliferated and diversified. It has also become much more sophisticated and far-reaching.⁵⁸ Blocking and filtering of online platforms and content can be compared to customs officials stopping all goods from a particular company at the border. The negative economic effects can be substantial but also those on human rights, in particular on the freedom of expression in both its passive and active nature.⁵⁹

Cybersecurity: The growth in digital trade has raised issues related to cybersecurity, the act of protecting IT systems and their contents from cyberattacks. Cyberattacks in general

⁵⁵ Chander and Lê (2015).

⁵⁶ For a more detailed study, see OECD, *Emerging Policy Issues: Localisation Barriers to Trade*, TAD/TC/WP(2014)17/FINAL, 12 May 2015.

⁵⁷ Other examples include: foreign websites that facilitate IPR infringement; software piracy; circumvention of technological protection measures; cybertheft of trade secrets; trademark infringement related to domain names.

⁵⁸ See e.g. Jonathan L. Zittrain et al., 'The Shifting Landscape of Global Internet Censorship', *Berkman Klein Center Research Publication No. 2017-4*.

⁵⁹ See e.g. Human Rights Council, *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*, Frank La Rue, A/HRC/17/27, 16 May 2011.

are deliberate attempts by unauthorized persons to access IT systems, usually with the goal of theft, disruption, damage or other unlawful actions. Cybersecurity can also be an important tool in protecting privacy and preventing unauthorized surveillance or intelligence gathering.⁶⁰

Border measures: Although not necessarily falling under the category of ‘new’ trade barriers, traditional impediments, such as border measures relating to taxes and shipments and regulatory complexity of border procedures, should not be forgotten, as they can still substantially impede online business, particularly that of SMEs.

Overall, one can maintain that the landscape of digital trade barriers is dynamic and changing over time. Curbing the new ‘digital protectionism’ should be addressed as a priority in policy agendas.

D. Trade policy responses to the digital transformation

Digitization and digital trade do not happen in a regulatory vacuum. Despite the fact that they may call for governance adjustments of different kind and depth, there are existing rules at the international level that they can be subsumed under. The law of the World Trade Organization (WTO) is at the core of this framework, which has been over time complemented by a number of bilateral and regional trade deals of preferential nature. We discuss these rules in turn and try to briefly explain what their relevance for the contemporary digital economy is, where legal adaptation has failed and where countries have managed to formulate some new rules as a response to the digital challenge.

I. The state of WTO Law with regard to digital trade

The WTO membership recognized early on the implications of digitization for trade by launching a Work Programme on E-commerce in 1998.⁶¹ This initiative to examine and, if needed, adjust the rules in the domains of trade in services, trade in goods, IP protection and economic development was far-reaching in scope but due to various reasons did not bear any fruit over a period of two decades. Indeed, WTO law, despite some adjustments through the Information Technology Agreement (ITA), its update in 2015, and the Fourth Protocol on Telecommunications Services, is still in its pre-Internet state.⁶² Despite this lack of legal adaptation, WTO law is not irrelevant. As has been well-documented, the WTO is based on powerful principles of non-discrimination, which can potentially address newer technological developments. WTO law also often tackles issues in a technologically neutral way – for instance, with regard to the application of the basic principles, with regard to standards, trade facilitation, subsidies, and government procurement.⁶³ Moreover, the WTO possesses the advantage of a dispute settlement mechanism that can foster legal evolution.⁶⁴ The path of solution-finding through the

⁶⁰ Fefer et al. (2017).

⁶¹ WTO, Work Programme on Electronic Commerce, WT/L/274 (1998).

⁶² Mira Burri, ‘The International Economic Law Framework for Digital Trade’, *Zeitschrift für Schweizerisches Recht* 135 (2015), 10–72; WTO, *World Trade Report 2018: The Future of World Trade* (Geneva: World Trade Organization, 2018).

⁶³ For a fully-fledged analysis, see Mira Burri and Thomas Cottier (eds), *Trade Governance in the Digital Age* (Cambridge: Cambridge University Press, 2012).

⁶⁴ See e.g. Giorgio Sacerdoti et al. (eds), *The WTO at Ten: The Contribution of the Dispute Settlement System* (Cambridge: Cambridge University Press, 2006).

judicial arm of the WTO, despite the current crisis,⁶⁵ has worked fairly well in the digital trade domain,⁶⁶ in clarifying the WTO law and advancing it further, settling some of these difficult issues upon which the 160+ WTO Members could not reach a compromise.

