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The Impact of Digitalization on Global Trade Law

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Abstract

The Article explores the transformations triggered by digitalization in the domain of global trade law and seeks to evaluate the nature and the effects of the unfolding legal adaptation in this field of international law. For this purpose, the Article starts by mapping the sweeping effects of digitalization on trade and trade policies. It then turns to the current regulatory framework for digital trade—first, by sketching the state of affairs in the multilateral forum of the World Trade Organization (WTO) and second, by analyzing the more deliberate regulatory responses to the challenge of digitalization formulated in free trade agreements (FTAs), with a particular focus on some more recent advanced models of digital trade regulation. The Article finally seeks to contextualize and assess the impact of the existing legal framework and its adequacy for the contemporary data-driven economy, pointing also at some current deficiencies and potential setbacks going forward.

Keywords: International trade; digitalization; data; WTO law; free trade agreements

A. Introduction

Law and technology have a “dialectical,”¹ mutually dependent relationship, as technological advances have prompted law’s adaptation, and as the legal environment has facilitated, or sometimes hindered, technological innovation in general and discrete developments in particular.² Law’s reactions to technological changes have also varied. Oftentimes the law has tackled new

¹Thomas Cottier, *Technology and the Law of International Trade Regulation*, in THE OXFORD HANDBOOK OF LAW, REGULATION AND TECHNOLOGY 1017–1051, 1017 (Roger Brownsword, Eloise Scotford & Karen Yeung eds., 2017).

²See e.g., John Gerard Ruggie, *International Responses to Technology: Concepts and Trends*, 29 INDUS. ORG. 557 (1975); Thomas Cottier, *The Impact of New Technologies on Multilateral Trade Regulation and Governance*, 73 CHI.-KENT L. REV. 415 (1996); Colin B. Picker, *A View from 40,000 Feet: International Law and the Invisible Hand of Technology*, 23 CARDOZO L. REV. 149 (2001); REGULATING TECHNOLOGIES: LEGAL FUTURES, REGULATORY FRAMES AND TECHNOLOGICAL FIXES (Roger Brownsword & Karen Yeung eds., 2008); Daniel Gervais, *The Regulation of Inchoate Technologies*, 47 HOUS. L. REV. 665 (2010); RULES FOR GROWTH: PROMOTING INNOVATION AND GROWTH THROUGH LEGAL REFORM (Robert E. Litan, Robert Cooter, Aaron S. Edlin, Fran Partnoy & Kauffman Task Force on Law, Innovation, and Growth & Ewing Marion Kauffman Foundation eds., 2011); Mira Burri & Thomas Cottier, *Digital Technologies and International Economic Regulation: An Introduction*, in TRADE GOVERNANCE IN THE DIGITAL AGE 1–14 (Mira Burri & Thomas Cottier eds., 2012); Cottier, *supra* note 1.

situations without any deliberate adjustment by a mere subsumption under existing rules; other times incremental adjustments through case-law or the legislature have been sufficient. Yet, some technologies, of a more disruptive nature and with spillover effects across multiple societal contexts, have demanded more radical changes and real “paradigm shifts” in governance.³ While this classification is theoretically helpful, it should be highlighted that these are not neatly defined categories of legal adaptation and often in practice there is a mixture of legal responses, such as for instance in the area of digital copyright law, where we have all three processes of adaptation involved—subsumption, adaptation through case-law and new acts, as well as the creation of entirely new legal mechanisms, such as those of intermediaries’ liability.⁴ In the context of this Article’s discussion, we should bear in mind, that the first two types of gradual adaptation may not suffice to address the process of digitalization, as it falls under the rare kind of “disruptive technologies” that may demand a more radical rethinking of existing approaches. It is the aim of this Article to explore the changes that digitalization has triggered in one particular area of international law, namely trade law, and to evaluate the nature and the effects of this legal adaptation.

The Article begins with some background notes on digitalization as technological disruption. It then explores the sweeping effects of digitalization on trade and trade policies. The Article then turns to the current regulatory framework for digital trade—first, by sketching the state of affairs under the umbrella of the World Trade Organization (WTO) and second, by analyzing the more deliberate regulatory responses to the challenge of digitalization formulated in free trade agreements (FTAs). The focus here is placed on distinct advanced models of digital trade regulation—those of the Comprehensive and Progressive Agreement for Transpacific Partnership (CPTPP), the United States Mexico Canada Agreement (USMCA), the newer FTA templates of the European Union (EU), as well as the new generation of Digital Economy Agreements (DEAs). The Article finally seeks to contextualize and assess the impact of the existing legal framework and its adequacy for the contemporary data-driven economy, pointing also at some current deficiencies and problems down the road.

B. Digitization as Technological Disruption

While often in policy talks, digitalization is taken as one technology, it is in practice a combination of different technological advances. Digitalization is in essence the ability to express all information, be it audio, text, still or moving images, as binary digits. It frees information from the tangible medium, makes it networkable and easy to manipulate.⁵ Digitalization has allowed computers to talk a common language and led to the emergence of the internet as a network of networks that share bits of data through a common protocol.⁶ As of the 1980s, on top of these technological foundations, a range of new information processing and transmission technologies developed rapidly.⁷ The internet was created as an end-to-end, generative platform that allows “permissionless

³See e.g., Viktor Mayer-Schönberger, *Paradigm Shift*, 40 COMPUT. L. AND SEC. REV. 105, 115 (2021); see also Urs Gasser, *Perspectives on the Future of Digital Privacy*, 134 ZEITSCHRIFT FÜR SCHWEIZERISCHES RECHT 339, 430 (2015) (citing Urs Gasser & Herbert Burkert, *Regulating Technological Innovation: An Information and a Business Law Perspective*, in RECHTLICHE RAHMENBEDINGUNGEN DES WIRTSCHAFTSSTANDORTES SCHWEIZ 503–523 (University of St. Gallen ed., 2007).

⁴See e.g., Matthew Sag, *Internet Safe Harbors and the Transformation of Copyright Law*, 93 NOTRE DAME L. REV. 499 (2016); Gerald Spindler, *Copyright Law and Internet Intermediaries Liability*, in EU INTERNET LAW IN THE DIGITAL ERA 3, 3–25 (Tatiana-Eleni Synodinou, Philippe Jouguez, Christiana Markou & Thalia Prasitou eds., 2020); OXFORD HANDBOOK OF ONLINE INTERMEDIARY LIABILITY (Giancarlo Frosio ed., 2020); Mira Burri & Zaira Zihlmann, *Intermediaries’ Liability in Light of the Recent EU Copyright Reform*, 11 IND. J. OF INTEL. PROP. L. 35 (2021).

⁵See e.g., TERRY FLEW, *NEW MEDIA: AN INTRODUCTION* (2nd. ed. 2014).

⁶For an excellent, not too technical, explanation of all the underlying technologies, see JAMES GRIMMELMANN, *INTERNET LAW* 17–49 (2016).

⁷Metcalfe’s Law states that the value of a network to society is proportional to the square of the number of users of the network. For a great analysis of all these changes, see CONSTANTIJN VAN ORANJE-NASSAU, JONTHAN CAVE, MARTIN VAN DER

innovation.”⁸ As a consequence, we have witnessed in the past decades “an explosion of goods and services in the IT industry,” an amazing amount of new applications, new forms of content creation and communication.⁹

A helpful way of conceptualizing digitalization and thinking about its multiple and multifaceted effects 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 (1) is *widely* used; (2) has *multiple* uses; and (3) has 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 policymakers 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

MANDELE, REBECCA SCHINDLER, SEE YEON HONG, ILIAN ILIEV, & INGO VOGELSANG, RESPONDING TO CONVERGENCE, PREPARED FOR THE DUTCH INDEPENDENT TELECOMMUNICATIONS AND POST REGULATOR 6–7 (2008).

⁸This is a phrase attributed to Vint Cerf, the father of the internet. See Henry Chesbrough & Marshall Van Alstyne, *Permissionless Innovation*, 58 COMM’NS OF THE ACM 24, 24–26 (2015).

⁹JONATHAN L. ZITTRAIN, *THE FUTURE OF THE INTERNET – AND HOW TO STOP IT* (2008).

¹⁰Boyan Jovanovic and Peter L. Rousseau, *General Purpose Technologies*, in HANDBOOK OF ECONOMIC GROWTH 1181–1224 (Philippe Aghion & Steven N. Durlauf eds., 2005).

¹¹Richard S. Whitt & Stephen Schultze, *The New “Emergence Economics” of Innovation and Growth, and What It Means for Communications Policy*, 7 J. OF TELECOMM. & HIGH TECH. L. 217 (2009); Richard S. Whitt, *A Deference to Protocol: Fashioning a Three-dimensional Public Policy Framework for the Internet Age*, 31 CARDOZO ARTS & ENT. L. J. 689, 717–29 (2013).

¹²Whitt & Schultze, *supra* note 11.

¹³James Manyika, Michael Chui, Jacques Bughin, Richard Dobbs, Peter Bisson, & Alex Marrs, *Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy*, 24 (2013) https://www.mckinsey.com/~media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/disruptive%20technologies/mgi_disruptive_technologies_full_report_may2013.pdf.

