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DIGITIZATION, REGULATORY BARRIERS AND SUSTAINABLE DEVELOPMENT

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DIGITIZATION, REGULATORY BARRIERS AND SUSTAINABLE DEVELOPMENT

Mira Burri and Kholofelo Kugler

Abstract

The digital economy and digitization in general have long been touted as environmentally sustainable alternatives to physical commercial activity. The truth is more nuanced than that. Nevertheless, a broader framing of sustainable development, as outlined in the UN Sustainable Development Goals, indicates that sustainability goes beyond just environmental considerations and encompasses social and economic dimensions as well. The digital economy has the advantage of relatively low barriers to entry and reduced costs, which can lead to enhanced economic and social inclusion. However, the proliferation of digital protectionism through increasing regulatory barriers threaten the envisioned sustainable development dividends of digitization. In this paper, we identify and analyze these regulatory barriers, map and propose potential solutions, and argue that despite the decline in the World Trade Organization's formal negotiating power, it can still play a crucial role in convening and contextualizing international developments to ensure that the digital economy is leveraged optimally as a tool for sustainable development.

Keywords: digital trade, digitization, sustainable development, regulatory barriers, trade agreements, international cooperation, World Trade Organization

1. Introduction

"Sustainable development" as a concept first appeared in the Brundlandt Report.[1] It was loosely defined as ensuring that present needs are met "without compromising the ability of future generations to meet their own needs".[2] The report also stresses that "sustainable development" is a goal not just for developing countries but for developed ones as well.[3] In its most modern and recognizable form, "sustainable development" has been captured, and broadly construed, in the 17 United Nations' (UN) Sustainable Development Goals (SDGs). In addition to the traditional and pressing environmental protection and climate action (SDGs 13–15), it also includes reducing poverty (SDG 1), gender equality (SDG 5), decent work and economic growth (SDG 8), and reduced inequalities within and among

[1] World Commission on Environment and Development (WCED). (1987). (rep.). *Our Common Future*. Oxford: Oxford University Press. (*hereinafter* WCED (1987))
[2] WCED (1987) at para. 27.
[3] WCED (1987) at para. 10.

countries (SDG 10).[4] In other words, there is a global recognition that our collective futures depend on not only living in a world that can physically sustain us but also in one where we can sustain ourselves, including by decreasing inequality.

When considering the relationship between the digital economy and sustainable development, this broader view of sustainability, one that captures the "triple bottom line" perspective (environmental, social, and economic sustainability) must be adopted.[5] The environmental aspects of sustainability are crucial and have been discussed extensively in the other white paper contributions. Our paper focuses, in contrast, on the broader threats of and solutions to sustainability that the digital economy can contribute. The paper thus develops as follows: in section 2, we provide an overview of how the digital economy can contribute to or detract from sustainable development. In section 3, we identify new trade barriers that jeopardize the digital economy's ability to contribute to sustainable development and discuss possible solutions. In section 4, we offer some insights on the status of current negotiations on e-commerce/digital trade and explore some options that could support sustainable development. Finally, in section 5, we conclude and reflect on how rulemaking on digital economy issues can effectively incorporate sustainable development.

2. The digital economy as a risk and a benefit factor for sustainable development

The case for adopting universal access to information and communication technology (ICT) to advance sustainable development is apparent. According to the World Economic Forum (WEF), an increase in the digitization of a country by 10% would lead to a GDP per capita increase of 0.75%, and a concomitant 1.02% decrease in the unemployment rate.[6] In the same vein, the Organisation of Economic Cooperation and Development (OECD) reports that ICT plays a major role in poverty reduction by, inter alia, creating new sources of income and new jobs.[7]

Digitization also makes global trade more inclusive. The near-zero marginal costs of digital communications and transactions open new possibilities for conducting business across borders on a massive scale. While trade was previously for the most part driven by advanced economies and their large multinational

[4] United Nations. (n.d.). *The 17 Goals | Sustainable Development*. United Nations. Retrieved April 11, 2023, from https://sdgs.un.org/goals.
[5] Bohnsack, R., Bidmon, C. M., & Pinkse, J. (2021). Sustainability in the Digital Age: Intended and Unintended Consequences of Digital Technologies for Sustainable Development. *Business Strategy and the Environment*, *31*(2), 599–602. https://doi.org/10.1002/bse.2938.
[6] Sabbagh, K., Friedrich, R., El-Darwiche, B., Singh, M., & Koster, A. (2013). Digitization for Economic Growth and Job Creation: Regional and Industry Perspectives. In Bilbao-Osorio, B., Dutta, S., Lanvin, B., (eds) *The Global Information Technology Report 2013 Growth and Jobs in a Hyperconnected World* (p. 36). Retrieved April 11, 2023, from https://www3.weforum.org/docs/WEF_GITR_Report_2013.pdf .
[7] OECD. (2010). ICTs for Development: Improving Policy Coherence. OECD Publications Centre.

companies, digital platforms allow more countries and smaller enterprises to participate.[8] The far-reaching effects of e-commerce were only enhanced during and after the COVID-19 pandemic. In 2020, B2C e-commerce accounted for 18% of global retail sales. It is forecast to grow annually by 1%, reaching nearly 22% in 2024.[9] The biggest markets and growth potential in e-commerce are in developing countries, particularly Asian nations like China, Indonesia, Vietnam, and the Philippines.[10] Furthermore, bridging the *gender* digital divide seeks to fulfil SDG 5 (gender equality). The OECD found that providing digital skills and access for women specifically to the Internet and digital platforms, mobile phones, and electronic payments, offers "leapfrog" opportunities for all, and has the potential to improve the lives of women and girls in particular.[11]