Despite the utility of the WTO's dispute settlement, illustrated in a number of Internet-related cases, such as *US–Gambling* and *China–Audiovisual Products*,⁶⁷ the lack of political consensus on the substance could not be overcome. A number of important issues remain unresolved and expose the disconnect between the existing WTO rules, in particular under the General Agreement on Trade in Services (GATS), and digital trade practices. A good example in this context are the critical questions of whether previously not existing digital offerings should be classified as goods or services (and thus whether the more binding General Agreement on Tariffs and Trade [GATT] or the GATS apply), and if categorized as services, under the scope of which subsector they would fall. Online games, for instance, as a new type of content platform, could be potentially fitted into the discrete categories of computer and related services, value-added telecommunications services, entertainment, or audiovisual services. This classification is by no means trivial, as it triggers very different obligations for the WTO members, the divergence in commitments being particularly radical between the telecom and the media sectors.⁶⁸ The classification dilemma is only one of many issues discussed in the framework of the 1998 WTO Work Programme on Electronic Commerce that have been left without a solution.⁶⁹ There is, for instance and as a bare minimum for advancing on the digital trade agenda, still no agreement on a permanent moratorium on customs duties on electronic transmissions and their content.⁷⁰

Despite the recent reinvigoration of the E-Commerce Programme with the 2019 Joint Statement Initiative,⁷¹ the feasibility of an agreement that will cover all the pertinent issues that data-driven economy has brought about appears limited.⁷² Against the

⁶⁵ See e.g. Joost Pauwelyn, 'WTO Dispute Settlement Post 2019: What to Expect?', *Journal of International Economic Law* 22 (2019), 297–321.

⁶⁶ Many major GATS cases have had a substantial Internet-related element. See Panel Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (US – Gambling)*, WT/DS285/R, adopted 10 November 2004; Appellate Body Report, *US – Gambling*, WT/DS285/AB/R, adopted 7 April 2005; Panel Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products (China – Publications and Audiovisual Products)*, WT/DS363/R, adopted 12 August 2009; Appellate Body Report, *China – Publications and Audiovisual Products*, WT/DS363/AB/R, adopted 21 December 2009; Panel Report, *China – Certain Measures Affecting Electronic Payment Services (China – Electronic Payment Services)*, WT/DS413/R, adopted 31 August 2012.

⁶⁷ Both *ibid.*

⁶⁸ Rolf H. Weber and Mira Burri, *Classification of Services in the Digital Economy* (Bern: Stämpfli, 2012); Shin-yi Peng, 'Renegotiate the WTO Schedule of Commitments? Technological Development and Treaty Interpretation', *Cornell International Law Journal* 45 (2012), 403–430; Ines Willems, 'GATS Classification of Digital Services – Does "the Cloud" Have a Silver Lining?', *Journal of World Trade* 53 (2019), 59–82.

⁶⁹ Sacha Wunsch-Vincent and Arno Hold, 'Towards Coherent Rules for Digital Trade: Building on Efforts in Multilateral versus Preferential Trade Negotiations', in Mira Burri and Thomas Cottier (eds), *Trade Governance in the Digital Age* (Cambridge: Cambridge University Press, 2012), 179–221.

⁷⁰ The moratorium has only been temporarily extended several times; the last time for a period of two years following a decision taken in 2019.

⁷¹ WTO, Joint Statement on Electronic Commerce, WT/L/1056, 25 January 2019.

⁷² See e.g. Mira Burri, 'Towards a Treaty on Digital Trade', *Journal of World Trade* 55 (forthcoming 2021; on file with author).

backdrop of the ailing multilateral trade forum and the lack of deliberate action, in the course of the past two decades, countries have shifted forums and used preferential trade agreements (PTAs) to address digital trade issues. The next sections look at the solutions found in these treaties with a brief overview of the developments and a deep dive on few newer and particularly far-reaching agreements.

II. Digital trade issues in preferential trade agreements

1. Introduction

The regulatory environment for digital trade has been shaped by PTAs. Out of the 347 PTAs entered into between 2000 and 2019, 185 contain provisions relevant for digital trade; 109 have specific e-commerce provisions and 79 have dedicated e-commerce chapters.⁷³ Although the pertinent rules remain heterogeneous and differ as to issues coverage, level of commitments and the bindingness, it is overall evident that the move towards more, more detailed and more binding provisions on digital trade has intensified significantly over course of the past few years.⁷⁴ This regulatory push in the domain of digital trade can be explained with the increased importance of the issue over time as well as with the proactive role played by the United States.

The US has strongly endorsed its ‘Digital Agenda’⁷⁵ through the PTA channel. The agreements reached since 2002 with Australia, Bahrain, Chile, Morocco, Oman, Peru, Singapore, the Central American countries, Panama, Colombia, South Korea and Japan, all contain critical WTO-plus and WTO-extra provisions in the broader field of digital trade. Importantly, the diffusion of the US template is not limited to US agreements, but can be found in a number of other PTAs as well.⁷⁶ Many, also smaller states, such as Colombia, have become active in the area of data governance; at the same time many other countries, such as those members of the European Free Trade Area (EFTA), are still in the process of developing distinct digital trade strategies. The EU is too a late comer and has in general mirrored in its PTAs the level of commitments under the GATS including only few and mostly cooperation-type of provisions in the area of digital trade. It is only recently with the 2018 EU–Japan EPA and the update of the EU–Mexico Trade Agreement⁷⁷ that the EU has addressed data issues, and again with caution.⁷⁸ The EU has

⁷³ This analysis is based on a dataset of all data-relevant norms in trade agreements (TAPED). See Mira Burri and Rodrigo Polanco, ‘Digital Trade Provisions in Preferential Trade Agreements: Introducing a New Dataset’ *Journal of International Economic Law* 23 (2020), 1–34 and <https://unilu.ch/taped> (last accessed 24 October 2020).