¹⁴An 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, Chui, Bughin, Dobbs, Bisson, & Marrs, *supra* note 13, at 25; Jeremiah E. Dittmar, *Information Technology and Economic Change: The Impact of the Printing Press*, 126 THE Q. J. OF ECON. 1133 (2011).

¹⁵ZITTRAIN, *supra* note 9.

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 can be 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 effects on other fields—notably, employment.¹⁷ In this sense, policymakers 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. The need for a more radical rethinking of the regulatory environment in light of the disruptive impact of digitalization upon societies has been discussed in a similar manner also in the context of the debates around the “Fourth revolution”¹⁸ or the “Fourth industrial revolution.”¹⁹

The next section sketches selected effects of digitalization upon trade and trade policy. We highlight in particular three aspects of the digital evolution that have caused different regulatory challenges. We look in turn at the (1) process of convergence; (2) the emergence of global value chains; (3) the growing importance of services trade; and (4) the emergence and application of great amounts of data, highlighting some of the particular challenges for trade policymakers and the design of trade treaties. These developments can also be placed on a chronological line, as digitalization has progressed and as we have moved from problems around “trade 2.0,” understood as the plain online sale of goods and services, towards a next generation of issues around the data-driven economy, which can be signified as a “trade 4.0.”²⁰

C. The Effect of Digitalization on Trade

1. Overview of Developments and Trends

Digitalization 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.²¹ It establishes that the world has never been more

¹⁶Yochai Benkler, *Growth-Oriented Law for the Networked Information Economy: Emphasizing Freedom to Operate over Power to Appropriate*, in RULES FOR GROWTH: PROMOTING INNOVATION AND GROWTH THROUGH LEGAL REFORM 314 (Robert E. Litan, Robert Cooter, Aaron S. Edlin, Fran Partnoy, Kauffman Task Force on Law, Innovation, and Growth & Ewing Marion Kauffman Foundation eds., 2011).

¹⁷Manyika, et al., *supra* note 13, at 27 (citing ERIK BRYNJOLFSSON & ANDREW MCAFEE, RACE AGAINST THE MACHINE: HOW THE DIGITAL REVOLUTION IS ACCELERATING INNOVATION, DRIVING PRODUCTIVITY, AND IRREVERSIBLY TRANSFORMING EMPLOYMENT AND THE ECONOMY (2011)).

¹⁸LUCIANO FLORIDI, THE FOURTH REVOLUTION: HOW THE INFOSPHERE IS RESHAPING HUMAN REALITY (2014). Warschauer and Matuchniak talk of digitalization 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 & Tina Matuchniak, *New Technology and Digital Worlds: Analyzing Evidence of Equity in Access, Use, and Outcomes*, 34 REV RSCH. EDUC. 179, 179 (2010).

¹⁹KLAUS SCHWAB, THE FOURTH INDUSTRIAL REVOLUTION (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 upon the Third and is characterized by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres.

²⁰See Mira Burri, *Trade Law 4.0: Are We There Yet?*, 26 J. INT’L ECON. L. 90 (2023).

²¹James Manyika, Susan Lund, Jacques Bughin, Jonathan Woetzel, Kalin Stamenov & Druv Dhingra, *Digital Globalization: The New Era of Global Flows* (2016) <https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/digital%20globalization%20the%20new%20era%20of%20global%20flows/mgi-digital-globalization->

deeply connected by commerce, communication and travel than it is today.²² 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, it is apparent that digitalization 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.²³ 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.²⁴ 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.²⁵ Digitalization 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.²⁶ The COVID-19 pandemic has only strengthened the importance of online commerce.²⁷ Third, digitalization renders 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 markets often trigger “winner-takes-all” scenarios.²⁸ 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, be it in domestic contexts to level the playing field²⁹ or in global contexts to ensure that radical data inequalities do not ensue.³⁰

full-report.ashx; for more recent statistics, see e.g., OECD, *Trade in the Digital Era* (2019) <https://www.oecd.org/going-digital/trade-in-the-digital-era.pdf>.

²²Admittedly the report was published before the Covid-19 pandemic; the effects of online commerce have only been enhanced during the pandemic times.

²³Global 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.

²⁴Manyika, Lund, Bughin, Woetzel, Stamenov & Dhingr, *supra* note 21, at 73 and Chapter 4.

²⁵*Id.* at 7.

²⁶*Id.*

²⁷See e.g., WTO, *E-Commerce, Trade and the Covid-19 Pandemic* (2020) https://www.wto.org/english/tratop_e/covid19_e/ecommerce_report_e.pdf.

²⁸See e.g., CARL SHAPIRO & HAL R. VARIAN, *INFORMATION RULES* (1999).

²⁹This has been reflected in recent legislative efforts of the European Union, such as the Digital Services Act and the Digital Markets Acts. See e.g., ARIEL EZRACHI & MAURICE E. STUCKE, *VIRTUAL COMPETITION: THE PROMISE AND PERILS OF THE ALGORITHM-DRIVEN ECONOMY* (2016); Mira Burri, *Understanding the Implications of Big Data and Big Data Analytics for Competition Law: An Attempt for a Primer*, in *NEW DEVELOPMENTS IN COMPETITION LAW AND ECONOMICS* 241, 241–63 (Klaus Mathis & Avshalom Tor eds., 2019).

³⁰See e.g., Nick Couldry & Ulises A. Mejias, *Data Colonialism: Rethinking Big Data’s Relation to the Contemporary Subject*, 20 *TELEVISION & NEW MEDIA* 319, 336–49 (2019); Angelina Fisher & Thomas Streinz, *Confronting Data Inequality* (IILJ Working Paper No. 1, 2021).

II. Convergence

One of the early regulatory dilemmas that digitalization brought about has to do with the process of *convergence*. The technological advances that drove digitalization, such as increased transmission speed and storage capacity, allowed, as early as the 1990s, for a single or similar set of services, such as TV, phone and internet access, to be offered over different platforms—over cable, satellite or telecommunication networks, as well as enabled the bundling of discrete services onto a single platform.³¹ This naturally triggered the erosion of the previously distinct boundaries between the media, the telecommunications and the information technology (IT) sectors, ultimately leading to a convergence of their products, services and companies. Companies like *Google*, *Facebook* or *Yahoo!* are good examples in this context that not only transcend the conventional sectoral boundaries but also clearly illustrate the power of the few in imposing certain standards worldwide.³²

Convergence is problematic from a regulatory perspective because it makes the existing legal frameworks for telecom and media outdated, especially if they are based upon technology-based classifications. Convergence raises also hard questions about appropriate regulatory design that is capable of reconciling the very different regulatory rationales, histories, rules and actors that these previously distinct sectors had. The reason we have media regulation in place is not the same why we have telecom rules.³³ At the same time, many new services—such as the so-called “over-the-top” services—like *Skype*, *YouTube* or *Netflix*—do not fall under any of the existing regulatory categories, yet effectively serve the same consumer needs and compete in the same markets. The regulator has thus to make important decisions as to the regulatory burden to be imposed on new and old companies, on the degree of competition and the safeguarding of essential societal objectives, such as freedom of speech and access to high quality information.³⁴ We have seen regulatory reforms unfold due to convergence effects—the European Union, for instance, has adopted twice such reform packages and is now in the process of undergoing a third reform as part of its Digital Single Market Strategy.³⁵ At the international level however, there have not been any deliberate regulatory responses—as a result, there is a mismatch between the rule-framework and the market reality.

III. Global Value Chains

One concrete effect of digitalization on trade that must be mentioned 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.³⁶ 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.³⁷ Again, for GVCs to function it is

³¹VAN ORANJE-NASSAU, CAVE, VAN DER MANDELE, SCHINDLER, HONG, ILIEV, & VOGELSANG, *supra* note 7.

³²See e.g., Anupam Chander, *Facebookistan*, 90 N.C. L. REV. 1807 (2012).

³³Broadcasting often had a strong public service rationale, driven by concerns about free speech, diversity of supply, decency, protection of minors, etc. Telecommunications markets were mostly ruled by economic and technical issues, including network access. See VAN ORANJE-NASSAU, CAVE, VAN DER MANDELE, SCHINDLER, HONG, ILIEV & VOGELSANG, *supra* note 7.

³⁴See e.g., VAN ORANJE-NASSAU, CAVE, VAN DER MANDELE, SCHINDLER, HONG, ILIEV & VOGELSANG, *supra* note 7; see also MIRA BURRI, PUBLIC SERVICE BROADCASTING 3.0: LEGAL DESIGN FOR THE DIGITAL PRESENT (2015).

³⁵See generally European Commission, *A Digital Single Market Strategy for Europe* (COM(2015) 192 final), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52015DC0192>.

³⁶See e.g., OECD, WTO and World Bank Group, *Global Value Chains: Challenges, Opportunities, and Implications for Policy* (2014); for a more recent report, see <https://www.oecd.org/industry/global-value-chains/>.