However, aspects of the digital economy also threaten sustainable development. While digitization of economic activity, including e-commerce, has been touted as a climate friendly option, this perception is only partially true and, ironically, the COVID-19 pandemic created the perfect laboratory to study the environmental impact of e-commerce.[12] Of course, fewer shopping trips and maintaining a website as opposed to brick and mortar shops help to reduce and greenhouse gas emissions. However, these adaptation measures are eroded by excessive packaging; more frequent deliveries to consumers who do not consolidate orders and prioritize speedy deliveries; and high energy consumption by warehouses, ICT devices like laptops, and data centres.[13] Thus, e-commerce can be a climate-friendly option *only* if combined with consumer behaviour changes and regulatory interventions, like requiring companies to recycle or reduce packaging or to use zero-emissions delivery vehicles.[14]

Beyond the environmental impacts, the digital economy also poses further economic and social threats to sustainable development. Developing countries'

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[8] Manyika, J., Lund, S., Bughin, J., Woetzel, J. R., Stamenov, K., & Dhingra, D. (2016). *Digital Globalization: The New Era of Global Flows* (p. 76). Retrieved April 11, 2023, from https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/digital%20globalization%20the%20new%20era%20of%20global%20flows/mgi-digital-globalization-full-report.ashx.

[9] United States International Trade Administration. (n.d.). *eCommerce Sales & Size Forecast.* Retrieved April 11, 2023, from https://www.trade.gov/ecommerce-sales-size-forecast (*hereinafter* USITA)

[10] USITA.

[11] OECD. (2018). (rep.). *Bridging the Digital Gender Divide Include, Upskill, Innovate*. Paris: OECD. Retrieved April 11, 2023, from https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf.

[12] Boudreau, C. (2021, November 18). *Shopping Online Surged during COVID. Now the Environmental Costs Are Becoming Clearer.* POLITICO. Retrieved April 11, 2023, from https://www.politico.com/news/2021/11/18/covid-retail-e-commerce-environment-522786.

[13] Weideli, D. (2013). *Environmental Analysis of US Online Shopping*. MIT. Retrieved April 11, 2023, from https://ctl.mit.edu/sites/default/files/library/public/Dimitri-Weideli-Environmental-Analysis-of-US-Online-Shopping_0.pdf.

[14] Fernández Briseño, D., Chegut, A., Glennon, E., Scott, J., & Yang, J. (2020). (rep.). *Retail Carbon Footprints: Measuring Impacts from Real Estate and Technology* (p. 13). Retrieved April 11, 2023, from https://realestateinnovationlab.mit.edu/wp-content/uploads/2021/01/FINAL_Retail-carbon-footprints-report_011221.pdf.

comparative advantage is increasingly being eroded by the automation of low-skilled work, which disrupts traditional pathways to development and threatens to increase the inequality gulf amongst countries that has been decreasing, especially in faster-growing emerging economies, since the 1980s.[15]

Moreover, concerns linked to data deserve special mention because of data's centrality to the digital economy and the importance of cross-border trade flows. The digital economy is synonymous with large volumes of data that are increasingly personal in nature.[16] Big Data, which is controlled by a few gatekeeper companies, mostly from the Global North, is often not transparent[17] and is characterized by data hoarding.[18] Other privacy related concerns, such as discrimination, or control over individual's future activities, are increasing. The possible permanence of personal data means also that it can be potentially reused for unanticipated purposes.[19]

Beyond privacy concerns, the pervasive use of data opens many regulatory questions about safeguarding countries' "digital sovereignty".[20] And, increasingly, for developing countries, the rejection of what is considered "data colonization".[21] By seeking to take control of data in their own territories to generate value from it, developing countries seek to avoid becoming mere sources of raw data that Big Tech exploit. This evokes the patterns of persistent underdevelopment in which many developing countries and least-developed countries (LDCs) find themselves due to their low-value roles as suppliers of natural resources in global value chains.[22] The tension around data highlights the power imbalances inherent to the digital economy due to the control of few companies in even fewer countries have on the supporting and essential infrastructure.[23]

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[15] Qureshi, Z., & Woo, C. (2022). Overview: Digital Metamorphosis and Economic Change. In Z. Qureshi & C. Woo (Eds.), *Shifting Paradigms: Growth, Finance, Jobs, and Inequality in the Digital Economy* (pp. 3–25).

[16] Gasser, U. (2015). Perspectives on the Future of Digital Privacy. *Zeitschrift für Schweizerisches Recht*, *135*, 335–448. (*hereinafter* Gasser (2015)); Solove, D. J. (2006). A Taxonomy of Privacy. *University of Pennsylvania Law Review*, *154*, 477–560 at 506; Reidenberg, J. R. (2015). The Transparent Citizen. *Loyola University Chicago Law Journal*, *47*, 437–463 at 438–448.

[17] Gasser (2015) note 16 at 343–350.

[18] Aaronson, S. (2022). Wicked Problems Might Inspire Greater Data Sharing (IIEP-WP-2022-09). Institute for International Economic Policy. Retrieved April 11, 2023, from https://www2.gwu.edu/~iiep/assets/docs/papers/2022WP/AaronsonIIEP2022-09.pdf (*hereinafter* Aaronson (2022)).

[19] Gasser (2015) note 16 at 353.

[20] See e.g. Pohle, J. & Thiel, T. (2020). Digital Sovereignty. *Internet Policy Review*, *9*(4). https://doi.org/10.14763/2020.4.1532.