⁷⁴ Presently, digital trade provisions are, on average, included in more than 61% of all PTAs that were concluded in the said period, with an average of 1476 words found in e-commerce chapters and side agreements in the last five years. See Burri and Polanco, *ibid.*; also Ines Willemyns, ‘Agreement Forthcoming? A Comparison of EU, US, and Chinese RTAs in Times of Plurilateral E-Commerce Negotiations’, *Journal of International Economic Law* 23 (2020), 221–244.

⁷⁵ US Congress, Bipartisan Trade Promotion Authority Act of 2001, H. R. 3005, 3 October 2001; Sacha Wunsch-Vincent, ‘The Digital Trade Agenda of the US’, *Aussenwirtschaft* 1 (2003), 7–46; also Henry Gao, ‘Regulation of Digital Trade in US Free Trade Agreements: From Trade Regulation to Digital Regulation’, *Legal Issues of Economic Integration* 45 (2018), 47–70.

⁷⁶ See e.g. Mira Burri, ‘Data Flows and Global Trade Law’ and Manfred Elsig and Sebastian Klotz, ‘Data Flow-Related Provisions in Preferential Trade Agreements: Trends and Patterns of Diffusion’, both in Mira Burri (ed), *Big Data and Global Trade Law* (Cambridge: Cambridge University Press, forthcoming 2020; on file with author).

⁷⁷ The modernized EU-Mexico Trade Agreement will be part of a modernized EU-Mexico Global Agreement, for which an agreement in principle was reached in April 2018.

signalled a repositioning however in the currently negotiated deals with Australia,⁷⁹ New Zealand⁸⁰ and Tunisia,⁸¹ which include in their draft digital trade chapters norms on the free flow of data and data localization bans, and it will be quite interesting to see how things will develop in this context.

The relevant aspects of digital trade governance can be found in: (i) the specifically dedicated e-commerce PTA chapters; (ii) the chapters on cross-border supply of services (in particular in the telecommunications, computer and related, audiovisual, financial services sectors); as well as in (iii) the IP chapters.⁸² In this chapter, the focus is exclusively on the e-commerce chapters, which have been the main source of new rule-making.

The electronic commerce chapters play a dual role in the landscape of trade rules in the digital era. On the one hand, they represent an attempt to compensate for the lack of progress in the WTO and remedy the ensuing uncertainties. On the other hand, the e-commerce chapters also include rules that have not been treated in the context of the WTO negotiations. They seek the promotion and facilitation of e-commerce, by addressing for instance electronic contracts and paperless trading, as well as tackle the emergent regulatory dilemmas with regard to cross-border data flows, new digital trade barriers and other, newer issues, which can encompass questions ranging from cybersecurity to open government data. As to these categories of rules, the variety across PTAs can be great, and while in the first cluster of issues on the facilitation of digital trade, the number of PTAs that contain such rules is substantial,⁸³ only very few agreements have rules on data.⁸⁴ In the following section, the chapter looks at the new rules created in recent agreements through a detailed analysis of the most advanced e-commerce chapters that we have so far – those of the CPTPP and the USMCA.

2. *The Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the United States Mexico Canada Agreement*

⁷⁸ The parties pledge to ‘reassess’ within three years of the entry into force of the agreement, the need for inclusion of provisions on the free flow of data (Article 8.81 EU–Japan EPA). For details on the EU stance, see Mira Burri, ‘The Regulation of Data Flows in Trade Agreements’, *Georgetown Journal of International Law* 48 (2017), 408–448; Jan A. Micallef, ‘Digital Trade in EU FTAs: Are EU FTAs Allowing Cross Border Digital Trade to Reach Its Full Potential?’, *Journal of World Trade* 53 (2019), 855–870.

⁷⁹ Draft text available at: https://trade.ec.europa.eu/doclib/docs/2018/december/tradoc_157570.pdf (last accessed 7 September 2020).

⁸⁰ Draft text available at: https://trade.ec.europa.eu/doclib/docs/2018/december/tradoc_157581.pdf (last accessed 7 September 2020).

⁸¹ Draft text available at:

https://trade.ec.europa.eu/doclib/docs/2019/january/tradoc_157660.%20ALECA%202019%20-%20texte%20commerce%20numerique.pdf (original text in French; last accessed 7 September 2020).

⁸² For analysis of all relevant chapters, see Burri (2017).

⁸³ For instance, 47 PTAs have e-commerce chapters that include provisions to facilitate e-commerce; 45 treaties have specific norms on addressing the needs of SMEs; 56 treaties have norms on paperless trading; 68 PTAs on electronic authentication. For details and listing of all relevant PTAs, see Burri and Polanco (2020).

⁸⁴ Only 12 PTAs have binding rules on data flows. Burri and Polanco, *ibid.*; also Mira Burri, ‘The Governance of Data and Data Flows in Trade Agreements: The Pitfalls of Legal Adaptation’ *UC Davies Law Review* 51 (2017), 65–132.