³⁷Kommerskollegium, *No Transfer, No Production: Report on Cross-border Data Transfers, Global Value Chains, and the Production of Goods*, KOMMERSKOLLEGIUM (SWEDISH NAT'L BD. OF TRADE) (2015), <https://www.kommerskollegium.se/en/publications/publications-from-2016-and-older>.

essential that large quantities of data can 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 evident that the amount of data that needs to be moved to ensure effective production processes is already now immense.³⁸ Despite being not an entirely new phenomenon, GVCs have not as yet been properly addressed in trade policies.

IV. Growing Importance of Services Trade and Servicification

Another, perhaps more sweeping, change that can be attributed to digitalization 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 provider and the consumer of a service. Digitalization changes this. Many services, such as legal, engineering, computer related and financial, can now be provided online in part or in their entirety, depending on the nature of the service and the extent to which the domestic regulatory framework permits for it. As mentioned earlier, 50% of the world's traded services are already digitized and this opens entirely new opportunities for global trade in services,³⁹ as again highlighted by the developments during the pandemic.

Digitalization also strengthens the current trend of “servicification,” whereby there is an increase in the use, produce and sale of services.⁴⁰ This happens as some goods are traded as services: for example, while software has been typically distributed on a tangible medium, 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 or video game consoles, inherently include some sort of support, continuous maintenance or new content, which transcend the purchase of the initial product. In addition and also thinking of the app economy, these devices become in essence platforms for selling services.

The McKinsey Global Institute has identified another effect of digitalization 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 additions, 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.⁴¹ 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 the existing international trade law.

³⁸*Id.*; David Nguyen & Marta Paczos, *Measuring the Economic Value of Data and Cross-Border Data Flows: A Business Perspective* (OECD Digit. Econ. Papers No. 297, 2020).

³⁹See e.g., DANIEL CASTRO & ALAN MCQUINN, CROSS-BORDER DATA FLOWS ENABLE GROWTH IN ALL INDUSTRIES (2015); Manyika, Lund, Bughin, Woetzel, Stamenov & Dhingr, *supra* note 21.

⁴⁰See e.g., KOMMERSKOLLEGIUM, EVERYBODY IS IN SERVICES: THE IMPACT OF SERVICIFICATION IN MANUFACTURING ON TRADE AND TRADE POLICY (2012); Rainer Lanz & Andreas Maurer, *Services and Global Value Chains – Some Evidence on Servicification of Manufacturing and Services Networks* (WTO Working Paper ERSD No. 3, 2015).

⁴¹Manyika, Lund, Bughin, Woetzel, Stamenov & Dhingr, *supra* note 21.

V. The New Centrality of Data

Data is a relatively recent buzzword in the contemporary debates of digitally driven economic growth and innovation.⁴² 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.⁴³ Data has become so essential to economic processes that it is said to be the “new oil.”⁴⁴ While this is not entirely a valid statement,⁴⁵ it illustrates well the new centrality of data: 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.⁴⁶ 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.⁴⁷ 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, such as manufacturing, which often have remained shielded from the effects of globalization so far.⁴⁸

The implications of Big Data availability and Big Data analytics are multiple and some of them far-reaching.⁴⁹ 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, nowadays services on *Facebook*, *Twitter* and others are offered for free in return for information.⁵⁰ 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.⁵¹ Big Data has also fueled advances in the area of Artificial Intelligence (AI), as a set

⁴²Although, 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 Digit. Econ. Papers No. 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*, 14 *WORLD TRADE REV.* 671–700 (2015); OECD, *The Evolving Privacy Landscape: 30 Years after the OECD Privacy Guidelines* (OECD Digit. Econ. Papers No. 176, 2011).

⁴³James Manyika, Michael Chui, Brad Brown, Jacques Bughin, Richard Dobbs, Charles Roxburgh & Angela Hung Byers, *Big Data: The Next Frontier for Innovation, Competition, and Productivity* (2011), <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/big-data-the-next-frontier-for-innovation>. 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 & KENNETH CUKIER, *BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK* 13 (2013). For a brief overview of the phenomenon of Big Data and review of the literature, see Burri, *supra* note 29.

⁴⁴*The World’s Most Valuable Resource Is No Longer Oil, but Data*, *THE ECONOMIST* (2017).

⁴⁵See e.g. Jennifer Daskal, *The Un-territoriality of Data*, 125 *YALE L. J.* 326 (2015); Burri, *supra* note 29; for a fully-fledged analysis, see Lauren Henry Scholz, *Big Data Is Not Big Oil: The Role of Analogy in the Law of New Technologies*, 86 *TENN. L. REV.* 863 (2019).

⁴⁶Manyika, Chui, Brown, Bughin, Dobbs, Roxburgh & Hung Byers, *supra* note 42.

⁴⁷See e.g., *id.* See also Mayer-Schönberger & Cukier, *supra* note 43; Nicolaus Henke, Jacques Bughin, Michael Chui, James Manyika, Tamim Saleh, Bill Wiseman & Guru Sethupathy, *The Age of Analytics: Competing in a Data-Driven World* (2016) <https://www.mckinsey.com/~media/mckinsey/industries/public%20and%20social%20sector/our%20insights/the%20age%20of%20analytics%20competing%20in%20a%20data%20driven%20world/mgi-the-age-of-analytics-full-report.pdf>.

⁴⁸See e.g., Manyika, Chui, Brown, Bughin, Dobbs, Roxburgh & Hung Byers, *supra* note 43.

⁴⁹MAYER-SCHÖNBERGER & CUKIER, *supra* note 43.

⁵⁰Henke, Bughin, Chui, Manyika, Saleh, Wiseman & Sethupathy, *supra* note 47, at 26.

⁵¹*Id.*

of self-learning technologies, such as machine learning and deep learning, with potential far-reaching societal effects.⁵²

In the context of trade and trade policies, the growing importance of data for the digital economy has one crucial implication and it is that data must flow across borders. Otherwise, many of the innovations of the data economy and things that we have become accustomed to in everyday life, such as apps, the provision of digital products and services, the outsourcing of services, cloud computing applications or the Internet of Things (IoT) would plainly not function.⁵³ The interdependence between cross-border data flows and digital innovation is critical also for the future, as, for instance, the development of AI hinges on data inputs.⁵⁴

This interdependence puts trade policy under pressure and demands urgent responses. Finding solutions is by no means easy however, as the use of data opens many regulatory questions as to data sovereignty, the protection of privacy, national security and other domestic values and interests.⁵⁵ Tensions between domestic and global rules in general, and between privacy and free data flows in particular, are bound to increase and policymakers will need to find appropriate frameworks to balance the trade-offs between these.⁵⁶ This may be a particularly difficult task, as the approaches of the US and the EU towards the protection of privacy are at this stage hardly reconcilable,⁵⁷ as discussed later in this article.

VI. A New Generation of Trade Barriers

As digital trade profoundly changed in the last decade, states have reacted to this transformation and the noted perils associated with it in a number of ways. Some of these reactions have been linked to a new palette of measures that inhibit digital trade. Recent studies have tried to map and analyze these new digital trade barriers.⁵⁸ In the following, we provide a brief overview combing this available data without giving priority to one particular source.

⁵²See e.g., James Bughin, Jeongmin Seong, James Manyika, Michael Chui & Raol Joshi, *Notes from the AI Frontier: Modeling The Impact of AI on the World Economy* (2018), <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Artificial%20Intelligence/Notes%20from%20the%20frontier%20Modeling%20the%20impact%20of%20AI%20on%20the%20world%20economy/MGI-Notes-from-the-AI-frontier-Modeling-the-impact-of-AI-on-the-world-economy-September-2018.ashx>; The Brookings Institution, *A Blueprint for the Future of AI: 2018–2019* (2019), <https://www.brookings.edu/series/a-blueprint-for-the-future-of-ai/>; World Bank, *World Development Report 2021: Data for Better Lives* (2021), <https://www.worldbank.org/en/publication/wdr2021>; Andrew Perlman, *The Implications of ChatGPT for Legal Services and Society* (Harvard Law School Center on the Legal Profession: The Practice Magazine 2022), <https://clp.law.harvard.edu/knowledge-hub/magazine/issues/generative-ai-in-the-legal-profession/the-implications-of-chatgpt-for-legal-services-and-society/>.

⁵³See Anupam Chander, *National Data Governance in a Global Economy 2* (UC Davis Legal Stud. Rsch. Paper No. 495, 2016); Anupam Chander, *AI and Trade*, in *BIG DATA AND GLOBAL TRADE LAW* 115–27 (Mira Burri ed., 2021).

⁵⁴KRISTINA IRION & JOSEPHINE WILLIAMS, *PROSPECTIVE POLICY STUDY ON ARTIFICIAL INTELLIGENCE AND EU TRADE POLICY* (2019); THE ROYAL SOCIETY, *MACHINE LEARNING: THE POWER AND PROMISE OF COMPUTERS THAT LEARN BY EXAMPLE* (2017).

⁵⁵Gasser, *supra* note 3; Urs Gasser, *Recoding Privacy Law: Reflections on the Future Relationship among Law, Technology, and Privacy*, 130 HARV. L. REV. 61 (2016); Mira Burri & Rahel Schär, *The Reform of the EU Data Protection Framework: Outlining Key Changes and Assessing Their Fitness for a Data-Driven Economy*, 6 J. INFO. POL'Y 479 (2016); Mira Burri, *Interfacing Privacy and Trade*, 53 CASE W. J. INT'L L. 35 (2021); Anupam Chander & Paul M. Schwartz, *Privacy and/or Trade*, 90 U. CHI. L. REV. 49 (2023).