[21] See, for example, Couldry, N., & Mejias, U. A. (2019). Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject. *Television & New Media*, *20*(4), 336–349. (*hereinafter* Couldry & Mejias (2019)) and Elmi, N. (2020, November 11). Is Big Tech Setting Africa Back? *Foreign Policy*. Retrieved April 11, 2023, from https://foreignpolicy.com/2020/11/11/is-big-tech-setting-africa-back/.

[22] Couldry & Mejias (2019) note 21 at 336.

[23] Vásquez Callo-Müller, M. & Kugler, K. (2023). Digital Trade, Development, and Inequality. *AJIL Unbound* (forthcoming).

Additionally, data-driven algorithms have been proven to entrench and perpetuate gender and racial bias,[24] deep synthesis technology has been used to create "deep fakes",[25] and social media platforms allow the spread of disinformation or "fake news". All these threaten social cohesion and democratic values and institutions,[26] which are necessary elements for sustainable development.

Governments have struggled to keep up and still lag behind in regulating this explosion of online commercial activity.[27] However, they have also created regulatory barriers that threaten to decrease gains from the digital economy that are crucial for ensuring inclusive economic development, especially for developing countries. In the next section, we identify a few regulatory barriers that should become priority areas in global engagements to ensure that the digital economy indeed supports sustainable development.

3. New generation of trade barriers

As digital trade profoundly changed in the last decade, states have reacted to this transformation and the perils associated with it − such as risks for citizens' privacy and national security − in a number of ways. Some of these reactions have been associated with a new palette of measures that inhibit digital trade and, ultimately, sustainable development, including by increasing the cost of doing business and potentially hindering innovation. Studies have tried to map and analyse information on these new digital trade barriers.[28] We provide below an overview of each type of measure and possible solutions that are being developed to mitigate their effects.

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[24] Buolamwini, J & Gebru, T. (2018). Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification. *Proceedings of Machine Learning Research*, *81*, 1–15.

[25] Vaccari, C & Chadwick, A. (2020). Deepfakes and Disinformation: Exploring the Impact of Synthetic Political Video on Deception, Uncertainty, and Trust in News. *Social Media + Society*, 1–13.

[26] Aaronson, S. (2021). Could Trade Agreements Help Address the Wicked Problem of Cross-Border Disinformation? CIGI Papers, No. 255. Centre for International Governance Innovation. Retrieved April 11, 2023, from https://www.cigionline.org/publications/could-trade-agreements-help-address-the-wicked-problem-of-cross-border-disinformation/; Burri, M. (2022). Fake News in Times of Pandemic and Beyond: Exploring of the Rationales for Regulating Information Platforms. In Mathis, K. & Tor. A. (Eds.), *Law and Economics of the Coronavirus Crisis* (pp. 31–58). Berlin: Springer.

[27] Elms, D. (2020). Digital Trade in the Asia-Pacific: Issues for 2021 and beyond. Hinrich Foundation (p. 4) Retrieved April 11, 2023, from https://static1.squarespace.com/static/5393d501e4b0643446abd228/t/5ff54b665513902cd3253e51/1609911149107/Digital+trade+in+the+Asia+Pacific+Hinrich+Foundation+December+2020.pdf.

[28] See e.g. United States International Trade Commission (USITC). (2013). *Digital Trade in the US and Global Economies, Part 1,* Investigation No 332–531. Washington, DC: USITC; United States International Trade Commission (USITC). (2014). *Digital Trade in the US and Global Economies, Part 2,* Investigation No 332–540. Washington, DC: USITC; Fefer, R., et al. (2017). Digital Trade and US Trade Policy. *Congressional Research Service*, CRS Report R44565 (*hereinafter* Fefer et al. (2017)); Chander, A., & Lê, U. P. (2015). Data Nationalism. *Emory Law Journal*, *64*(3), 677–739 (*hereinafter* Chander & Lê (2015)).; Evenett, S. J., & Fritz, J. (2022). *Emergent Digital Fragmentation: The Perils of Unilateralism*. Brussels: CEPR Press (*hereinafter* Evenett & Fritz (2022)).

Localization measures can be defined as measures that compel companies to conduct certain digital trade-related activities within a country's borders. Russia, Turkey, China but also a number of other countries have adopted a variety of these measures, especially after the 2013 Snowden revelations.[29] Increasingly, African countries[30] also seek to adopt these measures to increase economic opportunities.[31] However, such policies essentially limit market access and may result in higher costs and sub-optimal processes for foreign and domestic firms.[32] Solutions to address data restrictions are not straightforward because of the high values attached to their imposition. However, we address below two feasible solutions: (1) data sharing and (2) commitments on cross-border data flows in Preferential Trade Agreements (PTAs).

Data sharing stems from the idea that data is a global public good that can solve major global problems like hunger, poverty, health and climate change.[33] International regulations that require companies to share the data that they obtain, especially for public policy objectives like health research, could go a long way in addressing data inequality.[34] Some jurisdictions, like the European Union (EU), have adopted legislation that creates a regulatory framework for data sharing. The EU Data Governance Act encourages wider sharing of public sector data, including personal data, in a secure manner. The Act also contemplates a cross-border data sharing regime for non-personal data, which is operationalized by adequacy decisions, such as those contemplated under Article 48 of General Data Protection Regulation (GDPR)[35] for personal data, so as enable sharing all data with third-party countries. Data sharing polices have also been considered by Australia, Canada, and the United Kingdom.[36] While data sharing obligations have not been yet translated into trade frameworks, they can offer a viable way for using data for the benefit of all and not just the few.

Although commitments on cross-border data flows are still relatively low in PTAs, there has been some notable convergence in the treaty language since the Comprehensive and Progressive Agreement for Transpacific Partnership (CPTPP)

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[29] Chander & Lê (2015) note 28 at 700.