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) was agreed upon in 2017 between eleven countries in the Pacific Rim⁸⁵ and entered into force on 30 December 2018. Despite the US having dropped out of the agreement with the start of the Trump administration, the CPTPP e-commerce chapter reflects the US efforts to secure obligations on digital trade and is a verbatim reiteration of the e-commerce chapter under the negotiated Trans-Pacific Partnership Agreement (TPP).

In its first part and not unusually for US-led and other PTAs, the CPTPP e-commerce chapter clarifies that it applies ‘to measures adopted or maintained by a Party that affect trade by electronic means’⁸⁶ but excludes from this broad scope (a) government procurement and (b) information held or processed by or on behalf of a Party, or measures related to such information, including measures related to its collection.⁸⁷ For greater certainty, measures affecting the supply of a service delivered or performed electronically are subject to the obligations contained in the relevant provisions on investment and services;⁸⁸ some additional exceptions are also specified.⁸⁹ The following provisions address, again as customarily, some of the leftovers of the WTO E-commerce Programme and provide for the facilitation of online commerce. In this sense, Article 14.3 CPTPP bans the imposition of customs duties on electronic transmissions, including content transmitted electronically, and Article 14.4 endorses the non-discriminatory treatment of digital products,⁹⁰ which are defined broadly pursuant to Article 14.1.⁹¹ Article 14.5 CPTPP is meant to shape the domestic electronic transactions framework by including binding obligations for the parties to follow the principles of the UNCITRAL Model Law on Electronic Commerce 1996 or the UN Convention on the Use of Electronic Communications in International Contracts. Parties must endeavour to (a) avoid any unnecessary regulatory burden on electronic transactions; and (b) facilitate input by interested persons in the development of its legal framework for electronic transactions.⁹² The provisions on paperless trading and on electronic authentication and electronic signatures complement this by securing equivalence of electronic and physical forms. With regard to paperless trading, it is clarified that parties shall endeavour to make trade administration documents available to the public in electronic form and accept trade administration documents submitted electronically as the legal equivalent of the paper version.⁹³ The norm on electronic signatures is more binding and provides that parties shall not deny the legal validity of a signature solely on the basis that the signature is in

⁸⁵ Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam.

⁸⁶ Article 14.2(2) CPTPP.

⁸⁷ Article 14.2(3) CPTPP.

⁸⁸ Article 14.2(4) CPTPP.

⁸⁹ Article 14.2(5) and (6) CPTPP.

⁹⁰ The obligation does not apply to subsidies or grants, including government-supported loans, guarantees and insurance, nor to broadcasting. It can also be limited through the rights and obligations specified in the IP chapter. Article 14.2(3) CPTPP.

⁹¹ Digital product means a computer programme, text, video, image, sound recording or other product that is digitally encoded, produced for commercial sale or distribution, and that can be transmitted electronically. Two specifications in the footnotes apply: (1) digital product does not include a digitized representation of a financial instrument, including money; and (2) the definition of digital product should not be understood to reflect a Party’s view on whether trade in digital products through electronic transmission should be categorized as trade in services or trade in goods.

⁹² Article 14.5(2) CPTPP.

⁹³ Article 14.9 CPTPP.

electronic form,⁹⁴ nor shall they adopt or maintain measures that prohibit parties to an electronic transaction from mutually determining the appropriate authentication methods for that transaction; or prevent such parties from having the opportunity to establish before judicial or administrative authorities that their transaction complies with legal requirements with respect to authentication.⁹⁵

The remainder of the provisions found in the CPTPP e-commerce chapter can be said to belong the second and more innovative category of rule-making that tackles the emergent issues of the data economy. Most importantly, the CPTPP explicitly seeks to restrict the use of data localization measures. Article 14.13(2) prohibits the parties from requiring a ‘covered person to use or locate computing facilities in that Party’s territory as a condition for conducting business in that territory’. The soft language from US–South Korea FTA on free data flows is now framed as a hard rule: ‘[e]ach Party shall allow the cross-border transfer of information by electronic means, including personal information, when this activity is for the conduct of the business of a covered person’.⁹⁶

Measures restricting digital flows or implementing localization requirements are permitted only if they do not amount to ‘arbitrary or unjustifiable discrimination or a disguised restriction on trade’ and do not ‘impose restrictions on transfers of information greater than are required to achieve the objective’.⁹⁷ These non-discriminatory conditions are similar to the strict test formulated by the general exception clauses of Article XIV GATS and Article XX GATT 1994 – a test that is supposed to balance trade and non-trade interests by ‘excusing’ certain violations but is also extremely hard to pass.⁹⁸ The CPTPP test differs from the WTO norms in one significant element: while there is a list of public policy objectives in the GATT and the GATS, the CPTPP provides no such enumeration and simply speaks of a ‘legitimate public policy objective’.⁹⁹ This permits more regulatory autonomy for the CPTPP signatories; it may be linked however to legal uncertainty. Further, it should be noted that the ban on localization measures is softened with regard to financial services and institutions;¹⁰⁰ government procurement is also excluded.¹⁰¹

The CPTPP addresses other novel issues as well – one of them is source code. Pursuant to Article 14.17, a CPTPP Member may not require the transfer of, or access to, source code of software owned by a person of another Party as a condition for the import, distribution, sale or use of such software, or of products containing such software, in its territory.¹⁰² The aim of this provision is to protect software companies and address their concerns

⁹⁴ Article 14.6(1) CPTPP.