⁵⁶Burri, *supra* note 55.

⁵⁷See Case C-362/14, Maximilian Schrems v. Data Prot. Comm'r, ECLI:EU:C:2015:650 (Oct. 6, 2015); Case C-311/18, Data Prot. Comm'r v. Facebook Ireland Ltd., Maximilian Schrems, ECLI:EU:C:2020:559 (July 16, 2020). Both cases rendered the agreements for data transfer between the United States and EU (Safe Harbor and Privacy Shield respectively) invalid on grounds that the United States did not provide adequate level of personal data protection and 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*, 126 HARV. L. REV. 1966 (2013); Paul M. Schwartz & Daniel J. Solove, *Reconciling Personal Information in the United States and European Union*, 102 CAL. L. REV. 877 (2014).

⁵⁸See e.g., *Digital Trade in the US and Global Economies*, Part 1, Inv. No 332–531, USITC. (2013); *Digital Trade in the US and Global Economies*, Part 2, Inv. No 332–540, USITC. (2014); RACHEL FEFER, SHAYERAH I. AKHTAR, & MICHAEL D. SUTHERLAND,

One of the first comprehensive taxonomies on digital trade barriers was provided by the reports of the United States International Trade Commission (USITC).⁵⁹ 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 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 favor 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.⁶⁰ Such policies essentially limit market access and may result in higher costs and sub-optimal processes for foreign firms.⁶¹ 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 United States, 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 an obstacle to trade, as they do not provide sufficient consumer 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).⁶² 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.⁶³ 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

CONG. RSCH. SERV., R44565, DIGITAL TRADE AND US TRADE POLICY (2017). For a country survey, see Anupam Chander & Uyên P. Lê, *Data Nationalism*, 64 EMORY L. J. 677 (2015); U.S. TRADE REP., 2022 NATIONAL TRADE ESTIMATE REPORT ON FOREIGN TRADE (2022); For a dynamic database, see DIGITAL TRADE ESTIMATES, DIGITAL TRADE ESTIMATES PROJECT, <http://ecipe.org/dte/> (last visited Feb. 22, 2023).

⁵⁹U.S. INT’L TRADE COMM’N, *supra* note 58, at chapter 5.

⁶⁰Chander & Lê, *supra* note 58.

⁶¹For a more detailed study, see ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, EMERGING POLICY ISSUES: LOCALISATION BARRIERS TO TRADE (2015); Javier López González, Francesca Casalini, & Juan Porras, *A Preliminary Mapping of Data Localisation Measures* (OECD Trade Pol’y Paper No. 262, 2022).

⁶²Other 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.

⁶³See e.g., Jonathan L. Zittrain, Robert Faris, Helmi Noman, Justin Clark, Casey Tilton & Ryan Morrison-Westphal, *The Shifting Landscape of Global Internet Censorship* (Berkman Klein Ctr. Rsch. Publication No. 2017-4, 2017).

also those on human rights, in particular on freedom of expression in both its passive and active dimensions.⁶⁴

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 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.⁶⁵

Overall, one can maintain that the landscape of digital trade barriers is dynamic and changing over time. Curbing the new “digital protectionism” should be certainly addressed in policy agendas, potentially through trade treaties.⁶⁶

C. Reflecting Digital Transformations in Global Trade Regulation

Digital trade has not evolved in a regulatory vacuum. Despite the fact that the disruptive changes of digitalization may call for governance adjustments of different kind and depth, there are existing rules at the international level that matter. The law of the multilateral forum of the 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. The Article discusses these rules in turn and reveals what their relevance for the contemporary digital economy is. Furthermore, it asks whether legal adaptation has unfolded and done so in an adequate manner and whether some sort of legal innovation in trade law has occurred to directly address the challenge of digitalization-induced transformations.

I. The Multilateral Regime’s Slow and Insufficient Adaptation

The WTO membership recognized early the implications of digitalization for trade by launching a Work Programme on E-commerce in 1998.⁶⁷ 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.⁶⁸ Despite this lack of legal adaptation, WTO law is not irrelevant. As has been well-documented, the WTO is based on strong principles of non-discrimination, which can potentially address later technological developments. WTO law also often tackles issues in a technologically neutral way—for instance, with regard to the application of the basic principles of most-favored-nation (-MFN-) and national treatment (-NT-), with regard to standards, trade facilitation, subsidies and government procurement.⁶⁹ Moreover, the WTO possesses the advantage of a dispute settlement mechanism that can foster legal evolution.⁷⁰ The path of solution-finding through the judicial arm of the WTO, despite the current crisis,⁷¹ has worked

⁶⁴See e.g., Rep. of the Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression, U.N. Doc. A/HRC/17/27 (2011).

⁶⁵FEFER, AKHTAR, & SUTHERLAND, *supra* note 58.

⁶⁶See e.g., SIMON J. EVENETT & JOHANNES FRITZ, *EMERGENT DIGITAL FRAGMENTATION: THE PERILS OF UNILATERALISM* (2022).

⁶⁷World Trade Organization, *Work Programme on Electronic Commerce*, WTO Doc. WT/L/274 (Sept. 30, 1998).

⁶⁸Mira Burri, *The International Economic Law Framework for Digital Trade*, 135 *ZEITSCHRIFT FÜR SCHWEIZERISCHES RECHT* 10 (2015); WORLD TRADE ORGANIZATION, *WORLD TRADE REPORT 2018: THE FUTURE OF WORLD TRADE* (2018).

⁶⁹For a fully-fledged analysis, see *TRADE GOVERNANCE IN THE DIGITAL AGE* (Mira Burri & Thomas Cottier eds., 2012).

⁷⁰See e.g., *THE WTO AT TEN: THE CONTRIBUTION OF THE DISPUTE SETTLEMENT SYSTEM* (Giorgio Sacerdoti & Alan Yanovich eds., 2006).

⁷¹See e.g., Joost Pauwelyn, *WTO Dispute Settlement Post 2019: What to Expect?*, 22 *J. INT’L ECON. L.* 297 (2019).

fairly well in the digital trade domain,⁷² in clarifying the WTO law and advancing it further, settling some of those difficult issues upon which the 160+ WTO Members could not reach a compromise.

This has, however, been hardly sufficient. A great number of important issues have remained unresolved and exposed 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 those for the telecom and the media sectors.⁷³ 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.⁷⁴ 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.⁷⁵

Despite the recent reinvigoration of the E-Commerce Programme with the 2019 Joint Statement Initiative and the clear negotiating mandate under it,⁷⁶ the feasibility of an agreement that will cover all the pertinent issues that data-driven economy has brought about appears at this point of time somewhat limited. There is likelihood that mostly questions around digital trade facilitation will be squarely addressed in some sort of plurilateral rather than proper multilateral deal and many of the issues around data governance will not be covered in a straightforward manner.⁷⁷ Against the backdrop of the ailing multilateral trade forum and the lack of deliberate action over a period of two decades, countries have shifted forums and used free trade agreements (FTAs) 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 a few newer and particularly far-reaching agreements that helps us get a sense of the emerging regulatory framework for digital trade.

⁷²Many 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*, WTO Doc. WT/DS285/R (adopted Nov. 10, 2004); Appellate Body Report, *US – Gambling*, WTO Doc. WT/DS285/AB/R (adopted Apr. 7, 2005); Panel Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WTO Doc. WT/DS363/R (adopted Aug. 12, 2009); Appellate Body Report, *China – Publications and Audiovisual Products*, WTO Doc. WT/DS363/AB/R (adopted Dec. 21 2009); Panel Report, *China – Certain Measures Affecting Electronic Payment Services*, WT/DS413/R, WTO Doc. (adopted Aug. 31, 2012).

⁷³ROLF H. WEBER & MIRA BURRI, *CLASSIFICATION OF SERVICES IN THE DIGITAL ECONOMY* (2012); Shin-yi Peng, *Renegotiate the WTO Schedule of Commitments? Technological Development and Treaty Interpretation*, 45 CORNELL INT'L L. J. 403 (2012); Ines Willems, *GATS Classification of Digital Services – Does “the Cloud” Have a Silver Lining?*, 53 J. WORLD TRADE 59 (2019).

⁷⁴Sacha Wunsch-Vincent & Arno Hold, *Towards Coherent Rules for Digital Trade: Building on Efforts in Multilateral versus Preferential Trade Negotiations*, in *TRADE GOVERNANCE IN THE DIGITAL AGE* 179, 179–221 (Mira Burri & Thomas Cottier eds., 2012).

⁷⁵The moratorium has only been temporarily extended several times; the last time in 2022 and with serious contestation by some WTO members.

⁷⁶*Joint Statement on Electronic Commerce*, WTO Doc. WT/L/1056 (Jan. 25, 2019).

⁷⁷See e.g., Mira Burri, *Towards a Treaty on Digital Trade*, 55 J. WORLD TRADE 77 (2021); Mira Burri, *A WTO Agreement on Electronic Commerce: An Enquiry into its Substance and Viability*, 53 GEO. J. INT'L L. (2023).