[30] See National Information Technology Development Agency (NITDA). (2020). Foreword, "Guidelines for Data and Information Management", and "Guidelines for ICT Service Provisioning" in NITDA's *Guidelines on Nigerian Content Development in Information and Communications Technology* (Nigeria); Department of Communications and Digital Technologies of South Africa, *Draft National Policy on Data and Cloud*, Government Notice No. 44389 of 1 April 2021 (South Africa).

[31] Chander & Lê (2015) note 28 at 700.

[32] For a more detailed study, see OECD. (2015). *Emerging Policy Issues: Localisation Barriers to Trade*, TAD/TC/WP(2014)17/FINAL, May 12, See2015.

[33] UNCTAD. (2021). Digital Economy Report 2021. New York: UNCTAD (pp. 175, 178). Retrieved April 11, 2023, from https://unctad.org/system/files/official-document/der2021_en.pdf.

[34] Aaronson (2022) note 18 at 4.

[35] Regulation (EU) 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) (*hereinafter* GDPR).

[36] Aaronson (2022) note 18 at 11.

and United States–Mexico–Canada Agreement were concluded in 2018. This evolution includes provisions on cross-border data flows in treaties concluded by the major actors in the digital economy – the United States (US), EU, and China,[37] as well as by a number of smaller economies. While the commonalities in data flows commitments are important, there are also substantial divergences in the adopted treaty language – in particular between the liberal model of the CPTPP and the United States–Mexico–Canada Agreement (USMCA), which has also found diffusion across other agreements, and the conditional data flows model. The latter permits the free flow of cross-border data only when certain conditions are satisfied – in the EU case, the conditions are linked to personal data protection safeguards, while in the China's case to national security exceptions.[38]

Data privacy and protection measures: The conditionalities of data flows are immediately linked to the deviating approaches to data privacy and protection, which 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 regulatory divergence is real[39] and imposes substantial costs and uncertainty on firms, especially micro-, small- and medium-sized enterprises (MSMEs).[40] However, 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.

The protection of personal data as a corollary to the protection of privacy and family life is a necessary element to support sustainable development. UNCTAD indicates that 137 out of 194 countries have adopted data protection and privacy legislation worldwide,[41] which is welcome development that can be directly linked to the centrality of data in contemporary societies. On a B2B level, companies could also use instruments like binding corporate rules (BCRs) and standard contractual clauses (SCCs) to ensure that data flows across borders with trust. Additionally, international and regional organizations have been active in the data privacy sphere. For example, the OECD has issued Guidelines on the Protection of Privacy and Transborder Flows of Personal Data and the Asia-Pacific Economic Cooperation (APEC), which includes 21 countries around the Pacific Ocean, including major Asian economies, Russia, and the US, has its Cross-Border

[37] Including the US–Japan Digital Trade Agreement, the EU–Australia and EU–New Zealand Free Trade Agreements, and the China-led megaregional Regional Comprehensive Economic Partnership (RCEP).
[38] See e.g. Burri, M. (2023). Cross-Border Data Flows and Privacy in Global Trade Law: Has Trade Trumped Data Protection? *Oxford Review of Economic Policy*. *39*(1), 85–97; Burri, M. (2023). A WTO Agreement on Electronic Commerce: An Enquiry into its Substance and Viability. *Georgetown Journal of International Law,* 53 (forthcoming).
[39] See e.g. Burri, M. (2021). Interfacing Privacy and Trade. *Case Western Journal of International Law*. *53(*1), 35–88; Chander, A. & Schwartz, P. M. (2023). Privacy and/or Trade. *University of Chicago Law Review*. *90*(1), 49–135 (hereinafter Chander & Schwartz (2023)).
[40] Ferracane, M. F. (2021). The Costs of Data Protectionism. In Burri, M. (Ed.), Big Data and Global Trade Law (pp. 63–82). Cambridge: Cambridge University Press.
[41] UNCTAD. (n.d.). *Data Protection and Privacy Legislation Worldwide*. Retrieved April 11, 2023, from https://unctad.org/page/data-protection-and-privacy-legislation-worldwide.

Privacy Rules, which implement the APEC Privacy Framework.[42] The Council of Europe (CoE) has updated its Convention 108 with regard to the processing of personal data and it is open for non-CoE Members as well.[43] Even in Africa, the African Union (AU) has adopted the AU Convention on Cybersecurity and Personal Data Protection. Some level of convergence is emerging in these privacy frameworks, which means that an international agreement on data privacy is not entirely a pipedream – if an adequate forum were available.[44] Absent an international convention on data protection, an option to lock-in this convergence is to create an inter-regional mechanism to harmonize language in regional treaties, with a requirement to ensure that Member States' PTAs also reflect this language.

IP-related measures: Representatives of digital content providers and 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).[45] By contrast, representatives of intermediaries are particularly concerned about being held liable for IP infringing or illegal conduct of users of their systems. Intellectual property rights (IPRs) are further threatened by text to image AI apps such as DALL-E, DALL-E 2, Craiyon, and Stable Diffusion Online that use copyrighted images to create art.

IPRs are, arguably, some of the best protected in the digital economy. There are already protected in agreements like the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement)[46] and the related treaties of the World International Property Organization (WIPO), as well as a myriad of TRIPS-plus PTAs. Moreover, the MFN clause of the TRIPS Agreement (Article 4) provides a mechanism through which Members of the World Trade Organization (WTO) could claim the application of any PTA a country has concluded, including those with strong copyright protections. Such provisions could be invoked by developing countries that have weak IP laws to protect their creative industries against algorithms that trawl the Internet for images – algorithms that are typically owned by companies in countries that conclude TRIPS-plus PTAs.

