DIGITAL REGULATION AND DEVELOPMENT: A GLOBAL MICRO AND MACRO COMPARISON

KATRIN KUHLMANN*

ABSTRACT

Regulation of the digital economy is receiving increased attention both domestically and internationally, but too little scholarship exists assessing the degree to which these new rules effectively support economic, social, and sustainable development. This Article advances a micro-macro framework for assessing digital regulation and its development dimension, including digital inclusion and measures to address the digital divide, the protection of human rights, and the operationalization of the United Nations' Sustainable Development Goals. In doing so, it incorporates a "micro international law" methodology to compare domestic legal design features and trace their diffusion into regional trade agreements and, in turn, into soft law and multilateral instruments. Domestic law has been an important driver of legal change in areas like data privacy, human rights, digital infrastructure, and access to finance. In many cases, domestic law has influenced rules at a regional level, highlighting how micro approaches can flow upward to influence more macro-level rules. Trade agreements increasingly integrate new approaches in development-focused digital regulation as well, including the recent trend to include provisions on digital inclusion, such as those that appear in the Digital Economy Partnership Agreement, the New Zealand-United Kingdom Free Trade Agreement, and the Digital Trade Protocol to the African Continental Free Trade Area Agreement, among other instruments. Across these emerging trends, some promising variation in bottom-up legal diffusion is apparent, suggesting that legal innovations may stem from a range of national sources. However, both domestic law and trade agreements contain notable gaps in linking digital rules to social

* Professor, Graduate and International Programs and Faculty Director and Co-Founder, Center on Inclusive Trade and Development, Georgetown University Law Center. Special thanks to Ines Willemyns for her insightful feedback and comments on this Article. Thanks also to Mira Burri, Anupam Chander, and other participants in the TradeLaw 4.0 symposium held at Georgetown University Law Center as well as to the participants in the March 2025 Georgetown Journal of International Law Symposium on Emerging Technologies and International Law. I am exceptionally grateful to Rashi Narayan, Madeleine Pumberger, Annapurna Johnson, Anne Wendenburg, Kennedy Pivnick, and Kristina Iotzova for excellent research support on this Article and to Luke Rowe for his extensive research on a larger project related to this work, as well as to Irene Korley-Ayerteye and Preethi Vatadahosahalli for additional research on domestic digital laws and Jacquelene Mwangi for discussions on a very early stage of this work. Thanks also to the wonderful editorial team at the Georgetown Journal of International Law. This Article builds upon Katrin Kuhlmann "Inclusive and Sustainable Development in Regulation of the Digital Economy: A Comparative and Contextual Analysis," in CAMBRIDGE HANDBOOK OF DIGITAL TRADE LAW, Mira Burri and Anupam Chander, eds. (Cambridge University Press, forthcoming). Contact: kak84@georgetown.edu.

and sustainable development. These include insufficient data privacy protection, incomplete approaches to artificial intelligence, and piecemeal focus on digital infrastructure and the digital divide. Sustainability in the digital realm is an even more amorphous concept, and current national and regional rules largely overlook both environmental and social gains and losses resulting from increased digital activity. This Article explores domestic, regional, and international digital rules in the context of economic, social, and sustainable development, highlighting innovations in domestic law and trade agreements, along with alternative "micro" interventions, for future study and scaling.

I. INTRODUCTION: THE CONTEXT OF DEVELOPMENT AND DIGITAL RULES

The regulation of the digital economy encompasses domestic legislation, regional trade agreements, and international hard and soft law frameworks at the intersection of trade, human rights, finance, and technology law. It carries significant implications for economic, social, and sustainable development. This necessarily includes viewing digital rules through the lens of human rights,[1] as well as economic, social,

1. *See generally* Mira Burri, *Digital Trade Law and Human Rights*, 117 AM. J. INT'L L. UNBOUND 110 (2023). *See also,* Katrin Kuhlmann, *More Than Words?: Sustainable and Inclusive Trade and Development in* NEXT GENERATION APPROACHES TO TRADE AND DEVELOPMENT: BALANCING ECONOMIC, SOCIAL, AND ENVIRONMENTAL SUSTAINABILITY 9 (2023) (Katrin Kuhlmann, ed.) [hereinafter Kuhlmann CITD, 2023]. *See generally,* Susan Aaronson, *Is the Wedding of Trade and Human Rights a Marriage of Convenience or a Lasting Union?,* 10(1) HUMAN RTS. & HUMAN WELFARE (2010).

and sustainable development in support of the United Nations' seventeen Sustainable Development Goals (SDGs). Despite the digital economy's promise of economic opportunity and innovation, its regulation largely overlooks a development dimension. A comprehensive legal design approach in this context should include measures to increase access to digital opportunities by vulnerable communities and stakeholders; appropriate digital infrastructure;[2] links between the digital economy and social and financial inclusion; participation of stakeholders in the policymaking process; special and differential treatment (S&DT) for developing economies; focus on micro, small, and medium-sized enterprises (MSMEs) and other stakeholders; and protection of important human rights through digital rules, in particular data privacy laws and regulations and rules on ethical use of AI.

Rules on data privacy, artificial intelligence (AI), cross-border data flows, digital infrastructure, digital inclusion, and data localization warrant greater study in the context of sustainable development and human rights. This Article contributes to the literature by applying a "micro" approach focused on domestic law combined with a "macro" approach that assesses international instruments and regional trade agreements (RTAs) in the context of digital development. Due to the nature of digital regulation, where much has been done at the domestic and regional levels without a full international framework, the article also examines how "meso" approaches between micro (domestic) and macro (international) law are driving change at the nexus of digital regulation and development. Across these layers, while innovations and positive trends exist, existing instruments fall short of protecting a broad range of human rights and making digital opportunity accessible to all.

The broader connection between economic development and digital access has been well documented. The World Economic Forum estimates that a ten percent increase in digitalization leads to a 0.75% increase in Gross Domestic Product and a 1.02% decrease in unemployment.[3] Overall, lesser developed economies continue to be more marginalized in the global digital economy,[4] affected by power imbalances

2. Angelina Fisher & Thomas Streinz, *Confronting Data Inequality*, 60(3) COLUMBIA J. INT'L L., 829, 852 (2022).

3. Karim Sabbagh et al., *Digitization for Economic Growth and Job Creation: Regional and Industry Perspectives in* THE GLOBAL INFORMATION TECHNOLOGY REPORT 2013: GROWTH AND JOBS IN A HYPERCONNECTED WORLD 35, 36 (Beñat Bilbao-Osorio, Soumitra Dutta, & Bruno Lanvin eds., 2013).

4. Binit Agarwal & Neha Mishra, *Addressing the Global Data Divide Through Digital Trade Law*, 14:2 TRADE, LAW, & DEV'T 238, 240 (2022) [hereinafter Agarwal & Mishra]. *See also* INT'L MONETARY

and patterns of underdevelopment.[5] Digital trade accounts for roughly one-quarter to one-half of global goods and services trade delivered through digital means.[6] It offers a source of economic opportunity for smaller economies and small businesses,[7] although the digital divide and incomplete digital infrastructure limit these benefits.

The "digital divide" refers to the gap between those with access to digital infrastructure and services, including the internet, and those without access.[8] It also includes the skills and capabilities necessary to take advantage of this access.[9] It is a critical contextual factor in assessing both domestic law and trade agreement provisions on the digital economy. An estimated 2.6 billion people, or one-third of the world's population, are affected by the digital divide,[10] which disproportionately affects developing countries, rural areas, women, Indigenous communities, and marginalized individuals and groups.[11] Not surprisingly, the digital divide exacerbates existing socio-economic inequalities, limiting economic benefit and development.[12] Significant inequality also exists in control over data, such as the power to decide what data will be collected, who will collect data, and how data will be used.[13] Law and regulation at all levels, including international trade frameworks, are also a factor in overcoming the digital or "data" divide.[14]

FUND, ORG. FOR ECON. CO-OPERATION AND DEV., UNITED NATIONS, WORLD BANK, WORLD TRADE ORG., DIGITAL TRADE FOR DEVELOPMENT 6 (2023) [hereinafter IMF et al.].

5. Mira Burri & Kholofelo Kugler, *Digitization, Regulatory Barriers, and Sustainable Development* 16 (TradeLaw 4.0 Working Paper No. 3, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4424470.

6. About one-quarter of total goods and services trade is delivered digitally. Javier L pez González et al., *Of Bytes and Trade: Quantifying the Impact of Digitalisation on Trade*, OECD TRADE POLICY PAPERS No. 273 (May 3, 2023), https://www.oecd.org/en/publications/of-bytes-and-trade-quantifying-the-impact-of-digitalisation-on-trade_11889f2a-en.html. In 2022, digitally delivered services totalled US $382 trillion, or about 54 percent of total global services exports. IMF et al., *supra* note 4 at 3.

7. *See* James Manyika et al., DIGITAL GLOBALIZATION: THE NEW ERA OF GLOBAL FLOWS 76 (2016).

8. Sabbagh et al., *supra* note 3, at xi.

9. *Id.*

10. IMF et al., *supra* note 4, at 3.

11. Agarwal & Mishra, *supra* note 4, at 240-41. *See also* UN Human Settlements Program (UN-Habitat), *Assessing the Digital Divide: Understanding Internet Connectivity and Its Effects on Communities*, 15 (2021).

12. "[T]echnology only amplifies existing inequalities so if you get it out to the people, get them access, it's not necessarily going to solve anything . . . this whole notion of a digital divide really is the most recent manifestation of a whole set of other divides and inequalities." Balaji Parthasarthy, *The Digital Divide: Can We Narrow the Gap?*, INT'L LABOUR ORG. WORLD OF WORK PODCAST (June 13, 2022), https://www.ilo.org/resource/other/digital-divide-can-we-narrow-gap.

13. Fisher & Streinz, *supra* note 2, at 942.

14. Agarwal & Mishra, *supra* note 4, at 241.

Addressing data inequality and the digital divide will require not just affordable access to technology but also the right investment in (and control over) infrastructure and telecommunications networks, digital skills development, legal frameworks, and attention to the needs of vulnerable stakeholders. While domestic policies and international initiatives address some of these areas, a much more comprehensive focus is needed to ensure fit-for-purpose legal design and meaningful participation in international trade.

In addition, sustainability in a digital context is a critical but often completely overlooked dimension of digital rules. Despite the significant environmental impact of the digital economy in terms of carbon emissions, electricity, and water usage,[15] digital rules and trade agreements generally do not address sustainability in a digital context. The broader legal principle of sustainable development, which necessitates focus on equity in the context of digital regulation,[16] is also not fully addressed in digital rules.

Legal gaps also undermine the development impact of the digital economy. These include insufficient data privacy, the lack of standards on AI and data mining, gaps in consumer protection measures, data localization rules, intellectual property concerns, censorship measures, cybersecurity challenges, insufficient competition policies, and complex and discriminatory border and taxation measures.[17] While these issues are addressed in part through existing domestic law and some RTAs, they are often not approached from a human rights or sustainable development perspective. Other issues include transparency over digital infrastructure ownership and control over data in the digital economy.[18] Because digital infrastructure is directly connected with digital inequality,[19] deeper contextual study and differentiated design of digital law, including approaches that consider cultural diversity and socioeconomic factors,[20] are needed. Under international law, there are additional sustainable development considerations related to development and digital rules, including S&DT for developing countries.

15. *See* Simone Viani, *Sustainability in the Digital World*, MEDIUM, (Feb. 29, 2024), https://medium.com/@flik185/sustainability-in-the-digital-world-42f7d11f4b09.

16. Kuhlmann CITD 2023, *supra* note 1.

17. Burri & Kugler, *supra* note 5, at 8-15.

18. Fisher & Streinz, *supra* note 2, at 942.

19. *Id.*

20. Jake Okechukwu Effoduh, Ugochukwu Ejike Akpudo, and Jude Dzevela Kong, *Toward a Trustworthy and Inclusive Data Governance Policy for the Use of Artificial Intelligence in Africa,* 6 DATA & POLICY e34-1, 3 (2024).