D. Digital Trade Rules in Free Trade Agreements

I. Overview

The proliferation of bilateral and regional trade treaties is a well-documented, albeit not uncontroversial, phenomenon.⁷⁸ Important for this Article's discussion is the fact that an increasing number of these agreements tackle digital trade issues. Out of the 384 FTAs signed between 2000 and December 2022, 167 contain provisions on digital trade and 109 have dedicated electronic commerce chapters.⁷⁹ Although the pertinent rules remain heterogeneous as to scope, level of commitments and bindingness, the trend towards more, more detailed and more binding provisions on digital trade has intensified significantly over course of the past few years. There is also a recent phenomenon of adopting dedicated Digital Economy Agreements (DEAs).⁸⁰ 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, which has sought to implement its "Digital Agenda"⁸¹ in more than a dozen agreements since 2001. The template endorsed by the US has also diffused and can be found in a number of other FTAs.⁸² Other countries, such as those members of the European Free Trade Area (EFTA), and a great number of developing countries are in contrast still in the process of developing distinct digital trade strategies, although some catching up can be observed.⁸³

The relevant aspects of digital trade governance can be found in: (1) the specifically dedicated e-commerce FTA chapters; (2) the chapters on cross-border supply of services, in particular, in the telecommunications, computer and related, audiovisual, financial services sectors; as well as in (3) the chapters on IP protection.⁸⁴ The focus of this Article is on the e-commerce chapters, which have been the main source of new rulemaking and are indicative of the increased attention of trade negotiators paid to digital trade, as well as that it has come to be treated as a cross-sectoral trade topic. The next sections will reveal the importance of these new rules, the shift from classic trade liberalization topics towards ones that are beyond-the-border regulation and effectively shape the domestic regimes relevant for the data-driven economy. The Article's focus is on the most advanced digital trade templates that have emerged only in recent years, in particular those of the -CPTPP- and the -USMCA-, and on the even more recent phenomenon of DEAs, which highlights legal innovation in the area of digital trade corresponding to the enhanced need for regulatory cooperation.

⁷⁸See e.g., JAGDISH BHAGWATI, *TERMITES IN THE TRADING SYSTEM: HOW PREFERENTIAL AGREEMENTS UNDERMINE FREE TRADE* (2008); WILLIAM H. COOPER, CONG. RSCH. SERV. RL31356 *FREE TRADE AGREEMENTS: IMPACT ON US TRADE AND IMPLICATIONS FOR US TRADE POLICY* (2014); *FREE TRADE AGREEMENTS: HEGEMONY OR HARMONY* (Lillian Corbin and Mark Perry eds., 2019).

⁷⁹This analysis is based on a dataset of all electronic commerce and data-relevant norms in trade agreements (TAPED). See Mira Burri & Rodrigo Polanco, *Digital Trade Provisions in Preferential Trade Agreements: Introducing a New Dataset*, 23 J. INT'L ECON. L 187 (2020); for updates, see *Taped: A Dataset of Digital Trade Provisions*, UNIVERSITY OF LUCERNE <https://unilu.ch/taped> (last visited Feb. 26, 2023).

⁸⁰*Id.*; See also Ines Willems, *Agreement Forthcoming? A Comparison of EU, US, and Chinese RTAs in Times of Plurilateral E-Commerce Negotiations*, 23 J. INT'L ECON. L. 221 (2020).

⁸¹H.R. Rep. No. 3005 (2001); Sacha Wunsch-Vincent, *The Digital Trade Agenda of the US*, 1 AUSSENWIRTSCHAFT 7 (2003); see also Henry Gao, *Regulation of Digital Trade in US Free Trade Agreements: From Trade Regulation to Digital Regulation*, 45 LEGAL ISSUES OF ECON. INTEGRATION 46 (2018).

⁸²See e.g., Manfred Elsig & Sebastian Klotz, *Data Flow-Related Provisions in Preferential Trade Agreements: Trends and Patterns of Diffusion*, in *BIG DATA AND GLOBAL TRADE LAW* 42, 42–62 (Mira Burri ed., 2021).

⁸³For instance, the EFTA countries are currently negotiating a DEA with Singapore and African countries are adding a protocol on e-commerce as part of the African Continental Free Trade Area (AfCTA).

⁸⁴For analysis of all relevant chapters, see Mira Burri, *The Regulation of Data Flows in Trade Agreements*, 48 GEO. J. INT'L L. 408 (2017).

II. The Comprehensive and Progressive Agreement for Transpacific Partnership and the United States Mexico Canada Agreement

The Comprehensive and Progressive Agreement for Transpacific Partnership (CPTPP) was agreed upon in 2017 between eleven countries in the Pacific Rim⁸⁵ and entered into force on December 30, 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 previously negotiated Trans-Pacific Partnership Agreement (TPP).

The CPTPP e-commerce chapter has a broad scope of application covering “measures adopted or maintained by a Party that affect trade by electronic means.”⁸⁶ A number of the chapter’s provisions, as commonly for many other FTAs, address some of the leftovers of the WTO E-commerce Programme and provide for the facilitation of online commerce. In this context, 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,⁸⁷ which are defined broadly pursuant to Article 14.1.⁸⁸ Article 14.5 CPTPP goes beyond WTO-discussed issues and 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 endeavor 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.⁸⁹ The provisions on paperless trading and on electronic authentication and electronic signatures complement this by securing equivalence of electronic and physical forms.⁹⁰

The remainder of the provisions found in the CPTPP e-commerce chapter can be said to belong to a more innovative category of rulemaking 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: “Each Party shall allow the cross-border transfer of information by electronic means, including personal information, when this activity is for the conduct of the business of a covered person.”⁹¹ These provisions clearly reflect the new centrality of data for trade that the Article highlighted earlier, as well as show the shift towards more binding norms intended to curb data protectionism.

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

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

⁸⁶Comprehensive and Progressive Agreement for Trans-Pacific Partnership art. 14.2(2), opened for signature Mar. 8, 2018, A.T.S. 23 (entered into force Dec. 30, 2018) [hereinafter CPTPP]. Excluded for the scope are (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. *See also* CPTPP art. 14.2(3), 14.2(3).

⁸⁷The 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. *See* CPTPP art. 14.2(3).

⁸⁸Digital product means a computer program, 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.

⁸⁹CPTPP art. 14.5(2).

⁹⁰CPTPP art. 14.9 & 14.6.

⁹¹CPTPP art. 14.11(2).

achieve the objective.”⁹² These non-discriminatory conditions are very similar to the 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.⁹³ The CPTPP test differs from the WTO norms in one significant element—while there is an exhaustive list of public policy objectives, such as the protection of public moral or public order, in the GATT and the GATS, the CPTPP provides no such enumeration and simply speaks of a “legitimate public policy objective.”⁹⁴ This certainly permits more regulatory autonomy for the CPTPP signatories; it may be linked however to legal uncertainty or unworkable safeguards for domestic constituencies.⁹⁵ In this context, it can be noted that the ways to reconcile economic and non-economic objectives vary across FTAs—while some of them, such as the DEPA that is discussed below, remain close to the WTO general exceptions and simply state that these will be applied *mutatis mutandis*; other treaties like the CPTPP move slightly away from them; while still others, like the new generation of EU FTAs, again looked at below, provide broader carve-outs that secure a lot of policy space for their signatories.

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.⁹⁶ The aim of this provision is to protect software companies and address their concerns 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. Source code provisions appear only in most recent FTAs but do find diffusion across countries, now also being part of EU deals, as an effort to prevent forced technological transfer.

Further in terms of conditioning the domestic regulatory environment, the CPTPP e-commerce chapter includes provisions, albeit in a soft law form, on consumer protection,⁹⁷ spam control,⁹⁸ net neutrality,⁹⁹ as well as newly introduced rules on cybersecurity.¹⁰⁰ Key in addressing and shaping the regulatory conditions for digital trade are the rules with regard to personal data protection. The CPTPP requires parties to “adopt or maintain a legal framework that provides for the protection of the personal information of the users of electronic commerce.”¹⁰¹ While this is an important statement, it comes with no specified benchmarks for the legal framework except for a general requirement that the CPTPP parties “take into account principles or guidelines of relevant international bodies.”¹⁰² Parties are also invited to promote compatibility between their data protection regimes, by essentially treating lower standards as equivalent.¹⁰³ The CPTPP template

⁹²CPTPP art. 14.11(3).

⁹³See e.g., Henrik Andersen, *Protection of Non-Trade Values in WTO Appellate Body Jurisprudence: Exceptions, Economic Arguments, and Eluding Questions*, 18 J. INT’L ECON. L. 288 (2015).

⁹⁴CPTPP art. 14.11(3). It should also be noted that the ban on localization measures is softened with regard to financial services and institutions; government procurement is also excluded. See also CPTPP art. 14.8(3).

⁹⁵As highlighted by the NEW ZEALAND’S WAITANGI TRIBUNAL, REPORT ON THE COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP 132–42 (2021).

⁹⁶The 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.

⁹⁷CPTPP art. 14.17.

⁹⁸CPTPP art. 14.14.

⁹⁹CPTPP art. 14.10.