⁹⁵ Article 14.6(2) CPTPP.

⁹⁶ Article 14.11(2) CPTPP.

⁹⁷ Article 14.11(3) CPTPP.

⁹⁸ See e.g. Henrik Andersen, ‘Protection of Non-Trade Values in WTO Appellate Body Jurisprudence: Exceptions, Economic Arguments, and Eluding Questions’, *Journal of International Economic Law* 18 (2015), 383–405.

⁹⁹ Article 14.11(3) CPTPP.

¹⁰⁰ See the definition of ‘a covered person’ (Article 14.1 CPTPP), which excludes a ‘financial institution’ and a ‘cross-border financial service supplier’. An annex to the Financial Services chapter has a separate data transfer requirement, whereby certain restrictions on data flows may apply for the protection of privacy or confidentiality of individual records, or for prudential reasons.

¹⁰¹ Article 14.8(3) CPTPP.

¹⁰² The prohibition applies only to mass-market software or products containing such software. This means that tailor-made products are excluded, as well as software used for critical infrastructure and those in commercially negotiated contracts.

about loss of IP or cracks in the security of their proprietary code; it may also be interpreted as a reaction to China's demands to access to source code from software producers selling in its market.

Article 14.8(2) addresses data protection and requires every CPTPP party to 'adopt or maintain a legal framework that provides for the protection of the personal information of the users of electronic commerce'. Yet, there are no standards or benchmarks for the legal framework specified, except for a general requirement that CPTPP parties 'take into account principles or guidelines of relevant international bodies'.¹⁰³ Parties are also invited to promote compatibility between their data protection regimes, by essentially treating lower standards as equivalent.¹⁰⁴ The goal of these norms can be interpreted as a somewhat prioritization of trade over privacy rights, and can be problematic for countries sharing a different understanding of personal data protection.

While the attention is often and understandably focused on data flows and data protection, it should be noted that the CPTPP includes also provisions on consumer protection¹⁰⁵ and spam control.¹⁰⁶ These are however fairly weak. The same is true for the newly introduced rules on cybersecurity.¹⁰⁷ Net neutrality is another important digital economy topic that has been given specific attention in the CPTPP, although the so created rules are of non-binding nature.¹⁰⁸ The norm comes with a number of exceptions from the domestic laws of the CPTPP parties and permits deviations from undefined situations that call for 'reasonable network management' or exclusive services.¹⁰⁹ As the obligations are unlinked to remedies for situations, such as blocking, throttling, discriminating or filtering content, it is unlikely that the CPTPP would lead to uniform approach with regard to net neutrality across the CPTPP countries.

After the withdrawal of the United States from the TPP, there was some uncertainty as to the direction the US will follow in its trade deals in general and on matters of digital trade in particular. The renegotiated NAFTA, which is now referred to as the 'United States Mexico Canada Agreement' (USMCA), casts the doubts aside. The USMCA has a comprehensive e-commerce chapter, which is now also properly titled 'Digital Trade' and follows all critical lines of the CPTPP and creates an even more ambitious template.

With regard to replicating the CPTPP model the USMCA follows the same broad scope of application,¹¹⁰ ban customs duties on electronic transmissions¹¹¹ and binds the parties for non-discriminatory treatment of digital products.¹¹² Furthermore, it provides for a

¹⁰³ Article 14.8(2) CPTPP. A footnote (6) provides some clarification in saying that: '... a Party may comply with the obligation in this paragraph by adopting or maintaining measures such as a comprehensive privacy, personal information or personal data protection laws, sector-specific laws covering privacy, or laws that provide for the enforcement of voluntary undertakings by enterprises relating to privacy'.

¹⁰⁴ Article 14.8(5) CPTPP.

¹⁰⁵ Article 14.17 CPTPP.

¹⁰⁶ Article 14.14 CPTPP.

¹⁰⁷ Article 14.16 CPTPP.

¹⁰⁸ Article 14.10 CPTPP.

¹⁰⁹ Article 14.10(a) CPTPP. Footnote 6 to this paragraph specifies that: 'The Parties recognise that an Internet access service supplier that offers its subscribers certain content on an exclusive basis would not be acting contrary to this principle'.

¹¹⁰ Article 19.2 USMCA.

¹¹¹ Article 19.3 USMCA.