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[42] Building upon the APEC framework, the US has launched a new separate initiative under the Global Cross-Border Privacy Rules Declaration. See US Department of Commerce (n.d.). Global Cross-Border Privacy Rules Declaration. Retrieved April 11, 2023, from https://www.commerce.gov/global-cross-border-privacy-rules-declaration.

[43] Council of Europe (n.d.). Modernisation of Convention 108. Retrieved April 11, 2023, from https://www.coe.int/en/web/data-protection/convention108/modernised.

[44] See Chander & Schwartz (2023) supra note 39.

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

[46] Agreement on Trade-Related Aspects of Intellectual Property Rights, April 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994).

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 but over the years has proliferated and diversified. It has also become much more sophisticated and far-reaching.[47] Blocking and filtering of online platforms and content can be compared to customs officials stopping goods from a particular company at the border. Internet shutdowns affect economic growth and hence development, The US International Trade Commission estimated that shutting down the Internet or blocking social media and user-generated video services (Facebook, Instagram, YouTube, and Twitter) resulted in significant losses in local economies. An estimated $2.2 billion was lost in India due to throttling and Internet shutdowns in Jammu and Kashmir in 2019–2020. Indonesia lost $82.2 million from social media shutdowns in 2019. Moreover, Turkey lost and $14.6 million after it blocked several US services in early 2020.[48] All of these shutdowns were used to quell protests and/or stifle political dissent.[49] In addition to the substantial economic impact, the human rights costs, in particular on the freedom of speech and expression, are to be deemed astronomical.[50]

Addressing state-sponsored online censorship is challenging. There are, of course, international human rights treaties, like the International Covenant on Civil and Political Rights (ICCPR) (1966), which guarantees basic human rights including the freedoms of expression and peaceful assembly. However, enforcement is weak and, even in the most advanced and democratic societies, compliance is not perfect. Additionally, WTO Members can challenge measures that disrupt the operations of foreign websites, including social media platforms, under the WTO's General Agreement on Trade in Services (GATS).[51] WTO Members are prohibited from discriminating against "like" different foreign services and service suppliers (MFN) or discriminating against foreign services and services suppliers in favour of domestic "like" services and service suppliers (national treatment). In fact, the GATS' only Internet case so far, *US – Gambling*, was against a US law that sought to ban foreign suppliers of Internet gambling services.[52] Although the measure was affected through regulations and not technology, any measure that blocks Internet traffic could be challenged at the WTO's dispute settlement system. Admittedly, the current WTO dispute settlement

[47] See e.g. Zittrain, J., et al. (2017). The Shifting Landscape of Global Internet Censorship. *Berkman Klein Center Research* Publication No. 2017-4.
[48] USITC. (2022). *Foreign Censorship, Part 2: Trade and Economic Effects on U.S. Businesses*. Publication Number: 5334 Investigation Number: 332-586 (pp. 75, 90), Retrieved April 11, 2023, from https://www.usitc.gov/publications/332/pub5334.pdf (*hereinafter* USITC (2022)).
[49] USITC (2022) note 48 at 75.
[50] See e.g. Human Rights Council. (2011). *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*, Frank La Rue. A/HRC/17/27, 16 May 2011.
[51] General Agreement on Trade in Services, April 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 1869 U.N.T.S. 183, 33 I.L.M. 1167 (1994).
[52] Panel Report, United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (US – Gambling), WT/DS285/R, adopted November 10, 2004; Appellate Body Report, US – Gambling, WT/DS285/AB/R, adopted April 7, 2005.

crisis renders this option less desirable but the threat of a WTO dispute could deter at least the discriminatory aspect of censorship. PTA frameworks are yet to address censorship and Internet shutdowns squarely, but the scholarly and policy acknowledgement of the pertinent issues is growing.[53]

Cybersecurity: The growth in digital trade has raised issues related to cybersecurity, the act of protecting ICT systems and their contents from cyberattacks. Cyberattacks in general are deliberate attempts by unauthorized persons to access ICT 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.[54]

The 2001 Council of Europe Convention on Cybercrime (Budapest Convention)[55] and its two additional protocols[56] seek to curb cybercrime in Europe and beyond. The Budapest Convention is the most influential and important international cybercrime treaty and has been ratified by 68 countries, 45 of them being Member States and 23 non-Member States.[57] However, it has been criticized for not protecting individual human rights and state rights to ensure that other state parties do not conduct unlawful remote searches. Moreover, accession is by invitation only.[58] However, a treaty on cybercrime is being negotiated under the auspices of the United Nations (UN). The Ad Hoc Committee to Elaborate a Comprehensive International Convention on Countering the Use of Information and Communications Technologies for Criminal Purposes was established by UN General Assembly resolutions 74/247 and 75/282 in 2021. The latter resolution contemplates the completion of the negotiations in six rounds, the sixth of which is in August/September 2023. While negotiations are ongoing, this is still a positive development as this treaty could potentially be applied in every State in the world.