However, even though countries have raised these concerns, they remain largely unaddressed in international legal instruments.

This Article explores domestic, regional, and international digital rules in the context of economic and social development, highlighting innovations in domestic law and trade agreements, along with alternative smaller-scale interventions and empirical approaches for future study and scaling. In doing so, it applies a "micro international law" framework to digital regulation, which emphasizes the importance of assessing granular, disaggregated approaches and the circular relationship between innovations at the domestic, regional, and multilateral levels in the context of legal design and implementation.[21] A micro approach is particularly valuable for identifying good practices and shortcomings in digital regulation at the domestic and regional levels, the latter of which can be viewed as a meso layer between domestic and multilateral international law.

The Article further explores the value of pluralistic digital regulatory approaches, proposing that approaches like the European Union's (EU's) General Data Protection Regulation (GDPR) and other measures, while originally more micro in nature, may become so dominant that they may stifle further micro-level innovation. Although there can be benefits from the diffusion of domestic legal models, the risk is that when one model becomes globally entrenched, countries may feel compelled to fully adopt it, even when it does not align with their specific social, cultural, or economic conditions. This limits regulatory experimentation, imposes compliance burdens on small firms and developing economies, and narrows the space for context-sensitive solutions that might better advance sustainable development and digital inclusion. These dynamics and their implications for legal innovation and compliance should be further studied.

Part II of this Article approaches lessons of digital regulation from the bottom up, considering "micro international law" takeaways that can be drawn from domestic law and empirical studies, with important implications for international law in the future.[22] Part III assesses how regional and international legal instruments, particularly RTAs, currently respond to issues of digital inclusion, sustainable development, and the digital divide. Part IV concludes.

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21. For an introduction to the "micro international law" approach, *see generally* Katrin Kuhlmann, *Micro International Law*, 61 STAN. J. INT'L L. (forthcoming 2025) [hereinafter Kuhlmann 2025].

22. Katrin Kuhlmann, *Mapping Inclusive Law and Regulation: A Comparative Agenda for Trade and Development*, 2 AFRICAN J. INT'L ECON. L. 48, at 27 (2021) [hereinafter Kuhlmann 2021].

II. A Micro Approach to Digital Regulation

Differing approaches to digital regulation exist at the domestic level, with several notable trade-offs and legal innovations apparent in domestic law and policy. These include varying degrees of personal data protection and privacy; the emergence of AI and cybersecurity measures; and laws, regulations, and other instruments related to digital infrastructure, financial inclusion, addressing the digital divide, and other issues.

Assessment of the micro dimension of digital regulation is part of an ongoing project on "micro international law," which approaches domestic (and sub-national) legal innovations as a contribution to regional and international law and uses empirical studies to assess legal gaps, opportunities, and innovation, particularly as they relate to social and sustainable development.[23] In areas like digital regulation, where international rules are not yet in place, a circular relationship is particularly evident between domestic and international law, with innovation and diffusion taking place from both the bottom up and top down.[24]

A micro approach is important for several reasons. First, a micro analysis of small-scale interventions highlights legal and regulatory innovation and experimentation at the national and sub-national levels. The most successful efforts to promote development and sustainability tend to come from the ground up rather than the top down, and domestic law is often more tailored to circumstances affecting individuals and communities.[25] As a result, applying a micro approach in the context of digital regulation points to number of areas in which countries have designed systems that contain good practices, such as sustainability, flexibility, transparency, and participation in the rulemaking process.[26] A micro analysis also critically highlights areas in which domestic law falls short.

Second, a micro approach can be instrumental in understanding the degree to which law incorporates and responds to stakeholder needs. This is true of both domestic law and international agreements, the latter of which are inherently top down. For example, New Zealand's approach, which is designed to integrate Māori input at different stages in regional and international legal design and negotiation, did result in more expansive digital trade protections in some agreements, such as the New Zealand-EU Free Trade Agreement (FTA), but still has

23. *See generally* Kuhlmann 2025, *supra* note 21.

24. *Id.* at 65.

25. *See* Kuhlmann 2021, *supra* note 21.

26. *Id.*

reported gaps in terms of Māori representation and legal protections.[27] Often, however, regional and international legal instruments, ranging from RTAs to multilateral instruments (including mainly various soft law instruments with some harder law emerging), are often designed without broad-based stakeholder engagement and input. An empirical, contextual approach could be instrumental in integrating stakeholder perspectives in relation to ongoing and future legal instruments. Empirical methods, such as interviews, questionnaires, surveys, and case studies, can be particularly instructive. While new research applying these methods is beyond the scope of this essay, a prior micro-level study on the World Trade Organization (WTO) Moratorium on Customs Duties on Electronic Transmissions (E-Commerce Customs Duty Moratorium), discussed below, highlights the use of empirical approaches and stakeholder input in the context of digital regulation and development.

The overview of "micro" innovations and interventions in digital regulation below is based on an initial comparative assessment of domestic laws in the digital space. This micro-level comparative assessment and empirical dimension will be further developed in future work.

A. *Micro Analysis of Domestic Law*

A micro analysis of digital regulation points to number of areas in which countries have designed systems tailored to development considerations, human rights, and the needs of stakeholders. These are already having a bottom-up impact on the development of trade agreements and other international rules, as discussed in the sections

27. *See* NGĀ TOKI WHAKARURURANGA, TE TIRITI O WAITINGI ASSESSMENT: NEW ZEALAND-EUROPEAN UNION FREE TRADE AGREEMENT 5 (2023), an independent assessment of Māori rights, interests, and duties resulting from the New Zealand-EU-FTA in the context of the Treaty of Waitangi, which notes that Māori interests are not fully reflected. As compared with other trade agreements, the NZ-EU FTA showed improvement in digital trade protections and absence of investor-state dispute settlement (ISDS) provisions. Gaps included lack of representation in negotiations, no changes to the Treaty of Waitangi exception, insufficient IP and services provisions, and weak and unenforceable chapters on Indigenous cooperation and SMEs. *See generally* JASON PAUL MIKA, ŪROPI TAUHOKOHOKO KA TAEA NEW ZEALAND – EUROPEAN UNION FREE TRADE AGREEMENT: AN INDEPENDENT ASSESSMENT OF THE IMPACTS FOR MĀORI (2023) (an independent assessment commissioned by the Ministry of Trade and Foreign Affairs of the New Zealand-EU FTA focused on sectoral and issue-specific outcomes built around methodology involving modelling, interviews, and qualitative and quantitative assessment; this assessment raises concerns with Māori treaty rights and intellectual property rights, as well as distribution of benefits.) *See also* TE TAUMATA, AN ASSESSMENT OF WHAT THE EU FTA DELIVERS, OR COULD DELIVER, FOR MĀORI 13 (2023) (ex ante assessment of how Māori would be impacted by the New Zealand-EU FTA).

that follow, through their diffusion upward from the national level. This preliminary assessment highlights both micro approaches or regimes at the level of domestic law and regulation and micro interventions in the form of innovative legal design features and procedures within these regimes that will have implications for future rules at the regional and multilateral levels.

Protection of individual and community rights in the digital space is an area in which domestic rules have incorporated human rights and development considerations. This often arises in the context of data privacy protection, where, for example, a number of legal regimes explicitly protect data related to race, ethnic or tribal origin, political opinion, religious beliefs, health, and sexual orientation. However, despite the expansion of rights, significant gaps continue to exist in legal coverage and implementation.

Data protection and privacy laws are an important instrument for safeguarding human rights.[28] Although no longer a purely micro approach due to its global replication, the EU's GDPR is often cited as an example of a law with expansive data protection that treats privacy as a fundamental right consistent with human rights norms, which has influenced a number of other national laws worldwide.[29] The GDPR, which is aligned with the European Convention on Human Rights and the Charter of Fundamental Rights of the EU,[30] defines categories of personal data for heightened protection, including data related to race, religion, sexual orientation, and others, generally allowing for direct application of at least some rights, like the right to be forgotten.[31] One feature of the GDPR that is often raised in a human rights context is its "opt-in" character, which gives data holders the right to choose whether or not personal data will be collected.[32] The GDPR's influence

28. *See* Burri, *supra* note 1.

29. ANU BRADFORD, DIGITAL EMPIRES: THE GLOBAL BATTLE TO REGULATE TECHNOLOGY 105, 325 (2023). As of 2023, the EU's data protection approach had influenced many of the over 150 domestic data privacy regimes worldwide.

30. Regulation (EU) 2016/679 of the European Parliament and the Council of 27 April 2016 on the protection of natural persons with respect to the processing of personal data and the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation) 2016 O.J. (L 119) [hereinafter General Data Protection Regulation]. The EU also has a draft AI law and Digital Services Act (2023). Anupam Chander, Margot E. Kaminski, & Willaim McGeveran, *Catalyzing Privacy Law,* 105 MN. L. REV. 1733, 1747 (2021). *See also,* Mira Burri, *Digital Transformation as a Reshaper of Global Trade Law,* in LAW AND ECONOMICS OF DIGITAL TRANSFORMATION 387 (Klaus Mathis & Avishalom Tor eds., 2023).

31. General Data Protection Regulation, *supra* note 30, ch. 2, art. 9, *Processing of Special Categories of Personal Data*; ch. 3, art. 17, *Right To Erasure ('Right To Be Forgotten').*

32. *Id.* ch. 2, art. 7, *Conditions For Consent.*

spreads through four channels: (1) its extraterritorial reach (Art. 3 obliges foreign firms that target EU residents to comply); (2) the EU's adequacy regime (Art. 45 incentivizes governments to legislate close alignment to keep data flowing); (3) global platforms, clouds, and audit providers that operationalize GDPR concepts in contracts, standard clauses, and compliance instruments; and (4) global diffusion and replication. Together, these yield de facto and de jure standardization.

Many countries have data privacy rules modeled on the EU's GDPR that incorporate this human rights dimension, such as Brazil's General Data Protection Law and Thailand's Personal Data Protection Act.[33] China's Personal Information Protection Law is also similar to the GDPR in terms of personal data protection.[34] Singapore, which has been a leader in the digital space (and at the regional level as well), also has a Personal Data Protection Act that shares characteristics with these other instruments, although it does not delineate categories of protection.[35] Several African countries have GDPR-based data privacy laws, including Kenya, Nigeria, Mauritius, and Uganda.[36] Nigeria's regulatory framework, for example, which includes the Data Protection Regulation (2019) and Data Protection Act (2023),[37] includes a right to data portability, the right to access and deletion of data, and the right to be forgotten.[38]

Comprehensive data protection laws are also appearing in the Middle East, such as Saudi Arabia's Personal Data Protection Law,[39] which guarantees data subjects the right to be informed, access to personal data, correction of personal data, and deletion of personal data.[40]

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33. Lei No. 13.709, De 14 De Agosto De 2018, Lei Geral de Proteção de Dados Pessoais [Law No. 13.709, August 14, 2018, General Data Protection Law] (Braz.); Personal Data Protection Act, B.E. 2562 (2019) (Thai.).

34. Zhonghua Renmin Gongheguo Geren Xinxi Baohu Fa (中华人民共和国个人信息保护法) [Personal Information Protection Law of the People's Republic of China] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 20, 2021, effective Nov. 1, 2021) 2021 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ. 6 (China).

35. Personal Data Protection Act, No. 26 of 2012 (2012) (Sing.).

36. *See generally* Data Protection Act, No. 24 (2019) (Kenya); Nigeria Data Protection Regulation (2019); *see generally* Nigeria Data Protection Act (2023); Data Protection Act, No. 20 of 2017 (Mauritius); The Data Protection and Privacy Act, No. 9 of 2019 (Uganda).