¹¹² Article 19.4 USMCA.

domestic regulatory framework that facilitates online trade by enabling electronic contracts,¹¹³ electronic authentication and signatures,¹¹⁴ and paperless trading.¹¹⁵

The USMCA follows the CPTPP model also with regard to data issues and ensures the free flow of data through a clear ban on data localization¹¹⁶ and a hard rule on free information flows.¹¹⁷ Article 19.11 specifies further that parties can adopt or maintain a measure inconsistent with the free flow of data provision, if this is necessary to achieve a legitimate public policy objective, provided that there is no arbitrary or unjustifiable discrimination nor a disguised restriction on trade; and the restrictions on transfers of information are not greater than necessary to achieve the objective.¹¹⁸ Beyond these similarities, the USMCA introduces some novelties. The first one is that the USMCA departs from the standard US approach and signals abiding to some data protection principles and guidelines of relevant international bodies. Article 19.8 requires from the parties to ‘adopt or maintain a legal framework that provides for the protection of the personal information of the users of digital trade. In the development of its legal framework for the protection of personal information, each Party should take into account principles and guidelines of relevant international bodies, such as the APEC Privacy Framework and the OECD Recommendation of the Council concerning Guidelines governing the Protection of Privacy and Transborder Flows of Personal Data (2013)’.¹¹⁹ The parties also recognize key principles of data protection, which include: limitation on collection; choice; data quality; purpose specification; use limitation; security safeguards; transparency; individual participation; and accountability,¹²⁰ and aim to provide remedies for any violations.¹²¹ This is interesting because it goes beyond what the US may have in its national laws on data protection and also because it reflects some of the principles the European Union has advocated for in the domain of privacy protection. One can wonder whether this is a development caused by the ‘Brussels effect’, whereby the EU ‘exports’ its own domestic standards and they become global,¹²² or whether we are seeing a shift in US privacy protection regimes as well.¹²³

Beyond data protection, three further innovations of the USMCA may be mentioned. The first refers to the inclusion of ‘algorithms’, the meaning of which is ‘a defined sequence of steps, taken to solve a problem or obtain a result’¹²⁴ and has become part of the ban on requirements for the transfer or access to source code in Article 19.16. The second novum

¹¹³ Article 19.5 USMCA.

¹¹⁴ Article 19.6 USMCA.

¹¹⁵ Article 19.9 USMCA.

¹¹⁶ Article 19.12 USMCA.

¹¹⁷ Article 19.11 USMCA.

¹¹⁸ Article 19.11(2) USMCA. There is a footnote attached, which clarifies: A measure does not meet the conditions of this paragraph if it accords different treatment to data transfers solely on the basis that they are cross-border in a manner that modifies the conditions of competition to the detriment of service suppliers of another Party. The footnote does not appear in the CPTPP treaty text.

¹¹⁹ Article 19.8(2) USMCA.

¹²⁰ Article 19.8(3) USMCA.

¹²¹ Article 19.8(4) and (5) USMCA.

¹²² Anu Bradford, ‘The Brussels Effect’, *Northwestern University Law Review* 107 (2012), 1–68; Anu Bradford, *The Brussels Effect: How the European Union Rules the World* (Oxford: Oxford University Press, 2020).

¹²³ See Anupam Chander et al., ‘Catalyzing Privacy Law’, *University of Colorado Law Legal Studies Research Paper* No 19-25 (2019).

¹²⁴ Article 19.1 USMCA.

refers to the recognition of ‘interactive computer services’ as particularly vital to the growth of digital trade. Parties pledge in this sense not to ‘adopt or maintain measures that treat a supplier or user of an interactive computer service as an information content provider in determining liability for harms related to information stored, processed, transmitted, distributed, or made available by the service, except to the extent the supplier or user has, in whole or in part, created, or developed the information’.¹²⁵ This provision is important, as it seeks to clarify the liability of intermediaries and delineate it from the liability of host providers with regard to IP rights’ infringement.¹²⁶ It also secures the application of Section 230 of the US Communications Decency Act,¹²⁷ which insulates platforms from liability but has been recently under attack in many jurisdictions in the face of fake news and other negative developments related to platforms’ power.¹²⁸

The third and rather liberal commitment of the USMCA parties regards open government data. This is truly innovative and very relevant in the domain of domestic regimes for data governance. In Article 19.18, the parties recognize that facilitating public access to and use of government information fosters economic and social development, competitiveness, and innovation. ‘To the extent that a Party chooses to make government information, including data, available to the public, it shall endeavor to ensure that the information is in a machine-readable and open format and can be searched, retrieved, used, reused, and redistributed’.¹²⁹ There is in addition an endeavour to cooperate, so as to ‘expand access to and use of government information, including data, that the Party has made public, with a view to enhancing and generating business opportunities, especially for small and medium-sized enterprises’.¹³⁰

The US approach towards digital trade issues has been confirmed also by the recent US–Japan Digital Trade Agreement (DTA), signed on 7 October 2019, alongside the US–Japan Trade Agreement.¹³¹ The US–Japan DTA can be said to replicate almost all provisions of the USMCA and the CPTPP,¹³² including the new USMCA rules on open

¹²⁵ Article 19.17(2) USMCA. Annex 19-A creates specific rules with the regard to the application of Article 19.17 for Mexico, in essence postponing its implementation for three years.