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

The United Nations Commission on International Trade Law (UNCITRAL) has adopted several instruments to facilitate electronic transactions, including those

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[53] See e.g. Aaronson, S. A. (2021). The Difficult Past and Troubled Future of Digital Protectionism. In Borchert I. & Winters, L. A. (Eds.), Addressing Impediments to Digital Trade (pp. 141–168). Brussels: CEPR Press; Burri, M. (2023). Digital Trade Law and Human Rights. *AJIL Unbound* (forthcoming).
[54] Fefer et al. (2017) note 28.
[55] ETS No. 185.
[56] The Second Protocol was updated in 2022 to enhance cooperation in cross-border investigations.
[57] Council of Europe (n.d.). *Chart of Signatures and Ratifications of Treaty 185*. Retrieved April 11, 2023, from https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=185.
[58] Clough, J. (2019). A World of Difference: The Budapest Convention on Cybercrime and the Challenges of Harmonisation, *Monash University Law Review 40*(3), 718, 724.

that facilitate traditional trade by cutting red tape. The 1996 UNCITRAL Model Law on Electronic Commerce has influenced e-commerce legislation in 164 jurisdictions worldwide.[59] Additional model laws adopted throughout the years include UNCITRAL Model Law on Electronic Signatures (2001), UNCITRAL Model Law on Electronic Transferable Records (2017), UNCITRAL Model Law on the Use and Cross border Recognition of Identity Management and Trust Services (2022). In 2005, UNCITRAL Members adopted the United Nations Convention on the Use of Electronic Communications in International Contracts, which entered into force on 1 March 2013. Except the Model Law on E-Commerce, few UNCITRAL instruments have been widely adopted. Nevertheless, its instruments are still influential and are incorporated by reference in digital trade provisions Regional Trade Agreements and PTAs, which enhances their impact and decreases regulatory divergence.[60] Staring with the CPTPP in 2018, the most recent PTAs have consistently adopted standard rules on paperless trading, electronic signatures, express shipments and clearance, logistics, electronic payments, electronic authentication, and electronic signatures (securing equivalence of electronic and physical forms). As a result, inter-regional discussions to harmonize treaty language in regional and individual Member States' PTAs in this area is possible.

Competition and big data another important issue that should be added to the policy desiderata threatening sustainable development stems from existing inequalities in the data-based economy. Whereas the digital economy holds vast potential for MSMEs, a trend that needs to be carefully accounted for is market concentration in the tech sector, as network effects that are intrinsic to digital markets often trigger 'winner-takes-all' scenarios.[61] Big Tech's dominance centralizes market power in the tech sector, resulting in anti-competitive conduct, especially in the race for data. The rise of "data-opolies", led by companies like US-owned Google, Amazon, Meta and Apple (often referred to as GAMA) has seen these few companies command huge market power in Big Data, mostly because of their ability to access and control large amounts of user and consumer data.[62] Big Tech companies with dominant positions in multiple markets can leverage this dominance onto neighbouring and new markets. The vast data assets that these firms possess only make these effects stronger and may call for intervention — be

[59] UNCITRAL. (n.d.). *Status: UNCITRAL Model Law on Electronic Commerce (1996)*. Retrieved April 11, 2023, from https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_commerce/status.

[60] For example, the Model Law on Electronic Transactions and Electronic Commerce of the Southern African Development Community (SADC) incorporates provisions of the *United Nations Convention on the Use of Electronic Communications in International Contracts* and the *UNCITRAL Model Law on Electronic Commerce*.

[61] See e.g. Shapiro, C., & Varian, H. R. (1999). *Information Rules*. Cambridge, MA: Harvard Business School Press.

[62] See Stucke, M. E. (2018). Should We Be Concerned about Dataopolies? *Georgetown Law Technology Review*, *2*(2), 275 and, generally, Stucke, M.E. (2022). *Breaking Away: How to Regain Control Over Our Data, Privacy, and Autonomy*. Oxford: Oxford University Press.

it in domestic contexts to level the playing field[63] or in global contexts to ensure that radical data inequalities do not ensue.[64]

Solutions to Big Tech's anti-competitive conduct are also difficult to achieve because of the lack of international competition law instruments. The European Commission has been the most proactive enforcer of the EU's competition law against Big Tech, including by handing down the largest fine ever (€2.42 billion) in competition law proceedings.[65] The EU also enacted the Digital Markets Act in 2022, that seeks to regulate digital market gatekeepers. However, most other competition authorities, including the US' have been either reluctant[66] or do not have the capacity to punish Big Tech's anti-competitive behaviour. Further, cooperation on supranational competition law policies for the digital economy is still at its infancy. The OECD has been supporting the G7 and the European Commission to develop an inventory of new competition rules for the digital economy, which was published in 2022.[67] Regional competition law bodies like the Competition Commission of the Common Market for Eastern and Southern Africa (COMESA) and international cooperation structures like the International Competition Network will also be instrumental to enforcing competition rules in the digital economy to ensure sustainable development.

Digital taxation fiscal measures have become highly contested in the digital economy. On the one hand, there is the risk of countries applying customs duties on digital products.[68] On the other hand, there is growing concern that Big Tech is using legal loopholes to avoid paying taxes.[69]

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[63] See e.g. Ezrachi, A., & Stucke, M. E. (2016). *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy*. Cambridge, MA: Harvard University Press; Burri, M. (2019). Understanding the Implications of Big Data and Big Data Analytics for Competition Law: An Attempt for a Primer. In K. Mathis & A. Tor (Eds.), *New Developments in Competition Law and Economics* (pp. 241–263). Berlin: Springer. This has been reflected in recent legislative efforts of the EU, such as the Digital Services Act and the Digital Markets Acts.

[64] See e.g. Couldry & Mejias (2019), note 21 at 336–349; Fisher, A. & Streinz, T. (2021) Confronting Data Inequality. *International Law and Justice Working Paper* 1. Retrieved April 11, 2023, from https://www.iilj.org/wp-content/uploads/2021/04/Fisher-Streinz-Confronting-Data-Inequality-IILJ-Working-Paper-2021_1.pdf.