¹⁰⁰CPTPP art. 14.16.

¹⁰¹CPTPP art. 14.8(2).

¹⁰²CPTPP art. 14.8(2). 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.”

¹⁰³CPTPP art. 14.8(5).

reveals the new importance attached to data protection and how it has in recent years, because of the implications of the data-driven economy, turned into a critical trade negotiation topic. It also shows however that in the US-led model, there seems to be a prioritization of trade over privacy rights, which can be problematic for countries sharing a different understanding of personal data protection.

After the withdrawal of the United States from the TPP and the politics of the Trump Administration, many questions were raised as to whether the US will change its long-established proactive stance on digital trade. The renegotiated NAFTA, which is now referred to as the “United States Mexico Canada Agreement” (USMCA), squarely answered these questions and confirmed that the US continues its liberal approach in the regulation of the digital economy. The USMCA has a comprehensive e-commerce chapter, which is now also properly titled “Digital Trade” and follows all critical lines of the CPTPP creating an even more ambitious template. With regard to replicating the CPTPP model, the USMCA follows the same broad scope of application,¹⁰⁴ bans customs duties on electronic transmissions¹⁰⁵ and binds the parties for non-discriminatory treatment of digital products.¹⁰⁶ Furthermore, it provides for a domestic regulatory framework that facilitates online trade by enabling electronic contracts,¹⁰⁷ electronic authentication and signatures,¹⁰⁸ and paperless trading.¹⁰⁹

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 localization¹¹⁰ and a hard rule on free information flows.¹¹¹ Article 19.11 USMCA 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.¹¹²

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 guidelines of relevant international bodies with a specific reference to the Organisation for Economic Co-operation and Development (OECD) and the Asia-Pacific Economic Cooperation (APEC).¹¹³ 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,¹¹⁴ and aim to provide remedies for any violations.¹¹⁵

¹⁰⁴Agreement between the United States of America, Mexico, and Canada, art. 19.2, Nov. 30, 2018, Office of United States United States Trade Representative, <https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between> [hereinafter USMCA].

¹⁰⁵USMCA art. 19.3.

¹⁰⁶USMCA art. 19.4.

¹⁰⁷USMCA art. 19.5.

¹⁰⁸USMCA art. 19.6.

¹⁰⁹USMCA art. 19.9.

¹¹⁰USMCA art. 19.12.

¹¹¹USMCA art. 19.11.

¹¹²USMCA art. 19.11(2). 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.

¹¹³USMCA art. 19.8(2). The article 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).

¹¹⁴USMCA art. 19.8(3).

¹¹⁵USMCA art. 8(4) & (5).

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”¹¹⁶ and has become part of the ban on requirements for the transfer or access to source code in Article 19.16. The second novum 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.”¹¹⁷ 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.¹¹⁸ It also secures the application of Section 230 of the US Communications Decency Act,¹¹⁹ 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.¹²⁰ 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 USMCA, the parties recognize that facilitating public access to and use of government information fosters economic and social development, competitiveness, and innovation, and commit to ensuring “that the information is in a machine-readable and open format and can be searched, retrieved, used, reused, and redistributed.”¹²¹

The US approach towards digital trade issues has been confirmed also by the subsequent US–Japan Digital Trade Agreement (DTA), signed on October 7, 2019, alongside the US–Japan Trade Agreement. The US–Japan DTA can be said to replicate almost all provisions of the USMCA and the CPTPP,¹²² including the new USMCA rules on open government data,¹²³ source code¹²⁴ and interactive computer services,¹²⁵ but notably covering also financial and insurance services as part of the scope of the agreement. Overall, the CPTPP/USMCA

¹¹⁶USMCA art. 19.1

¹¹⁷USMCA art. 19.17(2). 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.

¹¹⁸On intermediaries’ liability, see e.g., Sonia K. Katyal, *Filtering, Piracy, Surveillance and Disobedience*, 32 COLUM. J. L. & THE ARTS 401 (2009); GOVERNANCE OF ONLINE INTERMEDIARIES (Urs Gasser & Wolfgang Schulz eds., 2015).

¹¹⁹Communications Decency Act, 47 U.S.C. § 230(c)(2) (“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.”).

¹²⁰See e.g., Lauren Feine, *Big Tech’s Favorite Law Is under Fire*, CNBC, Feb. 19, 2020. For an analysis of the free speech implications of digital platforms, see Jack M. Balkin, *Free Speech Is a Triangle*, 118 COLUM. L. REV. 2011 (2018); Mira Burri, *Fake News in Times of Pandemic and Beyond: An Enquiry into the Rationales for Regulating Information Platforms*, in LAW AND ECONOMICS OF THE CORONAVIRUS CRISIS 31–58 (Klaus Mathis & Avishalom Tor eds., 2022). Section 230 DCA is under attack even in the US: see e.g., *Gonzalez v. Google LLC* (Docket 21–1333) and *Twitter Inc. v. Taamneh* (Docket 21–1496), currently before the US Supreme Court.

¹²¹USMCA art. 19.18(2).

¹²²US–Japan DTA art. 7: Customs Administration and Trade Facilitation; art. 19.4: Non-Discriminatory Treatment of Digital Products; art. 19.5: Domestic Electronic Transactions Framework; art. 19.1: Electronic Authentication and Electronic Signatures; art. 19.7: Online Consumer Protection; art. 19.11: Cross-Border Transfer of Information by Electronic Means; art. 19.12: Location of Computing Facilities; art. 19.13: Unsolicited Commercial Electronic Messages; Article 19: Cybersecurity. See US–Japan DTA. Agreement between the United States of America and Japan Concerning Digital Trade, Oct. 7, 2018, Office of United States Trade Representative, https://ustr.gov/sites/default/files/files/agreements/japan/Agreement_between_the_United_States_and_Japan_concerning_Digital_Trade.pdf [hereinafter US–Japan DTA].

¹²³US–Japan DTA art. 20.

¹²⁴US–Japan DTA art. 17, 20.

¹²⁵US–Japan DTA art. 18.

template has been followed by a great number of FTAs and its impact has been so augmented.¹²⁶

III. The EU Approach to Digital Trade

The EU approach to digital trade has not been as ambitious or as coherent as that of the United States. It has also substantially developed over time. The 2002 agreement with Chile was the first to include substantial e-commerce provisions but the language was still cautious and limited to soft cooperation pledges in the services chapter¹²⁷ and in the fields of IT, information society and telecommunications.¹²⁸ In later agreements, such as the 2009 EU–South Korea FTA, the language is somewhat more concrete and takes up some of the issues addressed in US-led agreements, confirms the applicability of the WTO Agreements to measures affecting electronic commerce, as well as subscribes to a permanent duty-free moratorium on electronic transmissions. The EU, as particularly insistent on data protection policies, has also sought commitment of its FTA partners to compatibility with the international standards of data protection.¹²⁹ Cooperation is also increasingly framed in more concrete terms and includes mutual recognition of electronic signature certificates, coordination on internet service providers' liability, consumer protection and paperless trading.¹³⁰

The 2016 EU agreement with Canada—the Comprehensive Economic and Trade Agreement (CETA)—went a step further. The CETA provisions concern commitments ensuring (a) clarity, transparency and predictability in their domestic regulatory frameworks; (b) interoperability, innovation and competition in facilitating electronic commerce; as well as (c) facilitating the use of electronic commerce by small and medium sized enterprises.¹³¹ The EU has succeeded in deepening the privacy commitments and the CETA has a specific norm on trust and confidence in electronic commerce, which obliges the parties to adopt or maintain laws, regulations or administrative measures for the protection of personal information of users engaged in electronic commerce in consideration of international data protection standards.¹³² Yet, there are no deep commitments on digital trade; nor there are any rules on data and data flows.

In this sense, it can be underscored that for a lengthy period of time and in divergence with the United States, the European Union has been rather cautious when inserting rules on data in its free

¹²⁶See e.g., Chile–Uruguay Free Trade Agreement, Apr. 10, 2016, Organization of American States, http://www.sice.oas.org/TPD/CHL_URY/CHL_URY_e.ASP; Agreement to Amend Singapore–Australia Free Trade Agreement, Oct. 12, 2016, Australian Government Department of Foreign Affairs and Trade [https://www.dfat.gov.au/trade/agreements/in-force/safta/singapore-australia-fta#:~:text=The%20Singapore%2DAustralia%20Free%20Trade%20Agreement%20\(SAFTA\)%20is%20a,partner%20in%20South%2DEast%20Asia](https://www.dfat.gov.au/trade/agreements/in-force/safta/singapore-australia-fta#:~:text=The%20Singapore%2DAustralia%20Free%20Trade%20Agreement%20(SAFTA)%20is%20a,partner%20in%20South%2DEast%20Asia); Free Trade Agreement between Argentina and Chile, Feb. 11, 2017, Organization of American States, http://www.sice.oas.org/TPD/ARG_CHL/ARG_CHL_e.ASP; Singapore–Sri Lanka Free Trade Agreement, Jan. 1, 2018, Sri Lanka Department of Commerce http://www.doc.gov.lk/index.php?option=com_content&view=article&id=1&Itemid=130&lang=en; Peru–Australia Free Trade Agreement, Feb. 12, 2018, Organization of American States, http://www.sice.oas.org/Trade/PER_AUS/English/PAFTA_index_PDF_e.asp; Free Trade Agreement between Brazil and Chile, Nov. 11, 2018, Organization of American States, http://www.sice.oas.org/TPD/BRA_CHL/BRA_CHL_e.ASP; Indonesia–Australia Comprehensive Economic Partnership Agreement, Mar. 2019, Australian Government Department of Foreign Affairs and Trade, <https://www.dfat.gov.au/trade/agreements/in-force/iacepa/Pages/ia-cepa-news>.