37. *See generally* Nigeria Data Protection Regulation (2019); *see generally* Nigeria Data Protection Act (2023).

38. Nigeria Data Protection Regulation (2019), § 2.1.

39. *See Saudi Arabia: Summary*, ONETRUST DATAGUIDANCE, https://www.dataguidance.com/jurisdiction/saudi-arabia (https://perma.cc/E5HT-EBHT).

40. *Id.* art. 4.

Both Nigeria and Saudi Arabia include requirements for obtaining specific, legitimate consent for processing personal data.[41]

At a sub-national level, California's Consumer Privacy Act (CCPA) provides protection for data subjects and allows data subjects to opt-in to data collection; however, it does not treat data privacy as a fundamental human right, in contrast to the GDPR.[42] In the United States, the CCPA has been the catalyst for state privacy laws rather than the GDPR,[43] highlighting a notable micro approach in the area of digital regulation. However, like the GDPR, even sub-national rules like the CCPA have the potential to morph from micro models into macro approaches as their influence grows. While some degree of replication can be desirable, such as the more widespread protection of rights, micro approaches should be customized to local circumstances and priorities.

Transparency is also central to human rights and sustainability in the digital economy. Singapore, for example, has focused on transparency measures, including a number of guides for individuals and companies in several areas, such as the Singapore Personal Data Protection Commission's "Good Practices to Secure Personal Data in the Cloud Platform," "Guide on Personal Data Protection Considerations for Blockchain Design," "Guide on Responsible Use of Biometric Data in Security Applications," and "Guide to Basic Anonymization."[44]

Estonia has built upon the GDPR to include additional flexibilities in its Personal Data Protection Act and has taken an innovative approach to data infrastructure through its "data embassy program." The "data embassy" is physically located in Luxembourg and is protected by an agreement between the two countries.[45] It is designed to maintain full jurisdiction over data and provide security for sensitive government

41. *Id.*

42. Chander et al., *supra* note 30, at 1755; California Consumer Privacy Act, Cal. Civ. Code §§ 1798.100–1798.199 (West 2018).

43. Cal. Civ. Code § 1763 (West 2018). In Chander et al., *supra* note 30 at 1763, the authors argue that the United States represents an exception to the prevailing narrative that the GDPR "has been the dominant influence on both de facto and de jure spread of privacy law worldwide . . . a narrative that largely, and in our view mistakenly, adheres to a notion of nation-states (and supranational entities) as unitary actors rather than considering the various players within them."

44. DIGITAL POLICY ALERT, https://digitalpolicyalert.org (last visited Aug. 29, 2025). The Cyber Security Agency of Singapore has also issued 'Cybersecurity Toolkits for Enterprises' and 'Cyber Safe Partnership Programme' (last visited Aug. 26, 2025).

45. Agreement Between the Republic of Estonia and the Grand Duchy of Luxembourg on the Hosting of Data and Information Systems, Est.-Lux., June 20, 2017, 3249 U.N.T.S. 55178.

and personal data—including in the event of a cyberattack in Estonia.[46] This approach also creates a public sector framework for digital infrastructure that can help mitigate conflicts between private and public priorities.[47]

Despite these innovations at the domestic level, other aspects of human rights protection are absent in these models. In the context of data privacy protections, opting in to rights can be challenging at an individual level, given the lack of uniformity in allowing data holders to exert these rights and the frequency with which consent is requested. Further, because data privacy regimes often have extraterritorial application, significant and complex compliance challenges can arise, especially for small businesses.[48] The extraterritorial nature of these rules can also be difficult for nations with limited regulatory capacity, including developing economies.

In addition, data privacy rules have important gaps, such as the absence of strong protections on data collection, including data mining and data scraping in the context of AI, which can violate data privacy and human rights and perpetuate bias in the digital realm.[49] The lack of such protections creates significant human rights challenges, because much of the source data used for data mining is confidential, private, and sensitive.[50] Moreover, data mining can lead to bias selection and stigmatization, with unavoidable false positives and false negatives resulting in scenarios where people are judged on the basis of inappropriate characteristics.[51] While some countries have legal instruments

46. Yuliya Talmazan, *Data Security Meets Diplomacy: Why Estonia is Storing its Data in Luxemburg*, NBC NEWS (June 25, 2019), https://www.nbcnews.com/news/%20world/data-security-meets-diplomacy-why-estonia-storing-its-data-luxembourg-n1018171.

47. For a discussion of challenges with private sector control of digital infrastructure, see *Big Tech 'Digital Trade' Plan for IPEF Could Undermine Key Congressional and Administration Privacy, Anti-Monopoly, and AI Accountability Initiatives,* RETHINK TRADE (Jan. 16, 2023), https://rethinktrade.org/reports/https-rethinktrade-org-wp-content-uploads-2023-01-conflicts-between-key-digital-proposals-and-prospective-ipef-digital-trade-terms-memo581-2-pdf/.

48. For example, the GDPR requires compliance for any company dealing with the data of EU citizens. General Data Protection Regulation, *supra* note 30, art. 3.

49. The author would like to thank Amanda Levendowski for her suggestions on this point. Data mining is the process of identifying patterns and extracting information from large data sets using machine learning and AI; data scraping involves collecting raw data from online sources and can be particularly problematic in the context of data privacy and copyright. *See* Bart Custers, *Data Mining with Discrimination Sensitive and Privacy Sensitive Attributes in* PROCEEDINGS OF ISP 31, 36 (2010). *See also,* Amanda Levendowski, *How Copyright Law Can Fix Artificial Intelligence's Implicit Bias Problem*, 93 WASH. L. REV. 579, 602 (2018).

50. Levendowski *supra* note 49 at 1.

51. *Id.*

related to AI, such as the EU's AI Act, which incorporates the GDPR's rights-based approach,[52] and Peru's 2023 AI law, which notably "aims to promote the use of AI in favor of the country's economic and social development,"[53] these instruments do not cover all areas critical to human rights and sustainability.

In addition to data privacy, countries' laws and policies protect vulnerable communities in other ways, including through protections from discrimination and by providing access to government programs and digital infrastructure. For example, South Korea protects against discrimination, including for persons with disabilities, in both its broader discrimination laws and digital laws.[54] Mexico's digital laws enhance inclusion by requiring translation into indigenous languages so that communities can be informed on equal terms of rights that are protected and the means to enforce this protection.[55] India has focused on digital infrastructure and inclusion through a program called the "Nine Pillars of Digital India," which includes investment to address the digital divide through broadband highways, universal access to phones and mobile connectivity, a public internet access program, e-governance, electronic delivery of services, information for all (e.g., platforms allowing

52. Commission Regulation 2024/1689 of June 24, 2024, Laying Down Harmonised Rules on Artificial Intelligence and Amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), 2024 O.J. (L 1689).

53. Maia Levy Daniel, *Regional Cooperation Crucial for AI Safety and Governance in Latin America,* BROOKINGS INST. (Feb. 13, 2025), https://www.brookings.edu/articles/regional-cooperation-crucial-for-ai-safety-and-governance-in-latin-america/; Ley No. 31814, Ley Que Promueve El Uso De La Inteligencia Artificial En Favor Del Desarrollo Económico Y Social Del Pais [Law No. 31814, Law Promoting the Use of Artificial Intelligence for the Economic and Social Development of the Country] (2023) (Peru).

54. Jang-aeinchabyeolgeumji mich gwonliguje deung-e gwanhan beoblyul [Jang-aeinchabyeolgeumjibeob] [Act on the Prohibition of Discrimination Against Persons with Disabilities and Remedy Against Infringement of Their Rights] (S. Kor.); Gaeinjeongbo bohobeob [Personal Information Protection Act] (S. Kor.); Sin-yongjeongboui iyong mich boho-e gwanhan beoblyul [Sin-yongjeongbobeob] [Act on the Use and Protection of Credit Information] (S. Kor.); Act on the Protection and Use of Location Information, Act No. 17689 (S. Kor.).

55. Ley Federal de Protección de Datos Personales en Posesión de los Particulares [LFPDPPP] [Federal Law on the Protection of Personal Data in Held by Private Parties], Diario Oficial de la Federación [DOF], 03-21-2025 (Mex.); Ley General de Protección de Datos Personales en Posesión de Sujetos Obligados [LGPDPPSO] [General Law on the Protection of Personal Data Held by Obligated Subjects], Diario Oficial de la Federación [DOF], 26-01-2017 (Mex.).

communication between citizens and government), and electronics manufacturing.[56]

A number of countries, including many in Africa, explicitly recognize the economic development implications of digital rules and regulations. Some have put in place policies to promote the digital sector domestically, in some cases also limiting foreign competition.[57] For example, Rwanda's regulatory framework for digital trade and data security is designed to promote domestic economic benefit through an emphasis on data privacy and data governance,[58] cybersecurity regulations,[59] and measures to foster an e-commerce enabling environment.[60] The link between development and digital regulation can also be seen in the Digital Trade Protocol to the African Continental Free Trade Area (AfCFTA) Agreement, discussed in Part III, which is evidence of upward diffusion.

The government of Ghana has several domestic policy initiatives related to financial inclusion and digital payments, acknowledging the central role that finance plays in digital inclusion. These include the National Financial Inclusion and Development Strategy, the Digital Financial Services Policy, and the Cash-Lite Roadmap, which are designed to increase financial inclusion, create a resilient and innovative digital ecosystem, and build an inclusive digital payments ecosystem.[61] Ghana has also established a Digital Payments Coordination Unit to drive the effective implementation of these policies.[62] The Ghana e-payment portal launched in June 2020 centralizes financial services, allowing Ghanaians to fulfil financial obligations to the

56. MINISTRY OF ELEC. & INFO. TECH., GOV'T OF INDIA, *Nine Pillars of Digital India*, https://www.meity.gov.in/divisions/digital-india (last visited Feb. 27, 2025).

57. Neha Mishra & Kholofelo Kugler, *International Community in the Global Digital Economy: A Case Study on the African Trade Framework,* 74 INT'L & COMPAR. L. Q., Nov. 2024 at 2 (citing United Nations Trade and Dev. (UNCTAD) Digital Economy Report 2021 – Cross-Border Data Flows and Development: For Whom the Data Flow at 122-23, U.N. Doc. UNCTAD/DER/2021 (2021)).

58. MINISTRY OF YOUTH & ICT, NATIONAL DATA REVOLUTION POLICY iii (2017) (Rwanda).

59. Cybersecurity, Regulation No. 010/R/CR-CSI/RURA/020 of 29/05/2020, art. 1 (Rwanda).

60. *See, e.g.*, MINISTRY OF ICT, SMART RWANDA 2020 MASTER PLAN: TOWARDS A KNOWLEDGE BASED SOCIETY 29 (2015) (Rwanda); NAT'L BANK OF RWANDA, RWANDA PAYMENT SYSTEM STRATEGY: TOWARDS A CASHLESS RWANDA 2018-2024 § 4.3.1 (2017) (Rwanda).

61. MINISTRY OF FINANCE, NATIONAL FINANCIAL INCLUSION AND DEVELOPMENT STRATEGY (2018) (Ghana); MINISTRY OF FINANCE, DIGITAL FINANCIAL SERVICES POLICY (2020) (Ghana); MINISTRY OF FINANCE, Toward a CASH-LITE GHANA (2019) (Ghana).

62. GHANA DIGIT. PAYMENTS COORDINATION UNIT, *Digital Payments Roadmap for Ghana*, https://www.bog.gov.gh (last visited Mar. 3, 2025).

government through a single digital platform.[63] Further study of these policies to assess their diffusion and impact could help signal where other countries might adapt and scale these micro approaches.