[65] Case AT.39740 – *Google Shopping*, June 27, 2017.

[66] Wheeler, T. (2022, March 29). U.S. Regulatory Inaction Opened the Doors for the EU to Step up on Internet. *Brookings Institution*. Retrieved April 11, 2023, from https://www.brookings.edu/blog/techtank/2022/03/29/u-s-regulatory-inaction-opened-the-doors-for-the-eu-to-step-up-on-internet/.

[67] OECD. (n.d.). *Digital Economy, Innovation and Competition*. Retrieved April 11, 2023, from https://www.oecd.org/competition/digital-economy-innovation-and-competition.htm.

[68] See OECD. (n.d.). *Electronic Transmissions and International Trade: Shedding New Light on the Moratorium Debate*. Trade and Agriculture Directorate Trade Committee, Working Party of the Trade Committee, November 4, 2019, TAD/TC/WP(2019)19/FINAL (pp. 13–14). Retrieved April 11, 2023, https://one.oecd.org/document/TAD/TC/WP(2019)19/FINAL/en/pdf (*hereinafter* OECD (2019)).

[69] OECD (2018). *Tax Challenges Arising from Digitalisation –Interim Report 2018*. OECD/G20 Base Erosion and Profit Shifting Project (pp. 18–19) Retrieved April 11, 2023, https://www.oecd-ilibrary.org/docserver/9789264293083-en.pdf?expires=1677558836&id=id&accname=ocid49025337a&checksum=7EC05D458C5503520F66DE19CD4422A6.

The WTO has maintained the customs duty moratorium since 1998.[70] Yet, its future is threatened as some WTO Members, particularly developing countries, believe that this practice disproportionately disadvantages developing countries and LDCs as it affects their ability to collect customs revenue.[71] There have been conflicting studies on its effect on developing countries but a large concern is the loss of consumer welfare due to price increases on digital products, [72] which could threaten sustainable development. Moreover, taxation of tech companies has been a major topic of discussion at the G20 and OECD. The OECD has been instrumental in advancing the global discussion on base erosion and profit shifting (BEPS). Currently, 138 countries and tax jurisdictions have joined the October 2021 OECD/G20 Inclusive Framework on BEPS Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalization of the Economy.[73] This initiative provides a unique opportunity to resolve the challenges of effective and fair taxation of tech firms multilaterally.

Overall, it is evident that the landscape of digital trade barriers is dynamic. While some barriers are not necessarily new, recent years have only witnessed increased unilateral intervention in the digital domain – what authors of a recent report even label as a "regulatory overdrive".[74] One cannot disregard the legitimate desire of countries to safeguard the fundamental rights of their citizens, public interests, and values that matter for their constituencies. Therefore, while not all measures are adopted with a protectionist or a discriminatory intent, the picture of regulatory heterogeneity becomes a major hindrance to reaping any of the benefits associated with the digital economy, including sustainable development.[75] Curbing this "digital protectionism" and the ensuing heterogeneity should be addressed in different policy agendas, including trade negotiations.

4. Digital trade negotiations do not (yet) support sustainable development

There is currently no agreement directly addressing sustainability issues in the digital economy. Since 1998, Internet-related issues have been discussed at the WTO under the auspices of the Work Programme on Electronic Commerce (Work Programme). The scope of the deliberations is comprehensive and seeks to address the cross-cutting nature of digital trade through parallel discussions in the Council for Trade in Services, the Council for Trade in Goods, the TRIPS Council, and, significantly, the Committee for Trade and Development. However, the formal

[70] WTO. (1998). Work Programme on Electronic Commerce, WT/L/274. September 30, 1998.
[71] See e.g., WTO. (2019) Work Programme on Electronic Commerce, Communication from India and South Africa. *The E-Commerce Moratorium and Implications for Developing Countries*. WT/GC/W/77, June 6, 2019.
[72] OECD (2019) note 68.
[73] OECD. (n.d.). Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy – 8 October 2021. Retrieved April 11, 2023, from https://www.oecd.org/tax/beps/statement-on-a-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.htm.
[74] Evenett & Fritz (2022) note 28 at 5.
[75] Evenett & Fritz (2022) note 28 at 5.

sessions stalled in 2016,[76] and there was no specific negotiating mandate attached to them.

Since January 2019, 88 WTO Members have sought to continue negotiating on digital issues under the auspices of a comprehensive Joint Initiative (JI) on Electronic Commerce.[77] The participants hoped to conclude these negotiations by the Ministerial Conference (MC) 12 in 2022 but there are still several issues outstanding. These negotiations have not been immune to the usual differences of opinion among WTO Members, notably, the three most influential players in the negotiations, China, the EU, and the US, but also two non-participants, India and South Africa. The latter two WTO Members have expressed concern about the legality and systemic reverberation of the JIs.[78]

As a reaction to both the stalemate in the multilateral forum of the WTO and the extended scope of regulatory issues falling under contemporary digital economy, states are increasingly using PTAs to regulate digital trade. The newly emerged PTA regime is highly dynamic and not only compensates for the lack of developments in the WTO but effectively creates a comprehensive, albeit fragmented, governance framework for the data-driven economy. Out of the 384 PTAs signed between January 2000 and December 2022, 167 contain provisions relevant to e-commerce/digital trade, and 109 have dedicated e-commerce/digital trade chapters.[79]

However, digital trade chapters of PTAs or the more recent standalone Digital Economy Agreements (DEAs) do not primarily seek to advance sustainable development in the way provided for in the environment, labour, or gender chapters of PTAs.[80] Nevertheless, there are clear elements in these agreements that seek to tackle sustainability issues. These areas include commitments on consumer protection, competition, business trust (provisions on source code, algorithms, and encryption), data protection, digital inclusion, trade and electronic transactions facilitation, and cybersecurity. It is worth noting, however, that research on the ex-post impacts of these provisions has not yet emerged, so evidence-based policy analysis appears at this stage a challenge.