¹²⁷Agreement Establishing an Association Between European Community and its Member State, of the One Part, and the Republic of Chile, of the Other Part, 2002 O.J. (L. 352), art. 102 [hereinafter EU–Chile FTA], <https://eur-lex.europa.eu/EN/legal-content/summary/eu-chile-association-agreement.html>.

¹²⁸EU–Chile FTA art. 37.

¹²⁹EU–Republic of Korea Free Trade Agreement, 2010 O.J. (L. 127), art. 7.48 [hereinafter EU–South Korea FTA] https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/south-korea_en.

¹³⁰EU–South Korea FTA art. 7.49.

¹³¹EU–Canada Comprehensive Economic and Trade Agreement art. 16.5, Oct. 30, 2016, European Commission, https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/canada/eu-canada-agreement_en [hereinafter CETA].

¹³²CETA art. 16.4.

trade deals. It is only recently that the EU has made a step towards such rules, whereby parties have agreed to consider in future negotiations commitments related to cross-border flow of information. Such a clause is found in the 2018 EU–Japan EPA,¹³³ and in the modernization of the trade part of the EU–Mexico Global Agreement. In the latter two agreements, the Parties commit 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 into the treaty. This “place-holder” is still relatively cautious but it does mark the onset of a process of repositioning of the EU and certain value shift in particular on the issue of data flows. The EU is indeed now willing to subscribe to a regime that endorses free data flows—a position evident in EU’s currently negotiated deals with Australia and Tunisia, as well as in the recently signed agreement with New Zealand, which include in their digital trade chapters norms on the free flow of data and data localization bans. This repositioning and newer commitments are, however, also linked with high levels of data protection,¹³⁴ which signifies a unique position of the Union as a champion of privacy in the area of digital trade.

The EU wishes to permit data flows only if coupled with the high data protection standards of its General Data Protection Regulation (GDPR).¹³⁵ In above noted treaties, as well as in the EU proposal for WTO rules on electronic commerce,¹³⁶ the EU follows a distinct model of endorsing and protecting privacy as a fundamental right. On the one hand, the EU and its partners seek to ban data localization measures and subscribe to a free data flow, but on the other hand, these commitments are conditioned: first, by a dedicated article on data protection, which clearly states that: “Each Party recognises that the protection of personal data and privacy is a *fundamental right* and that high standards in this regard contribute to trust in the digital economy and to the development of trade,”¹³⁷ followed by a paragraph on data sovereignty: “Each Party may adopt and maintain the safeguards it deems appropriate to ensure the protection of personal data and privacy, including through the adoption and application of rules for the cross-border transfer of personal data. Nothing in this agreement shall affect the protection of personal data and privacy afforded by the Parties’ respective safeguards.”¹³⁸ The EU also wishes to retain the right to see how the implementation of the FTA with regard to data flows influences the conditions of privacy protection, so there is a review possibility within three years of the entry into force of the agreement and parties remain free to propose to review the list of restrictions at any time.¹³⁹ In addition, there is a broad carve-out, in the sense that: “The Parties reaffirm the right to regulate within their territories to achieve legitimate policy objectives, such as the protection of public health, social services, public education, safety, the environment including climate change, public morals, social

¹³³EU–Japan Economic Partnership Agreement art. 8.81, July 17, 2018, European Commission, https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/japan/eu-japan-agreement_en.

¹³⁴See European Commission, *Horizontal Provisions for Cross-Border Data Flows and for Personal Data Protection in EU Trade and Investment Agreements* (2007), https://trade.ec.europa.eu/doclib/docs/2018/may/tradoc_156884.pdf.

¹³⁵Regulation 2016/679, of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), 2016 O.J. (L 119/1) [hereinafter GDPR].

¹³⁶*Joint Statement on Electronic Commerce, EU Proposal for WTO Disciplines and Commitments Relating to Electronic Commerce, Communication from the European Union*, WTO Doc. INF/ECOM/22 (Apr. 26, 2019).

¹³⁷See e.g., EU–Australia Free Trade Agreement Proposal art. 6(1), 2022, <https://circabc.europa.eu/ui/group/09242a36-a438-40fd-a7af-fe32e36cbd0e/library/0815393f-fe51-4554-9e25-ac124dcddb75/details> [hereinafter draft EU–Australia FTA]. The same wording is found in the draft EU–Tunisia FTA and the signed EU–New Zealand FTA. See EU–Tunisia Deep and Comprehensive Free Trade Area, European Commission, https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/tunisia/eu-tunisia-dcfta-documents_en [hereinafter EU–Tunisia FTA]; EU–New Zealand Free Trade Agreement, June 30, 2022, European Commission, https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/new-zealand/eu-new-zealand-agreement/text-agreement_en [hereinafter EU–NZ FTA].

¹³⁸See e.g., draft EU–Australia FTA art. 6(2). The same wording is found in the draft EU–Tunisia FTA and the signed EU–New Zealand FTA.

¹³⁹See e.g., draft EU–Australia FTA art. 5(2). The same wording is found in the draft EU–Tunisia FTA and the signed EU–New Zealand FTA.

or consumer protection, privacy and data protection, or the promotion and protection of cultural diversity.”¹⁴⁰ The EU thus reserves ample regulatory leeway for its current and future data protection measures. The exception is also fundamentally different than the objective necessity test under the CPTPP and the USMCA, or that under WTO law, because it is subjective and safeguards the EU’s right to regulate.¹⁴¹

The current EU approach, which has been also confirmed by the post-Brexit Trade and Cooperation Agreement (TCA) with the United Kingdom,¹⁴² is interesting in the way it balances the support for an open data-driven economy and in this sense converges with the liberal stance shared by the US and other countries like Japan, Singapore, Australia and New Zealand, while at the same time carving out a lot of policy space for domestic values and the endorsement of key fundamental rights, notably in the area of personal data protection.

III. Digital Economy Agreements

The need to tackle digital transformations through enhanced regulatory cooperation has become particularly evident in the last couple of years through the adoption of the so-called Digital Economy Agreements (DEAs)—a new phenomenon in the landscape of digital trade regulation. So far five such agreements have been agreed upon: the above mentioned 2019 US–Japan Digital Trade Agreement; the 2020 Singapore–Australia DEA; the 2020 Digital Economy Partnership Agreement (DEPA) between Chile, New Zealand and Singapore; the 2021 Korea–Singapore DEA; and the 2022 UK–Singapore DEA. It should be noted that the DEAs are in most cases linked to an existing or in parallel adopted trade agreement; only in the case of the DEPA, do we have a stand-alone agreement. This section looks more closely at the DEPA to illustrate the development of DEAs, which tend to share a common template.

The DEPA seeks to address the broader issues of the digital economy. In this sense, its scope is wide, flexible and covering several emergent issues, such as those in the areas of AI and digital inclusion. The agreement, and unlike other DEAs, is also not a closed deal but one that is open to other countries,¹⁴³ and the DEPA is meant to complement the WTO negotiations on e-commerce and build upon the digital economy work underway within APEC, the OECD and other international forums. To enable flexibility and cover a wide range of issues, the DEPA follows a modular approach including sixteen different modules.¹⁴⁴

¹⁴⁰See e.g., draft EU–Australia FTA art. 2. The same wording is found in the draft EU–Tunisia FTA and the signed EU–New Zealand FTA.

¹⁴¹Svetlana Yakovleva, *Privacy Protection(ism): The Latest Wave of Trade Constraints on Regulatory Autonomy*, 74 UNIV. MIAMI L. REV. 416, 496 (2020).

¹⁴²Trade and Cooperation Agreement Between the European Union and the European Atomic Energy Community, of the One Part, and the United Kingdom of Great Britain and Northern Ireland, of the Other Part, 2021 OJ (L. 149/10) [hereinafter TCA]. The TCA has one notable difference to the other EU deals in that data protection is not mentioned as a fundamental right, as this was not deemed necessary, since the UK is a signatory to the European Convention on Human Rights and has incorporated it through the Human Rights Act of 1998 into its domestic law.

¹⁴³Digital Economy Partnership Agreement art. 16.2, Jun. 11, 2020, New Zealand Foreign Affairs & Trade, <https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/digital-economy-partnership-agreement-depa/depa-text-and-resources/> [hereinafter DEPA].