Some countries also have legal provisions or policies that provide flexibility designed to help MSMEs. Jurisdictions such as Singapore, the United Kingdom, and others use regulatory sandboxes to provide spaces for innovation and cooperation in a supervised environment.[64] Australia has exempted businesses with a specified annual turnover from the requirements of its Privacy Act as a way to address implementation and compliance challenges.[65] Brazil has also established special conditions for micro-enterprises, small businesses, start-ups, and nonprofit legal entities under its data regulations, including simplified information security and data protection policies.[66]

New Zealand is a particularly notable example of a country that combines data protection, sustainability, community engagement, and digital development for small businesses. In 2021, the Mana Ōrite Relationship Agreement was signed by Statistics NZ and the Data Iwi Leaders Group of the National Iwi Chairs Forum to engage with the iwi-Māori on data governance and use of data in a sustainable, positive way for the iwi, hapū, and whānau communities.[67] The Agreement requires that the government of New Zealand consult with the Māori prior to implementing any digital transformation initiatives, recognizing the validity of different perspectives, knowledge systems, and worldviews.[68] During the COVID-19 pandemic, the government of New Zealand also created a fund to help build capacity among small and medium-sized enterprises (SMEs) run by Māori, Pacific, and people with disabilities.[69] The influence of these micro innovations can be seen in a number of trade agreements, particularly those to which New Zealand is a party.

The examples of domestic law and policy discussed briefly in this section highlight several important takeaways. First, domestic laws and

63. *Ghana Government Launches Unique E-Payment Platform for Public Services*, RESILIENT DIGIT. AFR. (June 29, 2020), https://resilient.digital-africa.co/en/blog/2020/06/29/ghana-government-launches-unique-e-payment-platform-for-public-services/.

64. MONETARY AUTHORITY OF SINGAPORE, *Regulatory Sandbox*, https://www.mas.gov.sg/development/fintech/regulatory-sandbox (last visited Mar. 3, 2025); INFO. COMM'R'S OFF., *Regulatory Sandbox*, https://ico.org.uk/for-organisations/advice-and-services/regulatory-sandbox/ (last visited Mar. 3, 2025).

65. Privacy Act 1988 (Cth) (Austl.).

66. Lei No. 13.709, De 14 De Agosto De 2018, Lei Geral de Proteção de Dados Pessoais [Law No. 13.709, August 14, 2018, General Data Protection Law] (Braz.)

67. Mana Ōrite Relationship Agreement, June 22, 2021 (N.Z.).

68. *Id.*

69. *See* Kuhlmann 2025 *supra* note 21, at 48.

policies often contain notable innovations (e.g., Estonia's data embassy, Singapore's focus on transparency, New Zealand's Indigenous rights approach), as well as more detail and nuance than regional or international legal provisions, highlighting areas in which domestic law could diffuse and share good practices from the bottom up. Second, examples of domestic law highlight some of the challenges associated with implementation and compliance for individual rights holders, MSMEs, and developing economies. Jake Okechukwu Effoduh, Ugochukwu Ejike Akpudo, and Jude Dzevela Kong argue for a human-centric approach to data governance to address these and other challenges, with stronger data privacy and protection for data subjects.[70] They also stress the importance of alignment with international legal instruments, including human rights instruments, with important implications for the agreements discussed in Part III.[71] In many cases, these gaps suggest that more detailed provisions should be considered in both domestic and international instruments.

In addition, domestic law shows that many countries tend to gravitate to models advanced by economically dominant economies, including Europe and California,[72] even though there is more variation than this overall trend would suggest.[73] Anu Bradford's "Brussels Effect," which refers to Europe's dominant influence on the laws within and among nations, is a compelling and commonly used frame of reference for the diffusion of the EU's regulatory approach,[74] which extends to digital regulation as discussed above.[75] While this can be an important way of globally spreading digital protection and rights, as the diffusion of the GDPR model highlights, there are downsides to nearly identical regulatory approaches. Critics have referred to the spread of dominant legal models, particularly given their extraterritorial nature, as "regulatory annexation" that occurs through the exportation of regulatory and business approaches.[76] These dynamics can have significant implications for local and international governance and development. Not only do they give rise to capacity and compliance challenges, but they may also

70. *See* Effoduh et al., *supra* note 20, at e34-1.

71. *Id.*, at e34-4.

72. *See., e.g.*, Adam Chilton, Anu Bradford, and Katerina Linos, *"Dynamic Diffusion,"* 27 J. INT'L ECON. L. 538 (2024). For a discussion of the role the "California Effect" has played in U.S. data privacy law, see Chander et al., *supra* note 30 at 1442.

73. Mishra & Kugler, *supra* note 57, at 1.

74. *See generally* ANU BRADFORD, THE BRUSSELS EFFECT (2020).

75. *See generally* BRADFORD, *supra* note 29.

76. For a discussion of "regulatory annexation," see Vincent Obia, *What Can African Countries Do to Regulate Artificial Intelligence?*, MEDIA@LSE (June 13, 2023), https://blogs.lse.ac.uk/medialse/2023/06/13/what-can-african-countries-do-to-regulate-artificial-intelligence/.

hamper both meaningful protection and future innovation from the bottom up. Development will also be limited if local social, legal, and economic needs are not part of legal design.[77] These considerations are particularly important as domestic laws continue to evolve, and they will be critical as new legal instruments, such as the EU AI Act, gain greater influence.

B. *Micro Analysis of Stakeholder Needs Through Empirical Study*

Integrating human rights and sustainability into digital regulation rests not only on substantive legal design but also depends on procedures for stakeholder engagement and input. The Mana Ōrite Relationship Agreement is one example of how such engagement could be integrated into rulemaking at all stages, especially when new rules and treaties are in the design stage, as well as once they are finalized and implemented.

Empirical research can also contribute to a better understanding of stakeholder needs, which is central to ensuring that digital rules deliver on their development potential. A micro empirical study conducted by Katrin Kuhlmann and Tara Francis,[78] focused on the WTO E-Commerce Customs Duty Moratorium that has been in place since 1998 to limit global taxes on e-commerce, is one example.[79] Governments have taken differing positions on the moratorium, with some stressing the importance of maintaining it to keep trade restrictions to a minimum and others, mainly some developing economies, pressing for lifting the moratorium to open up policy space to generate revenue from digital goods and services.[80] The moratorium has particular implications for MSMEs, which could be significantly disadvantaged if governments change course and add costs to digital trade.[81]

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77. *See* Effoduh et al., *supra* note 20, at e34-3. *See generally* OLUFUNMILAYO B. AREWA, DISRUPTING AFRICA (2021).

78. *See generally* KATRIN KUHLMANN & TARA FRANCIS, THE MSME MORATORIUM: STORIES FROM MSMES IN SOUTH AFRICA AND KENYA ON THE WTO MORATORIUM ON CUSTOMS DUTIES ON ELECTRONIC TRANSMISSIONS (2024).

79. World Trade Organization, Declaration on Global Electronic Commerce of 25 May 1998, WTO Doc. WT/MIN(98)/DEC/2 (1998). The E-Commerce Moratorium is currently in place until 2026 but faces an uncertain future.

80. RASHMI BANGA, WTO MORATORIUM ON CUSTOMS DUTIES ON ELECTRONIC TRANSMISSIONS: HOW MUCH TARIFF REVENUE HAVE DEVELOPING COUNTRIES LOST? at page 13 (2022).

81. *See* KUHLMANN & FRANCIS, *supra* note 79, at 17 (2024). *See also* BADRI NARAYANAN GOPALAKRISHNAN ET AL., RESILIENCE AND INCLUSIVITY IN CROSS-BORDER DIGITAL SUPPLY CHAINS THROUGH DIGITAL SERVICES TRADE AND INVESTMENT, at 11 (2023); TRADEEXPERETTES, HOW THE WTO E-COMMERCE MORATORIUM IMPACTS WOMEN ACROSS THE WORLD 6 (2023).

The micro empirical study, which included a survey of nearly 450 MSMEs in Kenya and South Africa, underscores the importance of maintaining the moratorium for economic development and small businesses.[82] The majority of MSMEs surveyed (three-fifths, or sixty percent) expressed that they had little or no capacity to comply with additional customs administrative requirements.[83] Over half (fifty-five percent) stated that they would pass on additional administrative costs to consumers, resulting in higher costs. The majority (sixty-three percent) of MSMEs reported that there would be a "significant" or "moderate" impact on their growth potential if the Moratorium were to lapse, and a majority (sixty-one percent) reported that there would be "significant" or "moderate" impact on competitiveness in global markets.[84]

The study also has broader implications for digital regulation. It shows that the substantial majority of MSMEs (sixty-five percent) were not aware of the significant policy discussions in Geneva and elsewhere regarding the ongoing application of the moratorium, and an even more significant majority (seventy-four percent) had not been consulted by their governments regarding the possible imposition of import tariffs on electronic transmissions.[85] Notably, a large majority of MSMEs surveyed (eighty-eight percent) noted that communication channels with government are not easily accessible, highlighting a critical gap in engagement that is central to making trade work for development.[86] Only a small percentage (thirteen percent) stated that they felt that government adequately represented their interests in international negotiations.

This study highlights an important connection between trade and digital measures and socio-economic opportunities while presenting a model for deeper analysis of digital trade rules and their impact. It underscores the implications of a measure like the moratorium and the repercussions of a policy change if the measure were to be reversed. It also provides lessons regarding micro-level empirical analysis more generally, reinforcing the need for more empirical assessment and bottom-up analysis to understand the design of legal instruments and the impact of a change in rules. Without greater micro-level study, the full potential of sustainable development through trade and digital rules will remain out of reach.

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82. KUHLMANN & FRANCIS, *supra* note 79. The study used a structured survey instrument to gather nearly 450 impressions from MSME as well as interviews with over 30 MSMEs to gather more detailed "stories" or case studies.

83. *Id.*, at 5-6.

84. *Id.*, at 6.

85. *Id.*

86. Kuhlmann 2021, *supra* note 21 at 6.

In addition to micro-level studies, empirical models could be applied in a number of contexts, including "micro mapping" to compare the disaggregated details of different legal models, including socio-legal elements, and to map the diffusion of domestic legal approaches (as well as the impact of extraterritorial practices).[87] Micro mapping as an empirical tool could be useful in the context of legal instruments like the GDPR to better understand its influence on other countries' domestic laws and the implications of its diffusion, adoption, and adaptation, both in terms of rights and compliance. It could also be useful in assessing the diffusion of sub-national models like California's CCPA, as well as the spread of legal innovations from less economically powerful economies. While the EU AI Act is new, micro mapping could help trace its influence as other countries begin to adopt AI legislation, providing an empirical avenue to highlight additional innovations and legal adaptation. Ultimately, micro mapping could be used to show subtle variations in domestic countries' legal approaches, which could signal important differences and priorities, particularly in relation to the more dominant legal models. Such studies are critical, particularly given the trend towards increasing international reliance on a limited set of legal models and norms.[88] The tendency to cast the rules of more powerful economies as a common standard in the name of universal "best practices" will impact the ability to regulate the global digital economy in a way that can achieve sustainable development, protect human rights, and preserve more local, tailored approaches to digital regulation. Micro-level innovations have significant implications for emerging international and regional rules, as discussed in Part III.

III. Bridging Micro and Macro Approaches: Development and Digital Rules in Trade Agreements

Internationally, the digital economy is largely regulated through a "patchwork" of obligations,[89] mainly through a growing number of trade agreements, also referred to here as RTAs. RTAs, along with some

87. Kuhlmann 2025, *supra* note 21 at 21.

88. *See* Mor Mitrani, *Demarcating the International Community: Where Do International Practices Come From? in* Local Engagement with Int'l Econ. L. and Human Rts. 127, 146 (Ljiljana Biukovic & Pitman B. Potter eds., 2017).