¹²⁶ On intermediaries’ liability, see e.g. Sonia S. Katyal, ‘Filtering, Piracy, Surveillance and Disobedience’, *The Columbia Journal of Law and the Arts* 32 (2009), 401–426; Urs Gasser and Wolfgang Schulz (eds), *Governance of Online Intermediaries* (Cambridge, MA: Berkman Center for Internet and Society, 2015).

¹²⁷ Section 230 reads: ‘No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider’ and in essence protects online intermediaries that host or republish speech.

¹²⁸ See e.g. Lauren Feine, ‘Big Tech’s Favorite Law Is under Fire’, CNBC, 19 February 2020. For an analysis of the free speech implications of digital platforms, see Jack M. Balkin, ‘Free Speech Is a Triangle’, *Columbia Law Review* 118 (2018), 2011–2055.

¹²⁹ Article 19.18(2) USMCA.

¹³⁰ Article 19.8(3) USMCA.

¹³¹ For the text of the agreements, see: <https://ustr.gov/countries-regions/japan-korea-apeec/japan/us-japan-trade-agreement-negotiations/us-japan-digital-trade-agreement-text> (last accessed 24 October 2020).

¹³² Article 7: Customs Duties; Article 8: Non-Discriminatory Treatment of Digital Products; Article 9: Domestic Electronic Transactions Framework; Article 10: Electronic Authentication and Electronic Signatures; Article 14: Online Consumer Protection; Article 11: Cross-Border Transfer of Information; Article 12: Location of Computing Facilities; Article 16: Unsolicited Commercial Electronic Messages; Article 19: Cybersecurity US–Japan DTA.

government data,¹³³ source code¹³⁴ and interactive computer services,¹³⁵ but notably covering also financial and insurance services as part of the scope of agreement.

E. Assessing the state of affairs in digital trade governance and looking beyond

The data-driven economy poses diverse challenges for policy-makers in the regulation of digital trade. These cannot be addressed by the conventional trade policy stance of seeking reduced tariffs and liberalization of services sectors but require regulatory cooperation and interfacing domestic regimes, so as to provide interoperability and legal certainty. The multilateral forum of the WTO as the core of international economic law and an organization with almost universal membership would be the optimal venue to address digital trade issues – both in the sense of older classification and services regulation issues and newer topics. Yet so far and presumably in the near future, the WTO appears stuck and can deliver neither swift nor comprehensive solutions.¹³⁶ PTAs have served as valuable regulatory laboratories in the meantime that have, albeit in a somewhat patchwork manner, dealt with many of the pertinent issues and advanced a new regulatory model for digital trade. It includes a number of WTO-plus commitments and clarifies some issues that the WTO Members could not agree on, such as the permanent duty-free regime for electronic transactions. The PTAs tackle also and more importantly, certain ‘non-trade’ or ‘WTO-extra’ issues, such as consumer protection, privacy and safeguards for the free flow of data. The closer examination of the CPTPP and the USMCA showed the breadth of the topics covered, as well as the deep intervention of some of the agreed upon norms, such as those related to localization bans and free cross-border data flows. The CPTPP/USMCA template is not however universally accepted – indeed, as mentioned earlier, only very few treaties have rules on data and many countries have chosen a different, less bold, and much more cautious approach towards digital trade, which gives them more policy space domestically and more opportunities to protect their citizens and their sovereignty.¹³⁷

The question of whether trade forums are at all the right ones to address the questions that the data-driven economy has raised is still also open,¹³⁸ as trade forums tend to ‘think’ in terms of trade crossing borders through brick-and-mortar customs houses and incremental innovation through protected investments in production,¹³⁹ and are still very much top-down, state-centred and opaque rule-making venues.¹⁴⁰ It should be underscored in this context that whereas it is evident that digital technologies have had an impact on the economy as well as on social and cultural practices, they have at least equally strongly

¹³³ Article 20 US–Japan DTA.

¹³⁴ Article 17 US–Japan DTA.

¹³⁵ Article 18 US–Japan DTA. A side letter recognizes the differences between the US and Japan’s systems governing the liability of interactive computer services suppliers and parties agree that Japan need not change its existing legal system to comply with Article 18.

¹³⁶ See e.g. Burri (2021).

¹³⁷ See e.g. Burri (2017, 2021); also Gregory Shaffer, ‘Trade Law in a Data-Driven Economy: The Need for Modesty and Resilience’, *UC Irvine Legal Studies Research Paper Series* No 2020-49.

¹³⁸ Shaffer, *ibid.*; Burri (2017).

¹³⁹ Thomas J. Bollyky & Petros C. Mavroidis, *Trade, Social Preferences, and Regulatory Cooperation: The New WTO-Think*, 20 *J. INT’L ECON. L.* 1, 2 (2017).