¹⁴⁴After Module 1, specifying general definitions and initial provisions, Module 2 focuses on “Business and Trade Facilitation;” Module 3 covers “Treatment of Digital Products and Related Issues;” Module 4 “Data Issues;” Module 5 “Wider Trust Environment;” Module 6 “Business and Consumer Trust;” Module 7 “Digital Identities;” Module 8 “Emerging Trends and Technologies;” Module 9 “Innovation and the Digital Economy;” Module 10 “Small and Medium Enterprises Cooperation;” and Module 11 “Digital Inclusion.” The rest of the modules deal with the operationalization and implementation of the DEPA and cover common institutions (Module 12); exceptions (Module 13); transparency (Module 14); dispute settlement (Module 15); and some final provisions with regard to amendments, entry into force, accession and withdrawal (Module 16).

The type of rules varies across the different modules. On the one hand, all rules of the CPTPP are replicated, some of the USMCA rules, such as the one on open government data,¹⁴⁵ but not source code, and some of the US–Japan DTA provisions, such as the one on ICT goods using cryptography,¹⁴⁶ have been included too. On the other hand, there are many other so far unknown to trade agreement rules that try to facilitate the functioning of the digital economy and enhance cooperation on key issues. So, for instance, Module 2 on business and trade facilitation includes, next to the standard CPTPP-like norms,¹⁴⁷ additional efforts “to establish or maintain a seamless, trusted, high-availability and secure interconnection of each Party’s single windows to facilitate the exchange of data relating to trade administration documents, which may include: (a) sanitary and phytosanitary certificates and (b) import and export data.”¹⁴⁸ Parties have also touched upon other important issues around digital trade facilitation, such as electronic invoicing; express shipments and clearance times; logistics and electronic payments.¹⁴⁹ DEPA’s Module 8 on emerging trends and technologies is also particularly interesting to mention, as it highlights a range of key topics that demand attention by policymakers, such as in the areas of fintech and AI. In the latter domain, the parties agree to promote the adoption of ethical and governance frameworks that support the trusted, safe, and responsible use of AI technologies, and in adopting these AI Governance Frameworks parties would seek to follow internationally-recognized principles or guidelines, including explainability, transparency, fairness, and human-centered values.¹⁵⁰ The DEPA parties also recognize the interfaces between the digital economy and government procurement and broader competition policy and agree to actively cooperate on these issues.¹⁵¹ Along this line of covering wider policy matters to create an enabling environment that is also not solely focused on and driven by economic interests, the DEPA deals with the importance of a rich and accessible public domain¹⁵² and digital inclusion, which can cover enhancing cultural and people-to-people links, including between Indigenous Peoples, and improving access for women, rural populations, and low socio-economic groups.¹⁵³ This is indicative of the shifting of values when attempting to regulate digitalization, which clearly goes beyond the economic domain and affects a great number of broader societal issues.

Overall, the DEPA is a unique and future-oriented project that covers well the broad range of issues that the digital economy impinges upon and offers a good basis for harmonization and interoperability of domestic frameworks and international cooperation that adequately takes into account the complex challenges of contemporary data governance that has essential trade but also non-trade elements. This modularity approach is not isolated and has been followed also in the Singapore–Australia Digital Economy Agreement (SADEA), which next to the treaty text regulates the modalities of cooperation through discrete Memoranda of Understandings (MoU) attached to the agreement.¹⁵⁴

¹⁴⁵DEPA art. 19.4.

¹⁴⁶DEPA art. 3.4. The article also provides detailed definitions of cryptography, encryption, and cryptographic algorithm and cipher.

¹⁴⁷DEPA art. 2.2: Paperless Trading & art. 2.3: Domestic Electronic Transactions Framework.

¹⁴⁸DEPA art. 2.2(5). “Single window” is defined as a facility that allows Parties involved in a trade transaction to electronically lodge data and documents with a single-entry point to fulfil all import, export and transit regulatory requirements (DEPA art. 2.1).

¹⁴⁹DEPA art. 2.5, 2.6, 2.4 & 2.7.

¹⁵⁰DEPA art. 8.2(2).

¹⁵¹DEPA art. 8.3 & 8.4.

¹⁵²DEPA art. 9.2.

¹⁵³DEPA art. 11.2.

¹⁵⁴See SADEA, MoU on Cooperation on Artificial Intelligence; MoU on Cooperation for Electronic Invoicing; MoU on Cooperation in the Field of Digital Identity; MoU on Cooperation in Personal Data Protection; MoU on Data Innovation; MoU on Electronic Certification Cooperation; MoU on Trade Facilitation.

IV. Appraisal of the Trade Law's Responses to Digitalization and Outlook

Digitalization has triggered diverse and often hard to address challenges for policymakers in the regulation of trade. The conventional trade policy stance of seeking reduced tariffs and further liberalization of services sectors does not suffice and there is a clear demand for enhanced regulatory cooperation that interfaces domestic regimes and provides for legal certainty. The multi-lateral 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. It has been in particular recently argued that this is not only because of the nature of the WTO rules, which are multilateral and this suits better the global nature of the data-driven economy, but also because the WTO can offer both shallow integration of the many and modalities for deeper integration of the willing fewer.¹⁵⁵

Yet so far and presumably in the near future, the WTO appears somewhat stuck and can deliver neither swift nor comprehensive solutions.¹⁵⁶ FTAs have served as valuable regulatory laboratories in the meantime that have, although in a fragmented 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. More importantly, the FTAs tackle certain “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, some countries, such as the EU Member States, have chosen a more cautious approach towards digital trade, which gives them policy space domestically and more opportunities to protect their citizens and their sovereignty.¹⁵⁷

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,¹⁵⁸ as trade forums are top-down, state-centered and opaque rulemaking venues¹⁵⁹ and tend to be “analogue” in nature conceptualizing trade in terms of crossing borders through brick-and-mortar customs houses and incremental innovation through protected investments in production.¹⁶⁰ It should be highlighted in this context that whereas it is evident that digital technologies have affected the economy as well as on social and cultural practices, they have also strongly affected the law and patterns of governance in general. Governance models have become less state-centered, and there is a proliferation of regulatory forms that involve multiple stakeholders, with varied types of supervisory and controlling functions entrusted to the state.¹⁶¹ Trade law venues need to take into account this evolution and

¹⁵⁵Robert W. Steiger, *Does Digital Trade Change the Purpose of a Trade Agreement?* (Nat'l Bureau of Econ. Rsch., NBER Working Paper No. 29578, 2021) (arguing for a low level of integration as under the GATT); Bernard Hoekman & Charles Sabel, *Plurilateral Cooperation as an Alternative to Trade Agreements: Innovating One Domain at a Time*, 12 GLOB. POL'Y 49 (2021) (arguing for a variable geometry and plurilateral cooperation).

¹⁵⁶See e.g., Burri, *supra* note 76.

¹⁵⁷See e.g., Burri, *id.*; see also Gregory Shaffer, *Trade Law in a Data-Driven Economy: The Need for Modesty and Resilience*, in ARTIFICIAL INTELLIGENCE AND INTERNATIONAL ECONOMIC LAW: DISRUPTION, REGULATION, AND RECONFIGURATION 29–53. (Shin-yi Peng, Ching-Fu Lin & Thomas Streinz eds., 2021).

¹⁵⁸Shaffer, *id.*; Mira Burri, *The Governance of Data and Data Flows in Trade Agreements: The Pitfalls of Legal Adaptation*, 51 UC DAVIS L. REV. 65 (2017); Kristina Irion, Margot E. Kaminski & Svetlana Yakovleva, *Privacy Peg, Trade Hole: Why We (Still) Shouldn't Put Data Privacy in Trade Law*, U. CHI. L. REV. ONLINE (2023), <https://lawreviewblog.uchicago.edu/2023/03/27/irion-kaminski-yakovleva/>.

¹⁵⁹See e.g., Sungjoon Cho & Claire R. Kelly, *Are World Trading Rules Passé?*, 53 VAND. J. INT'L L. 623 (2013).

¹⁶⁰Thomas J. Bollyky & Petros C. Mavroidis, *Trade, Social Preferences, and Regulatory Cooperation: The New WTO-Think*, 20 J. INT'L ECON. L. 1 (2017).

¹⁶¹See e.g., Viktor Mayer-Schönberger, *The Shape of Governance: Analyzing the World of Internet Regulation*, 43 VA. J. INT'L L. 605 (2003); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*,

become permeable to multi-stakeholder involvement framed within a more transparent framework, which may reduce 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.¹⁶² While the WTO has been so far unresponsive to such governance shifts, FTAs may offer suitable venues, with more open and flexible procedural frameworks and participatory and co-regulatory elements, as the DEPA discussed above and the new generation of DEAs suggest.

It is overall apparent that digitalization has had a deep impact on global trade regulation and that the governance landscape is highly dynamic with a number of evolving innovative processes and a number of pronounced contestations, in particular in the area of data flows and privacy protection. These developments and the processes of institutional “learning” are bound to continue¹⁶³ and may also affect the broader field of international economic law and its adaptation.¹⁶⁴ Striving for equity and inclusiveness should be properly embedded in these institutional developments.

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¹⁶²See e.g., Neha Mishra, *Building Bridges: International Trade Law, Internet Governance, and the Regulation of Data Flows*, 52 VAND. J. TRANSNAT'L L. 463 (2019).

¹⁶³Shaffer, *supra* note 156.

¹⁶⁴See e.g., Hoekman & Sabel, *supra* note 154.