89. Katrin Kuhlmann, Handbook on Provisions and Options for Trade in Times of Crisis and Pandemic, U. N. Econ. & Soc. Comm'n for Asia & the Pac. at 107 (2021) [hereinafter Kuhlmann UN 2021]. *See also* Katrin Kuhlmann, Handbook on Provisions and Options for Sustainable and Inclusive Trade and Development in Trade Agreements, U. N. Econ. & Soc. Comm'n for Asia & the Pac. (2023) [hereinafter Kuhlmann UN 2023].

international soft law instruments,[90] have been the main source of innovation in international law in the digital realm, since progress at the multilateral (or WTO) level has been slow, leaving RTAs to fill the void in international law. While trade agreement provisions have emerged in the absence of multilateral rules on the digital economy, they can also be viewed as part of the process of international rule development, with regional approaches acting as a precursor to multilateral approaches. Domestic legal design features often diffuse upward into RTAs and, in turn, into soft law and multilateral instruments. This micro-meso-macro diffusion is becoming a primary engine of rulemaking in the regulation of the digital economy.

A. *Diffusion of a Rights-Based Approach*

While regional models often raise concerns of fragmentation, they can serve as building blocks to connect domestic and international law. Regional instruments, which represent a meso level of international rules, already address some aspects of human rights and sustainability in the digital realm, including the link between data privacy and human rights. Consistent with domestic legislative approaches, the EU, New Zealand, and others incorporate a rights-based approach to data in their trade agreements.[91]

The rights-based approach to data privacy appears in a number of RTAs, including the 2024 New Zealand-EU FTA, reflecting the approach of both parties. Article 12.5 of the New Zealand-EU FTA "recognises that the protection of personal data and privacy is a fundamental right and that high standards in this regard contribute to enhancing consumer confidence and trust in digital trade."[92] However, the agreement leaves the details on how this protection will be provided to the parties.[93]

90. A number of international soft law frameworks are also relevant in the digital space, such as the Asia Pacific Economic Community (APEC) Privacy Framework and Cross-Border Privacy Rules, the Organisation for Economic Co-Operation and Development (OECD) Recommendation of the Council concerning Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data (2013), the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce 1996, the UNCITRAL Model Law on Electronic Signatures 2001, and other instruments.

91. *See* Free Trade Agreement between the European Union and New Zealand [2023] NZTS 11 (signed 9 July 2023, entered into force 1 May, 20240, art. 12.5 (1).

92. Free Trade Agreement between the European Union and New Zealand [2023] NZTS 11 (signed 9 July 2023, entered into force 1 May, 20240, art. 12.5 (1).

93. *Id.* art. 12.5 (2).

Similar approaches appears in other RTAs, including the European Free Trade Agreement (EFTA)-Moldova Agreement[94] and Ireland-Lichtenstein-Norway-United Kingdom (UK) FTA.[95] The 2021 UK-Cameroon Interim Economic Partnership Agreement contains more detailed language on rights, noting the parties' "common interest in protecting the fundamental rights and freedoms of natural persons, and in particular their right to privacy, with respect to the processing of natural data."[96]

As another example, the Supplementary Act on Data Protection within the Economic Community of West African States (ECOWAS) also treats data protection as a human right, safeguarding public liberties and privacy.[97] The ECOWAS Supplementary Act is a human rights instrument that includes a clear provision on data protection, enabling data subjects to judicially enforce their right to data privacy before the Community Court of Justice of the ECOWAS.[98] These are notable innovations at the regional level given their link between digital rules and human rights. Many other RTAs incorporate provisions on data privacy as well, often leaving the details to domestic legal measures.[99]

The Korea-Singapore Digital Partnership Agreement and other agreements take a similar but slightly different approach to personal data protection, emphasizing "economic and social benefits" over rights and stressing that each party "shall adopt or maintain a legal framework that provides for the protection of personal information of persons who conduct or engage in electronic transactions."[100] The

94. Free Trade Agreement Between the EFTA States and The Republic of Moldova, art. 5.13 (1), (2), June 27, 2023, RS 0.632.315.651.

95. Free Trade Agreement between Iceland, the Principality of Liechtenstein and the Kingdom of Norway and the United Kingdom of Great Britain and Northern Ireland, art. 4.12., 8 July 2021, MS No. 3 (2021) (CP 496).

96. Interim Agreement establishing an Economic Partnership Agreement between the United Kingdom of Great Britain and Northern Ireland, of the one part, and the Republic of Cameroon, of the other part, art. 61(a), 9 Mar. 2021, U.K.-Cameroon, MS No. 2 (2021) (CP 418).

97. *See* Uchenna Jerome Orji, *Regionalizing Data Protection Law: A Discourse on the Status and Implementation of the ECOWAS Data Protection Act,* 7 INT'L DATA PRIVACY L., 179, 187 (2017); Economic Community of West African States (ECOWAS) Supplementary Act on Personal Data Protection within ECOWAS, art. 19, Feb. 16, 2010, A/SA.1/01/10, revised 2024.

98. Yohannes Eneyew Ayalew, *Untrodden Paths Towards the Right to Privacy in the Digital Era Under African Human Rights Law*, 12 INT'L DATA PRIV. L. 16, 24 (2022).

99. *See, e.g.,* Comprehensive and Progressive Agreement for Trans-Pacific Partnership [2018] NZTS 8 (signed 8 March, 2018, entered into force 20 December 2018), art. 14.8 [hereinafter CPTPP]; United States-Mexico-Canada Agreement (USMCA) art. 19.8, Nov. 30, 2018, 134 Stat. 11, [hereinafter USMCA]; Regional Comprehensive Economic Partnership Agreement [2020] NZTS 5 (signed 15 November, 2020, entered into force 1 January, 20200) art. 12.8 [hereinafter RCEP].

100. Korea-Singapore Digital Partnership Agreement, art. 14.17 (1) and (2).

Korea-Singapore Digital Partnership Agreement also emphasizes non-discrimination in data protection,[101] and it references the Organisation for Economic Co-operation and Development (OECD) Guidelines Governing the Protection of Privacy and Trans-border Flows of Personal Data and the APEC Cross Border Privacy Rules System.[102] This approach is also contained in the Digital Economy Partnership Agreement (DEPA),[103] UK-Singapore Digital Economy Agreement (DEA),[104] Australia-Singapore DEA,[105] Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP),[106] and the U.S.-Mexico-Canada Agreement (USMCA).[107]

Further, although not a trade agreement, the reach of the GDPR can be seen in the EU's Stabilisation and Association Agreements with prospective members, such as countries in Southeast Europe, which require that the prospective member "harmonise its legislation concerning personal data protection with Community law and other European and international legislation on privacy upon the entry into force of this Agreement."[108] Over time, the EU AI Act could also take on a similar role.[109]

It is important, however, to stress that even with the incorporation of rights-based domestic approaches into trade agreements, most of these provisions leave the details to national law, which can potentially undermine—rather than reinforce—rights. Graham Greenleaf asserts that the lack of specificity in RTA provisions on data privacy, such as the provisions in the CPTPP, which are coupled with commitments in other

101. *Id.* art. 14.17 (4).

102. *Id.* art. 14.17 (3), (5), (7), (8), (9).

103. Digital Economy Partnership Agreement (DEPA), art. 4.2. [2020] NZTS 2 (signed 11 June 2020, entered into force 7 January 2021).

104. UK-Singapore Digital Economy Agreement (DEA), art. 8.61-E, 22 Feb. 2022, U.K.-Singapore, TS No. 22 (2023) (CP 634).

105. Australia-Singapore Digital Economy Agreement (DEA) signed 6 August 2020, [2020] ATS 13 (entered into force 8 December 2020) ch. 14, annex A, art. 17.

106. CPTPP, *supra* note 99, art. 14.8.

107. USMCA, *supra* note 99, ch. 19 art. 19.8.

108. Stabilisation and Association Agreement between the European Communities and the Republic of Serbia Decision 2013/490/EU, art. 81, Apr. 29, 2008, 2013 O.J. (L 278); Stabilisation and Association Agreement between the European Communities and their Member States, of the one part, and Bosnia and Herzegovina, of the other part 2015/998/EU, art. 79, June 16, 2008, 2015 (O.J. L 164); Stabilisation and Association Agreement between the European Communities and their Member States, of the one part, and the Republic of Albania, of the other part, art. 79, Apr. 28, 2009, 2009 O.J. (L 107).

109. Graham Greenleaf, *EU AI Act: Brussels Effect(s) or a Race to the Bottom?* 190 PRIVACY L. & BUS. INT'L REP. 1, 9-10 (2024).

areas such as cross-border data transfer and data localization, may actually pose a threat to the protections under domestic privacy laws.[110] This highlights the need for studying the interconnections between micro and macro-level digital rulemaking as this Article proposes.

B. *Broader Trends in Digital Provisions in RTAs*

Incorporation of digital provisions in RTAs is on the rise, and since 2001, forty-four percent of all RTAs have included at least some provision(s) on digital trade or e-commerce, with over seventy percent of RTAs signed since 2015 addressing digital trade issues.[111] These include recent comprehensive RTAs, such as the CPTPP, the Regional Comprehensive Economic Partnership (RCEP), the AfCFTA, and the USMCA. Overall, the OECD estimates that incorporating digital provisions in RTAs can have a significant impact and can effectively "double the effect" of the agreements.[112]

Incorporation of development-focused provisions in RTAs is also on the rise. The U.N. estimates that one-third of trade agreements overall and two-thirds of trade agreements since 2005 include at least some reference to sustainable development, ranging from broad affirmations referencing the SDGs to provisions on the environment, labor, gender, and digital inclusion.[113] Trade agreement provisions on development and the digital economy are also becoming more frequent, although they still lack the detail that can be found in many national systems. Relevant RTA provisions encompass data privacy, digital inclusion, development of digital skills, and the digital divide,[114] although the latter seldom appears explicitly in RTA provisions. Related issues, such as

110. Graham Greenleaf, *2017-2018 Further Update to Graham Greenleaf's Asian Data Privacy Laws – Trade and Human Rights Perspectives,* UNIV. OF NEW SOUTH WALES L. RESEARCH SERIES 2018 at 4. *See also,* Graham Greenleaf ASIAN DATA PRIVACY LAWS – TRADE AND HUMAN RIGHTS PERSPECTIVES, Oxford University Press, 2014, 2017.

111. IMF et al., *supra* note 4, at 3.

112. Javier López González et al., *supra* note 6, at 1.

113. Louise Malingrey & Yann Duval, *Mainstreaming Sustainable Development in Regional Trade Agreements: Comparative Analysis and Way Forward for RCEP*, at 3 (ARTNeT, Working Paper No. 213, 2022).

114. *See, e.g.,* CPTPP, *supra* note 99, art. 14.8; USMCA, *supra* note 99, art. 19.8; Regional RCEP, *supra* note 101, art. 12.8; MINISTRY OF FINANCE, NATIONAL FINANCIAL INCLUSION AND DEVELOPMENT STRATEGY (2018) (Ghana); MINISTRY OF FINANCE, DIGITAL FINANCIAL SERVICES POLICY (2020) (Ghana); MINISTRY OF FINANCE, Toward a CASH-LITE GHANA (2019) (Ghana); Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, art. 33, Feb. 18, 2024. *See also* UK-Singapore Digital Economy Agreement (DEA), 22 Feb. 2022, U.K.-Singapore, TS No. 22 (2023) (CP 634).

labor rights and affirmations of the SDGs, appear in some digital trade provisions as well.[115] However, even with this expansion of development-focused provisions related to digital trade, all aspects of sustainable development—economic, social, and environmental—are not evenly balanced, and social dimensions tend to be overlooked, including in the regulation of the digital economy.[116]

Beyond human rights, the limited number of RTAs that deal explicitly with issues of sustainable development in the digital context contain broad, aspirational language and declaratory or soft commitments that are often vague in their construction. While this may give governments policy space to determine which measures would be most beneficial, it could also lead to a disconnect between legal provisions and their context. Important gaps remain, which should be more deeply studied. In addition, most stakeholders are often left out of trade agreement design and negotiation, which can have a negative effect on the resulting obligations.