¹⁴⁰ See e.g. S. Cho and C. R. Kelly, ‘Are World Trading Rules Passé?’, *Vanderbilt Journal of International Law* 53 (2013), 623–666.

affected the law and patterns of governance in general. Governance models have become less state-centred, and there is a proliferation of regulatory forms that involve multiple stakeholders, with varied types of supervisory and controlling functions entrusted to the state.¹⁴¹ Trade law venues need to take into account this evolution and become permeable to multi-stakeholder involvement framed within a transparent framework,¹⁴² which may reduce the general skepticism as to the appropriateness of trade forums and effectively tackle their deficiencies as to democratic participation and accountability. Analogies to Internet Governance processes may be particularly useful in this context.¹⁴³ The recent discourse on AI technologies clearly demands such public engagement and seeks to endorse respect for human autonomy, prevention of harm, fairness and explicability.¹⁴⁴ As data governance is intrinsically linked to the functioning of the Internet as a generative end-to-end platform,¹⁴⁵ it may also be important to consider, and where possible integrate, its underlying and complementary principles of Internet openness, security and privacy,¹⁴⁶ as well as to contemplate the use of middle-out approaches of governance that combine top-down and bottom-up regulation.¹⁴⁷ While the WTO has been so far unresponsive to such governance shifts, PTAs may offer suitable venues, with more open and flexible procedural frameworks and participatory and co-regulatory elements, as the recent Digital Economy Partnership Agreement (DEPA) between Chile, New Zealand and Singapore at least partially suggests.¹⁴⁸ Overall, regulatory cooperation is more likely to adequately develop through multiple channels, a process of ‘learning’ and a combination of hard and soft law.¹⁴⁹

The task of solving the governance dilemmas of digital trade governance is admittedly not easy, as policy-makers would need to often match existing ‘analogue’ regulatory venues with the unpredictable, scruffy, dynamic and open innovation of digital

¹⁴¹ See e.g. V. Mayer-Schönberger, ‘The Shape of Governance: Analyzing the World of Internet Regulation’, *Virginia Journal of International Law* 43 (2003), 605–673; O. Lobel, ‘The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought’, *Minnesota Law Review* 89 (2004), 262–390; C. T. Marsden, *Internet Co-Regulation: European Law, Regulatory Governance and Legitimacy in Cyberspace* (Cambridge: Cambridge University Press, 2011); M. Latzer, N. Just, and F. Saurwein, ‘Self- and Co-Regulation: Evidence, Legitimacy and Governance’, in M. Price and S. Verhulst (eds), *Handbook of Media Law* (Abingdon: Routledge, 2012), 373–397; U. Pagallo, P. Casanovas, and R. Madelin, ‘The Middle-out Approach: Assessing Models of Legal Governance in Data Protection, Artificial Intelligence, and the Web of Data’, *The Theory and Practice of Legislation* 7 (2019), 1–25.

¹⁴² See e.g. WEF.

¹⁴³ See e.g. N. Mishra, ‘Building Bridges: International Trade Law, Internet Governance, and the Regulation of Data Flows’, *Vanderbilt Journal of Transnational Law* 52 (2019), 463–509.

¹⁴⁴ See e.g. Kristina Irion and Josephine Williams, *Prospective Policy Study on Artificial Intelligence and EU Trade Policy* (Amsterdam: The Institute for Information Law, 2019).

¹⁴⁵ See e.g. Richard S. Whitt, ‘A Deference to Protocol: Fashioning a Three-dimensional Public Policy Framework for the Internet Age’, *Cardozo Arts and Entertainment Law Journal* 31 (2013), 689–768, at 717–729.

¹⁴⁶ Jonathan L. Zittrain, *The Future of the Internet – and How to Stop It* (New Haven: Yale University Press, 2008); Richard S. Whitt, ‘A Deference to Protocol: Fashioning a Three-dimensional Public Policy Framework for the Internet Age’, *Cardozo Arts and Entertainment Law Journal* 31 (2013), 689–768, at 717–729.

¹⁴⁷ Mishra (2019).

¹⁴⁸ Latzer et al. (2012); Pagallo et al. (2019).

¹⁴⁹ On the DEPA, see e.g. Burri (2021).

¹⁵⁰ Shaffer (2020).

platforms¹⁵⁰ and data that flows regardless of state borders. At the same time, and this only makes the task more challenging, it is evident that the regulatory framework that will be chosen will have immense effects on innovation.¹⁵¹ Moreover, beyond the province of the economy and even in seemingly technical decision-making – such as on classification, intermediaries’ liability or localization requirements for foreign operators – fundamental rights and vital values like freedom of expression, privacy, fairness, equality of opportunity, and justice, will be affected. One central element of finding a way to move forward in this regard will be to provide viable and working reconciliation mechanisms that can aptly address situations where rights, sovereign interests and international (economic) commitments collide, in particular in the area of privacy protection. As the recent *Schrems II* judgment of the Court of Justice of the European Union with regard to the validity of the EU–US Privacy Shield regulating transatlantic data flows suggests, the situation is bound to remain dynamic and international lawyers have an important role to play in understanding the issues and the impact of the rules on the ground, communicating with other experts and the broader public, and perhaps even innovating in the field of digital trade governance.

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¹⁵⁰ Benkler (2011).

¹⁵¹ See Anupam Chander, ‘How Law Made Silicon Valley’, *Emory Law Journal* 63 (2014), 639–694; see more generally Zittrain (2008).

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