Nevertheless, five recent PTAs have explicitly sought to address sustainable development by including provisions on digital inclusion. These are the Digital

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[76] WTO. (n.d.). *Work Programme on Electronic Commerce*. Retrieved April 11, 2023, from https://www.wto.org/english/tratop_e/ecom_e/ecom_work_programme_e.htm.
[77] WTO. (2019) Joint Statement on Electronic Commerce. WT/L/1056, January 25, 2019.
[78] WTO (India and South Africa). The Legal Status of "Joint Statement Initiatives" and Their Negotiated Outcomes. WT/GC/W/819, February 19, 2021 and WTO (India, South Africa and Namibia). The Legal Status of "Joint Statement Initiatives" and Their Negotiated Outcomes. WT/GC/W/819/Rev.1, April 30, 2021.
[79] Burri, M., Vasquez Callo-Müller, M., & Kugler, K. (n.d.). TAPED: Trade Agreement Provisions on Electronic Commerce and Data. Retrieved April 11, 2023, from https://unilu.ch/taped.
[80] Kuhlmann, K. (2021). Mapping Inclusive Law and Regulation: A Comparative Agenda for Trade and Development. *African Journal of International Economic Law*, *2*(1), 59–88 (*hereinafter* Kuhlmann).

Economy Partnership Agreement (DEPA) between Chile, New Zealand, and Singapore; the Chile-Paraguay Free Trade Agreement (FTA), the India–United Arab Emirates Closer Economic Partnership Agreement; the Singapore–UK DEA (UKSDEA); and the UK–New Zealand FTA. All but the latter agreement have at least one developing country party – indicating that developing countries are trying to take control of their economic futures through the digital economy. These provisions have expanded beyond granting economic opportunities to MSMEs to encompass women, rural populations, low socio-economic groups, disabled people, and Indigenous Peoples (specifically the Māori in New Zealand's PTAs). The UKSDEA is unique in that it specifically targets fair labour conditions, worker protection, and improving digital skills. Its Parties also recognize the digital divide between countries and undertake to promote the participation of *other countries* in digital trade. This offers a model for more economically advanced countries to follow in their PTAs with other advanced economies. Although these commitments are generally non-binding, they go a long way to centre sustainable development into the digital economy, instead of relying on trickle-down effects or hoped technological diffusion that have so far failed to address unequal development head on.

5. Reflections on the way forward

Current rulemaking, negotiations, and engagement on digital economy issues is fragmented and only targets sustainable development in a limited or peripheral fashion. Of course, first prize would be a cross-cutting multilateral digital economy agreement that comprehensively addresses sustainable development. However, it has become increasingly evident that negotiating new rules at the WTO, including those on digital issues, is near impossible due to, among others, the political differences among WTO Members, geopolitical positioning in existing rule-frameworks and domestic legal divergences on key issues. It is also obvious that leaving the negotiation of rules on sustainable development in this field to PTAs alone (albeit being the most advanced forum) is not ideal. First, by definition, PTAs are exclusionary and meant for those few countries that negotiate them, especially in this technical field. In fact, except for Morocco in the US–Morocco FTA, no African country has concluded a PTA with digital trade provisions. Second, while there is increasing convergence in topics that address sustainable development and even the emergence of digital inclusion provisions, countries and regions need to actively shape that convergence and limit heterogeneity going forward.

Consequently, a multi-stakeholder approach must be taken to advance discussions and cooperation mechanisms in venues that already seek to regulate the digital economy. The WTO could convene a *Task Force on Sustainable Development in the Digital Economy* and play a leading coordination role to ensure policy coherence. Possible partner institutions and groupings include the G7 and G20; OECD; regional trade organizations; and UN institutions like UNESCO (on AI), UNCITRAL, and UNCTAD. This type of engagement, in even "soft law" instruments, will go a long way to create digital economy regulation that supports the global sustainable development agenda. Moreover, resources can be pooled to

ensure that technical support and capacity building is provided to countries that need it.

Rules and mechanisms established on engaging on enhancing sustainability in the digital economy must, of course, include special and differential treatment (SDT). Goal 10.a of the SDGs (to reduce inequality within and among countries) specifically contemplates implementing SDT for developing countries, especially LDCs, in accordance with the WTO Agreements. To ensure equitable and sustainable development through the digital economy, the traditional SDT provisions in the WTO Agreements should be foregone for the model that was adopted in the WTO's Trade Facilitation Agreement that ties implementation with funding and capacity building.[81] In the digital space, SDT provisions must include capacity building and technical assistance to bridge the digital skills divide and ensure regulatory capacity in developing and least developed countries. This should be connected with monitoring and evaluation to ensure that the support measures indeed work. Without the recognition that developing countries are inherently behind in technology issues and resource constraints affect implementation, SDT provisions will be ineffective. This model of SDT in the digital economy has already been proposed in the E-Commerce JI negotiations,[82] so the path for further development in this context can be adequately laid out. Sustainable development and data-driven economies can be mutually beneficial only with the appropriate rule-framework and trade law and policy can play an important role in shaping this framework.

[81] See Kuhlmann at 80.
[82] See WTO. (2022). *WTO Electronic Commerce Negotiations, Updated Consolidated Negotiating Text* - December 2022 – Revision. INF/ECOM/62/Rev.3, December 22, 2022 (restricted document; copy with the authors).