C. *Multilateral Rules and Soft Law Frameworks on the Digital Economy*

Digital protections are not comprehensive or complete at the multilateral level, although some WTO rules relate to the digital economy.[117] For example, the WTO Trade Facilitation Agreement introduced disciplines on electronic transactions and digitalization that have been important for economic development and the integration of MSMEs into trade.[118]

The absence of multilateral rules on many issues prompted a lengthy process that began with the launch of the WTO Work Programme on E-Commerce in 1998 and recently included agreed-upon text on the WTO Joint Statement Initiative (JSI) on Electronic Commerce,[119] marking an incremental step forward. The JSI could have important implications for economic, social, and sustainable development, but developing economies have raised concerns about the instrument and

115. Regarding labor rights in a digital context, see UK-Singapore Digital Economy Agreement (DEA), art. 8.61-P, 22 Feb. 2022, U.K.-Singapore, TS No. 22 (2023) (CP 634). Regarding the SDGs, see Digital Economy Partnership Agreement (DEPA), pmbl. [2020] NZTS 2 (signed 11 June 2020, entered into force 7 January 2021).

116. Kuhlmann CITD 2023, *supra* note 1.

117. These include the WTO Agreement on Basic Telecommunications and the General Agreement on Trade in Services, as well as the WTO Moratorium on Customs Duties on Electronic Transmissions.

118. Trade Facilitation Agreement, at 1, Nov. 27, 2014, 3247 U.N.T.S. 31847.

119. World Trade Organization, *Joint Statement Initiative on Electronic Commerce*, WTO Doc. WT/L/1056 (July 26, 2024).

have largely decided not to engage in the negotiations, focusing instead on domestic measures and preservation of policy space.[120]

Soft law instruments are also relevant in the context of sustainable digital trade and development. The U.N. SDGs are a good example of pertinent soft law, especially SDG 8 on decent work and economic growth; SDG 9 on building resilient infrastructure, promoting sustainable industrialization, and fostering innovation; SDG 10 on reducing inequalities; and SDG 17 on revitalizing the global partnership for sustainable development.[121] SDG goal 9c speaks directly to the digital divide for least developed countries (LDCs), with a target to "significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet."[122]

In addition to the SDGs, other multilateral soft law instruments have proliferated in relation to digital regulation, particularly through institutions like the OECD and various U.N. bodies. These include the OECD Recommendations on Electronic Authentication (2007), the Protection of Privacy and Transborder Flows of Personal Data (2013), Consumer Protection in E-Commerce (2016), and Enhancing Access to and Sharing of Data (2021).[123] U.N. instruments include the U.N. Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce (1996) and the UNCITRAL Model Law on Electronic Signatures (2001).[124] On AI, several international policy guidelines have been developed, including the G20 AI Guidelines (2019); OECD AI Principles (2019), which were revised in 2024; U.N. Educational, Scientific, and Cultural Organization (UNESCO)

120. *See* United Nations Conference on Trade and Development, *What is at Stake for Developing Countries in Trade Negotiations? The Case of the Joint Statement Initiative* (Feb. 19, 2021), https://unctad.org/publication/what-stake-developing-countries-trade-negotiations-e-commerce.

121. UN Sustainable Development Goals. Rep. of the World Comm'n on Env't and Dev., G.A. Res. 42/187, U.N. Doc. A/Res/42/87, at 46 (Dec. 11, 1987); Rep. of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, U.N. Doc. E/CN.3/2016/2/Rev.1, annex IV (2016) [hereinafter UN SDGs 2016]. *See also*, World Trade Org., World Trade Report 2020: Government Policies to Promote Innovation in the Digital Age 152 (2020); United Nations Economic and Social Commission for Asia and the Pacific, Digital and Sustainable Trade Facilitation: Global Report 2023, at 35 (2024).

122. UN SDGs 2016, *supra* note 120.

123. For a full list of OECD legal instruments, *see OEDC Legal Instruments*, https://legalinstruments.oecd.org/en/instruments?mode=normal&statusIds=1&dateType=adoption (last visited Aug. 26, 2025).

124. *See* U.N. Comm'n. on Int'l Trade L. (UNCITRAL) Model Law on Electronic Commerce (1996) with additional article 5 bis as adopted in 1998, U.N. Sales No. E.99.V.4 (1998); U.N. Commission on International Trade Law (UNCITRAL) Model Law on Electronic Signatures, U.N. Doc. A/56/17 (2001).

Recommendation on AI Ethics (2021); and the Universal Guidelines for AI (2018) of the Center for AI and Digital Policy.[125]

In addition, human rights treaties are closely related to development-focused digital regulation. Article 12 of the Universal Declaration of Human Rights and Article 17 of the International Covenant on Civil and Political Rights encompass protection of privacy rights, which extends to digital privacy.[126] The Convention on the Rights of the Child and the Convention on the Elimination of All Forms of Discrimination Against Women have also adopted commentaries highlighting the importance of equal access to the Internet and digital technology.[127]

Regional instruments cover data rights and governance as well. For example, the Asia Pacific Economic Community (APEC) Privacy Framework and Cross-Border Privacy Rules have shaped more binding rules.[128] Several hard and soft regional instruments also exist on the African continent. These include the African Charter on Human and Peoples Rights and African Union (AU) instruments like the 2022 AU Data Policy Framework (2022), 2014 AU Convention on Cyber Security and Personal Data Protection (Malabo Convention; entered into force 2023), and AU Digital Transformation Strategy (2020–2030).[129] The latter clearly incorporates development objectives, noting the objective of establishing "an integrated and inclusive digital society and economy in Africa that improves the quality of life of Africa's citizens, strengthens the existing economic sector, enables its diversification and development,

125. G20 AI Principles, Ministry of Foreign Affairs of Japan § 1 (June 29, 2019), https://www.mofa.go.jp/policy/economy/g20_summit/osaka19/pdf/documents/en/annex_08.pdf; *OECD AI Principles Overview*, OECD, https://oecd.ai/en/ai-principles (last visited Aug. 26, 2025); U.N. Educational, Scientific & Cultural Org. (UNESCO) Recommendation on the Ethics of Artificial Intelligence, U.N. Doc. SHS/BIO/REC-AIETHICS/2021(Nov. 24, 2021); *Universal Guidelines for Artificial Intelligence*, Ctr. for AI and Digital Pol., https://www.caidp.org/universal-guidelines-for-ai (last visited Mar. 3, 2025).

126. Universal Declaration of Human Rights, art. 12, G.A. Res. 217 (III) A, U.N. Doc. A/810 (Dec. 10, 1948); International Covenant on Civil and Political Rights, art. 17, Dec. 16, 1966, 999 U.N.T.S. 171.

127. *See, e.g.*, Committee on the Rights of the Child, *General Comment No. 25*, U.N. Doc. CRC/C/GC/25 (2021); Committee on the Elimination of All Forms of Discrimination Against Women, *General Recommendation No. 39*, U.N. Doc. CEDAW/C/GC/39 (2022).

128. Asia-Pacific Economic Cooperation (APEC), Privacy Framework (2015); Asia-Pacific Economic Cooperation (APEC), Cross-Border Privacy Rules (CBPR) System (2019).

129. African Charter on Human and Peoples' Rights, June 27, 1981, 1520 U.N.T.S. 217; African Union, Data Policy Framework (2022); African Union Convention on Cyber Security and Personal Data Protection (Malabo Convention), June 27, 2014, EX.CL/846(XXV), AU LC12490; African Union, Digital Transformation Strategy (2020–2030), https://au.int/sites/default/files/documents/38507-doc-DTS_for_Africa_2020-2030_English.pdf.

and ensures continental ownership with Africa as a producer and not only a consumer in the global economy."[130]

Further, in addition to the ECOWAS data privacy measure noted above, instruments of the African Regional Economic Communities cover digital issues, including the East African Community Legal Framework for Cyberlaws (2008) and the Southern African Development Community Model Law on Data Protection,[131] the latter of which is not a binding framework but has influenced domestic law.[132]

A growing number of multilateral and regional instruments also focus on AI, including the OECD AI Principles referenced above, with important implications for economic and social development. In 2021, UNESCO adopted recommendations on the ethics of artificial intelligence, which include impact assessments to identify and assess benefits, concerns, and risks of AI systems; inclusive, transparent, multidisciplinary, multilateral, and multi-stakeholder governance mechanisms; and national legislation aligned with human rights law obligations.[133] The African Commission on Human and Peoples' Rights (ACPHR) also recently adopted a resolution calling for a study on human rights, AI, and other new and emerging technologies in Africa.[134] The 2024 AU Continental Artificial Intelligence Strategy references human rights and a "people-centric, development-oriented, and inclusive approach" to AI.[135] Although the above-referenced instruments all fall within soft law, the first hard law instrument in AI, the "Council of Europe's Framework Convention on Artificial Intelligence, Human Rights, Democracy, and the Rule of Law, 2024" was adopted on May 17,

130. African Union, The Digital Transformation Strategy for Africa (2020–2030), at 2, Feb. 9, 2020, LEX-FAOC222458.

131. *See generally* EAST AFRICAN COMMUNITY, LEGAL FRAMEWORK FOR CYBERLAWS (2008); *See generally* SOUTHERN AFRICAN DEVELOPMENT COMMUNITY, MODEL LAW ON DATA PROTECTION (2013).

132. AFRICAN ECONOMIC RESEARCH CONSORTIUM, DIGITALIZATION IN AFRICA: THE NEW FRONTIER OF DEVELOPMENT 3 (2022); *Press Statement: Paradigm Initiative Calls for Data Protection in the SADC Region*, PARADIGM INITIATIVE, https://paradigmhq.org/press-statement-paradigm-initiative-calls-for-data-protection-in-the-sadc-region/ (last visited Mar. 3, 2025).

133. U.N. Educational, Scientific & Cultural Org. (UNESCO) Recommendation on the Ethics of Artificial Intelligence, at 27, U.N. Doc. SHS/BIO/REC-AIETHICS/2021 (Nov. 24, 2021).

134. African Commission on Human and Peoples' Rights, *Resolution on the Need to Undertake a Study on Human and Peoples' Rights and Artificial Intelligence (AI), Robotics, and Other New and Emerging Technologies in Africa*, ACHPR/Res. 473 (EXT.OS/XXXI) 2021.

135. *See generally* AFRICAN UNION CONTINENTAL ARTIFICIAL INTELLIGENCE STRATEGY (July 2024). *See also,* Frederick Ogenga & Aaron Stanley, *Regulating Artificial Intelligence in Africa: Strategies and Insights from Kenya, Ghana, and the African Union,* WOODROW WILSON CTR. (Sept. 18, 2024), https://www.wilsoncenter.org/blog-post/regulating-artificial-intelligence-africa-strategies-and-insights-kenya-ghana-and-african.

2024.[136] All of these instruments will likely shape future rules at the national, regional, and international levels. However, it remains to be seen whether they will address gaps noted in Part II, such as the lack of disciplines on data mining/scraping and privacy.

D. *Governance of the Digital Economy in Regional Trade Agreements*

Given the increase in RTA coverage of digital and development issues, it is likely that the inclusion of issues related to economic and social development in the digital economy will expand. Digital provisions have developed in a heterogeneous manner, with differing scopes of coverage and approaches apparent across instruments.[137] RTAs with digital trade provisions often focus on issues of data privacy and protection,[138] data localization, cross-border data transfer, and electronic transactions and payments. Some RTAs also incorporate provisions on consumer protection,[139] cybersecurity, AI,[140] and other issues. These provisions

136. Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law, C.E.T.S. 225, opened for signature Sept. 5, 2024 [hereinafter AI Framework Convention]. *See* Cheng-chi (Kirin) Chang, *The First Global AI Treaty: Analyzing the Framework Convention on AI and the EU AI Act,* 86 UNIV. ILL. L. REV. ONLINE (Dec. 20, 2024), https://illinoislawreview.org/online/the-first-global-ai-treaty/. *See also* Greenleaf, *supra* note 92, at 6.

137. *See* Kuhlmann UN 2021, *supra* note 90. To assess commonality in provisions and extent of hard and soft commitments (legalization), *see* the Trade Agreement Provisions on Electronic Commerce and Data (TAPED) Dataset housed by the Universität Luzern, https://www.unilu.ch/en/faculties/faculty-of-law/professorships/burri-mira/research/taped/ (last visited Aug. 29, 2025). *See also* The UN Legal Trade Intelligence Negotiation Adviser (Legal TINA) developed by the United Nations Economic and Social Commission for Asia and the Pacific in collaboration with the Georgetown Law Center on Inclusive Trade and Development, https://legal.tina.trade (last visited Aug. 29, 2025).

138. For example, a higher standard of data protection may be provided for vulnerable stakeholders. Exceptions or differential treatment can also be included for micro, small, and medium-sized enterprises.

139. The United States-Mexico-Canada Agreement, *supra* note 99, for example, contains provisions on consumer protection in the digital space. European RTAs follow Europe's regulatory model, the General Data Protection Regulation (GDPR), which is arguably more consumer-focused, and includes a range of rights, including the right to be informed, right to access, right to rectification, right to erasure, right to objection to processing and marketing, and others.

140. For example, the DEPA, *supra* note 103, includes provisions on artificial intelligence, calling for transparent, fair, and explainable rules and a focus on human-centered values. The U.K.-Singapore and Australia-Singapore Digital Economy Agreements also include provisions on artificial intelligence. *See* U.K.-Singapore Digital Economy Agreement, *supra* note 104; Australia-Singapore Digital Economy Agreement, *supra* note 105. signed 6 August 2020, [2020] ATS 13 (entered into force 8 December 2020).

sometimes include references to human rights and development, but this is not yet the norm.

One recent trend in RTAs that connects digital rules with development is the incorporation of digital inclusion provisions in digital trade chapters or instruments. These take different forms, ranging from FTAs that cover a range of issues to digital economy agreements (DEAs), which are more specialized trade instruments focused on digital provisions only.[141] Digital inclusion provisions were first incorporated in the 2021 Digital Economy Partnership Agreement (DEPA) between Singapore, Chile, New Zealand.[142] Several other trade agreements entered into by the DEPA parties incorporate similar provisions. These include the Chile-Paraguay FTA,[143] New Zealand-UK FTA,[144] and the UK-Singapore and Australia-Singapore DEAs.[145] The India-United Arab Emirates (UAE) Comprehensive Economic Partnership Agreement (CEPA),[146] as well as the Partnership Agreement between the EU and the Organisation of African, Caribbean, and Pacific States (OACPS),[147] also include digital provisions, as does the recent Digital Trade Protocol to the AfCFTA Agreement, which is one of the most comprehensive in terms of development and digital provisions.[148] In 2025, the recent Second Protocol amending the Agreement Establishing the Association of

141. While this sector-specific trade agreement model is part of an emerging trend, questions may arise with regard to consistency under Article XXIV of the General Agreement on Trade and Tariffs, which calls for coverage of "substantially all the trade" in order for a trade agreement to comply with WTO rules.

142. DEPA, *supra* note 103. Korea joined the DEPA in 2024. Six other countries have applied to join the DEPA: China, Canada, Costa Rica, Peru, the UAE, and El Salvador.

143. Chile-Paraguay Free Trade Agreement, signed Dec. 1, 2021, entered into force Feb. 15, 2024.

144. Free Trade Agreement Between New Zealand and the United Kingdom of Great Britian and Northern Ireland [2022] NZTS 03 (signed 28 February 2022, entered into force 31 May 2023) [hereinafter New Zealand-UK FTA].

145. *See* U.K.-Singapore Digital Economy Agreement (DEA), 22 Feb. 2022, U.K.-Singapore, TS No. 22 (2023) (CP 634). These differ in form from traditional RTAs and are focused exclusively on digital economy issues.

146. Comprehensive Economic Partnership Agreement Between the Government of the Republic of India and the Government of the United Arab Emirates, signed Feb 18, 2022, entered into force May 1, 2022.

147. Partnership Agreement between the European Union and its Member States, on the one part, and the Members of the Organisation of African, Caribbean, and Pacific States, on the other part, Dec. 28, 2023, O.J. (L, 2023/2862) [hereinafter EU-OACPS Partnership Agreement].

148. The Digital Trade Protocol to the AfCFTA is also a somewhat different model, since it adds a separate legal instrument focused on digital economy issues to the foundational AfCFTA Agreement. Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, Feb. 18, 2024.

Southeast Asian Nations (ASEAN)-Australia-New Zealand Free Trade Area (AANZFTA) entered into force, which amended the foundational AANZFTA Agreement to include provisions on cooperation for digital inclusion and engagement of MSMEs in e-commerce.[149]

At a baseline, digital inclusion provisions acknowledge rights of vulnerable stakeholders, including Indigenous communities, women, rural populations, and other communities and stakeholders, who may face challenges in the digital economy. Digital inclusion provisions can also address issues critical to MSMEs, although MSME-related digital provisions often appear in other parts of an agreement.[150] Digital inclusion provisions tend to merely recognize the importance of the needs of vulnerable stakeholders and communities (women, persons with disabilities, Indigenous communities, small businesses, and others) without creating actionable rights. Some provisions focus on addressing the digital divide, while other agreements integrate financial inclusion and S&DT with respect to digital rules, reflecting articulated priorities of developing economies. In some cases, these provisions track with domestic laws and policies discussed in Part II, highlighting the circular nature between domestic and regional law. However, even the more expansive digital provisions leave out details addressed in domestic instruments, and none address sustainable development to the extent of other RTA chapters, such as those on environment and labor, meaning that they lack precision and enforceability.[151] Digital inclusion provisions also fail to include details that other social provisions in RTAs, such as those on women, are beginning to reflect, although they also do not fully take relevant contextual factors into account.[152] Again, this makes the case for deeper study of domestic rules and policies.

E. *Comparative Assessment of "Digital Inclusion" Provisions in RTAs*

The DEPA was the first agreement to "acknowledge the importance of digital inclusion."[153] Its Module 11 on Digital Inclusion has the goal of ensuring that all stakeholders can "benefit from the digital

149. Second Protocol to Amend the Agreement Establishing the ASEAN-Australia-New Zealand Free Trade Area, Chapter 10 (Electronic Commerce), Art. 19 (2) and Art. 4 (1) (2023), https://aanzfta.asean.org/uploads/2024/08/Consolidated-Main-Text-of-Second-Protocol-to-Amend-AANZFTA-18-august-2023.pdf (last visited Aug. 29, 2025).

150. *See* Kuhlmann UN 2021, *supra* note 90; Kuhlmann UN 2023, *supra* note 90 at 10.

151. Kuhlmann 2021, *supra* note 22, at 59-88.

152. *See* Katrin Kuhlmann, *Gender Approaches in Regional Trade Agreements and a Possible Gender Protocol Under the African Continental Free Trade Area: A Comparative Assessment*, *in* TRADE POLICY AND GENDER EQUALITY (2023) at 228 (Amrita Bahri, Jan Yves Remy, & Dorotea Lopez, eds.).

153. DEPA, *supra* note 103, Module 11.

economy" and "recognize[s] the importance of expanding and facilitating digital economy opportunities by removing barriers" and "enhancing cultural and people-to-people links including between Indigenous Peoples, and improving access for women, rural populations and low socio-economic groups."[154] The domestic legal practices of the DEPA parties are reflected in these provisions, such as New Zealand's focus on Indigenous rights. The DEPA also highlights the importance of cooperation among the parties on digital inclusion, again with an emphasis on vulnerable and marginalized groups.[155] In addition, it recognizes the need for capacity building focused on SMEs and promotes responsible AI governance frameworks.[156]

Although these provisions are largely soft and aspirational, they established an important precedent and have formed the basis for other RTAs, which have built upon the DEPA model.[157] Within a relatively short period of time (since 2021), these provisions have evolved fairly significantly. One of the agreements that followed the DEPA, the 2021 Chile-Paraguay FTA, largely followed the DEPA model and contained similar, but slightly different, language on digital inclusion.[158] Since 2021, other instruments have expanded upon the DEPA model.

The 2022 UK-Singapore DEA contains a digital inclusion article (Art. 8.61-P) that goes beyond the language in the DEPA.[159] It covers digital inclusion and participation as well as addresses the digital divide. It is particularly notable in its emphasis on the promotion of decent work conditions in the digital economy, integrating an innovative human rights and contextual element that is absent in other agreements. The UK-Singapore DEA also highlights the importance of focusing on "women and groups and individuals that may disproportionately face barriers to digital trade."[160] It further emphasizes the importance of cooperation on digital inclusion, linking the approach to other social issues, such as gender and labor provisions, and notes the "role for digital trade in promoting economic development and poverty reduction."[161] These innovations likely reflect Singapore's domestic

154. *Id.* module 11, cl. 1, 2.
155. *Id.* pmbl, art. 11.1, art. 15.3
156. *Id.* module 10, art. 8.2.
157. *See* Burri & Kugler, *supra* note 5.
158. *Id.*
159. *Id.*
160. UK-Singapore DEA, *supra* note 145, art. 8.61-P.
161. *Id.*

approaches in digital economic development and digital regulation.[162] However, in contrast, another agreement to which Singapore is a party, the 2023 MERCOSUR-Singapore FTA, contains only minimal language on digital inclusion, which is incorporated into a broader clause (Art. 12.9) on cooperation.[163]

The 2022 India-UAE CEPA takes a more moderate approach to digital development and does not contain a digital inclusion article like other agreements. However, it does incorporate relevant provisions on Open Data (Art 9.12) and Digital Government (Art 9.13).[164]

Article 9.13 of the India-UAE CEPA states:

> [The] Parties shall endeavour to develop and implement programs to digitally transform their respective government operations and services, which may include:
>
> (a) adopting open and inclusive government processes focusing on accessibility, transparency, and accountability in a manner that promotes digital inclusion and overcomes digital divides . . .
>
> (c) shaping government processes, services and policies with digital inclusivity in mind.[165]

The 2023 New Zealand-UK FTA contains digital inclusion language similar to Article 11(1) of the DEPA and Article 8.61-P of the UK-Singapore DEA, with some notable differences. In particular, the New Zealand-UK FTA incorporates aspects of New Zealand's approach on integrating the needs of Indigenous communities, as discussed above. The New Zealand-UK FTA's digital inclusion article includes language focused on SMEs and the digital divide, emphasizing the importance of addressing the needs of the Māori people.[166] Consistent with other RTAs, it focuses on coordination and consultation, here with the Māori and other vulnerable communities, including women, persons with

162. On decent work, Singapore has an ongoing collaboration with the International Labour Organization. *See* International Labour Organization, "ILO and Singapore Agree on Continuation of Efforts to Support Decent Work Across the ASEAN Region" (June 2024), https://www.ilo.org/resource/news/ilo-and-singapore-agree-continuation-efforts-support-decent-work-across (last visited Sept. 28, 2025).

163. Free Trade Agreement between the Southern Common Market (MERCOSUR) and the Republic of Singapore, December 7, 2023.

164. Burri & Kugler, *supra* note 5, at 17, Comprehensive Economic Partnership Agreement Between the Government of the Republic of India and the Government of the United Arab Emirates (India-UAE CETA), signed Feb 18, 2022, entered into force May 1, 2022.

165. India-UAE CETA, *supra* note 146, art. 9.13.

166. New Zealand-UK FTA, *supra* note 144, art. 15.20.

disabilities, rural populations, and low socio-economic groups.[167] The agreement calls for development of "tailored approaches" to facilitating digital trade, which should be "developed in consultation with Māori, enterprises, individuals, and other groups that disproportionately face such barriers,"[168] emphasizing engagement in the rulemaking process.[169] It also incorporates provisions on cooperation to address the digital divide and promote business development services for SMEs, integrating small businesses.[170] However, in contrast to the UK-Singapore FTA, while the New Zealand-UK FTA includes decent work provisions among its labor provisions, it does not reference decent work in a digital context.[171] Sustainable development is also generally referenced in the preamble and the chapter on Trade and Development (Chapter 27), as well as in more specific contexts throughout the New Zealand-UK FTA,[172] but it is not explicitly integrated in the agreement's digital provisions. A softer approach to digital inclusion appears in the recently-concluded Second Protocol to the AANZFTA Agreement, includes a provision on digital inclusion and for "all groups" and emphasizes cooperation to help MSMEs "overcome obstacles in the use of electronic commerce."[173]

The Partnership Agreement between the EU and Members of the OACPS,[174] also known as the Post-Cotonou Agreement or the Samoa Agreement, also emphasizes the needs of MSMEs, women, and youth. While it uses terminology that differs from other agreements, it highlights digital infrastructure and cooperation to address the digital divide, noting the importance of improving access to digital technologies, including information and communication technology (ICT) adapted to local circumstances.[175] Notably, the Partnership Agreement's provisions also integrate the "use of affordable and renewable energy sources and the development and redeployment of low-cost wireless networks" in the context of ICT, as well as complementarity in ICT systems.[176] The agreement contains cooperation provisions on data privacy and protection, highlighting the importance of a regulatory framework "to promote the

167. *Id.* art. 15.17, 15.20.
168. *Id.* art. 15.20(1).
169. *See* Kuhlmann 2021, *supra* note 22 at 6.
170. New Zealand-UK FTA, *supra* note 144, art. 15.20.
171. *Id.* art. 23.5, 23.7
172. *Id.* pmbl, art. 27.1(1).
173. AANZFTA, *supra* note 149, Chapter 10 Art. 19 (2) (b) and Art. 4 (1).
174. EU-OACPS Partnership Agreement, *supra* note 147.
175. *Id.* art. 48(1).
176. *Id.*

production, sale and delivery of digital products and services."[177] Sustainable development is interwoven throughout the agreement's provisions, including in the preamble, which recognizes the link between digital tools and sustainable development,[178] and Article 14 of Title IV on Industrialization, which draws a connection between digital transformation and "climate-smart and environmentally-friendly practices."[179] This connection is one of the more explicit links between sustainable development and the digital economy across RTAs, and it could be a precedent for addressing these issues more concretely in future agreements.

The recently concluded AfCFTA Digital Trade Protocol contains relatively expansive provisions on development in a digital context,[180] going beyond other agreement models. While the link with sustainability is still largely absent, the AfCFTA Digital Trade Protocol explicitly connects digital trade and sustainable and inclusive economic growth in its preamble, which also references digital inclusion.[181] This emphasis on sustainable and inclusive growth in the digital economy is not typical in other digital trade instruments.

The AfCFTA notably contains provisions on digital infrastructure and last-mile delivery (Art. 11), perhaps signaling a way of addressing digital divide issues in a concrete way, as well as an article on Personal Data Protection (Art. 21), which requires signatories to uphold a legal framework that ensures the protection and safeguarding of individuals' personal data.[182] Digital inclusion is a prominent feature of the agreement, with Part IV of the agreement devoted to digital inclusion. Part VI covers Digital Inclusion (Art. 30), Micro, Small, and Medium-Sized Enterprises (Art. 31); Digital Innovation and Entrepreneurship (Art. 32); and Digital Skills Development (Art. 33).[183]

Article 30 on Digital Inclusion is significantly more detailed than digital inclusion provisions in earlier trade agreements:

> State Parties shall promote and facilitate the inclusion and participation of women, youth, indigenous peoples, rural and local

177. EU-OACPS Partnership Agreement, *supra* note 147, art. 48 (4).

178. *Id.* at 15.

179. *Id.* ch. 1, art. 14(3).

180. AfCFTA Digital Trade Protocol, *supra* note 148.

181. *Id.* The Preamble to the AfCFTA Digital Trade Protocol states: "DETERMINED to ensure the inclusion of all peoples and businesses, including micro, small and medium-sized enterprises, rural and local communities, indigenous peoples, women, youth, persons with disabilities and other underrepresented groups in digital trade."

182. AfCFTA Digital Trade Protocol, *supra* note 148, art. 21.

183. *Id.*, arts. 30-33.

> communities, persons with disabilities, and other underrepresented groups in digital trade through, among others:
>
> (a) promoting access to information and communications technologies;
>
> (b) improving cross-border connectivity and interoperability;
>
> (c) providing accessible, affordable, safe, and reliable internet;
>
> (d) sharing experiences and best practices, including the exchange of experts, with respect to digital inclusion;
>
> (e) identifying and addressing barriers to accessing digital trade opportunities;
>
> (f) sharing methods and procedures for developing datasets and conducting analysis in relation to their participation in digital trade;
>
> (g) participating in regional and multilateral fora to promote digital inclusion; and
>
> (h) improving digital skills, digital literacy, and access to online business tools.[184]

Article 30 begins with participation as an element of inclusion (with a fairly lengthy list of stakeholders), going on to integrate aspects such as ICT; cross-border connectivity; and "accessible, affordable, safe, and reliable internet" that relate to addressing the digital divide and building digital infrastructure.[185] It also incorporates digital skills development and cooperation, including at the regional and multilateral levels.[186]

Article 31(g) of the AfCFTA Digital Trade Protocol on MSMEs encourages the granting of credit, loans, or grants on preferential terms for financing MSMEs in digital trade, linking access to credit with digital inclusion as some countries have done at the national level.[187] Article 32 on Digital Innovation and Entrepreneurship also covers access to finance.[188] As the final provision of Part IV, Article 33 on Digital Skills Development incorporates a provision (Art. 33(c)) on encouraging diversity and inclusivity in digital skills development programs and policies.[189]

The AfCFTA Digital Trade Protocol contains additional provisions that are missing from other digital trade rules. As one example,

184. *Id.* pt. VI, art. 30.
185. *Id.*
186. *Id.*
187. *Id.* pt. VI, art. 31.
188. *Id.* pt. VI, art. 32.
189. *Id.* pt. VI, art. 33.

Article 42 includes S&DT provisions, recognizing the different levels of development among the AfCFTA state parties and highlighting the importance of technical assistance and capacity building.[190] The incorporation of S&DT provisions is a notable good practice that is absent from other digital trade instruments and could help bridge the digital divide.[191]

Article 4 of the AfCFTA Digital Trade Protocol also affirms the state parties' right to regulate, which notes sustainable development among the regulatory objectives, even though it is not clear how this provision will be interpreted and enforced.[192] This follows a broader trend in AfCFTA legal instruments to strengthen the right to regulate. The provisions on data localization focus on the "development of local digital infrastructure,"[193] which is a departure from other data localization provisions and reflects African national and continental priorities. The AfCFTA Digital Trade Protocol includes multiple cooperation provisions, not just in Part IV but also more generally in Article 43, which again references digital inclusion.[194] The AfCFTA Digital Trade Protocol's provisions also reference the ethical use of emerging and advanced technologies,[195] which could perhaps pave the way for deeper protections on AI in the future.

AfCFTA State Parties adopted the AfCFTA Digital Trade Protocol in 2024,[196] and its eight annexes were adopted in February 2025.[197] While the annexes do not include digital inclusion, underscoring the soft nature of these provisions, they would cover other areas important to sustainable economic and social development.

Table One below summarizes development-focused RTA provisions, principles, and features related to digital trade.

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190. *Id.* art. 42.

191. *See* Agarwal & Mishra, *supra* note 4, at 286.

192. *See* Simon Lester, *The AfCFTA Digital Trade Protocol*, INT'L ECON. L. AND POLICY BLOG (Feb. 22, 2024), https://ielp.worldtradelaw.net/2024/02/afcfta-digital-trade-protocol.html.

193. AfCFTA Digital Trade Protocol, *supra* note 148.

194. *Id.* art. 43.

195. *Id.* art. 34.

196. *See* Kholofelo Kugler, *AfCFTA's Digital Trade Protocol: What You Need to Know*, INT'L INST. FOR SUSTAINABLE DEV. (Oct. 30, 2024), https://www.iisd.org/articles/policy-analysis/afcfta-digital-protocol.

197. @AfCFTA, X (Apr. 21, 2025, 3:40 PM), https://x.com/AfCFTA/status/1891226228679483792 ("Today in Addis Ababa, the @_AfricanUnion Heads of State and Government adopted 8 annexes to the AfCFTA protocol on digital trade,"); *AU Endorses Nigeria as AfCFTA Digital Trade Champion*, STATE HOUSE NIGERIA (Feb. 18, 2025), https://statehouse.gov.ng/news/au-endorses-nigeria-as-afcfta-digital-trade-champion/.

TABLE ONE: DEVELOPMENT-FOCUSED DIGITAL PROVISIONS IN RTAs[198]

RTA	Key Areas Covered	Notable Features
DEPA (2021)	Digital Inclusion; SME Capacity Building; AI Accountability	DEPA's provisions are largely broad and aspirational, but the agreement sets an important precedent that others have followed.
Chile-Paraguay FTA (2021)	Digital Inclusion	Largely follows DEPA model, highlighting diffusion effect.
UK-Singapore DEA (2022)	Digital Inclusion; Addressing Digital Divide; Decent Work in the Digital Economy; Cooperation	Standalone digital inclusion article that goes beyond the DEPA; innovation in the form of notable inclusion of decent work in digital context.
India-UAE CEPA (2022)	No separate provision or article on digital inclusion; digital inclusion and addressing digital divide incorporated into Digital Government provision	Digital inclusion and digital divide addressed under digital government provision, which is a narrower approach.
New Zealand-UK FTA (2023)	Digital Inclusion; Cooperation; Measures to Address Digital Divide; Role of SMEs	Relatively more expansive digital inclusion provisions, with particular focus on Māori, showcasing an innovation in incorporating micro interventions into RTAs. References to sustainable development appear throughout agreement but not in digital context.

198. Katrin Kuhlmann, *Inclusive and Sustainable Development in Regulation of the Digital Economy: A Comparative and Contextual Analysis,* in CAMBRIDGE HANDBOOK OF DIGITAL TRADE LAW (Cambridge University Press, Mira Burri and Anupam Chander, eds., forthcoming).

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RTA	Key Areas Covered	Notable Features
EU-OACPS Partnership Agreement (2024)	Digital Infrastructure; Cooperation to Address the Digital Divide; Improved Access to Digital Technologies and ICT; Digital Entrepreneurship; Data Privacy; Access to Finance	Digital provisions incorporate areas relevant to digital inclusion (addressing digital divide, digital entrepreneurship, access to finance) but do not explicitly refer to digital inclusion; broad link between sustainability and digital infrastructure in industrialization provisions.
AfCFTA Digital Trade Protocol (2024)	Digital Inclusion (Part IV); Digital Divide, Access to Finance; Cooperation; MSME Skill Development; Special & Differential Treatment; Right to Regulate	Most expansive digital inclusion provisions in an RTA to date (entire section of agreement); also incorporates S&DT in digital context, which is a first for an RTA. Despite these innovations, the provisions are largely aspirational with no additional instruments (annexes).
AANZFTA (entered into force 2025)	Cooperation on Helping MSMEs Overcome Obstacles to E-Commerce	Relatively less expansive digital inclusion provisions (compared with the New Zealand-EU FTA); however, the AANZFTA Second Protocol notably expanded upon the original AANZFTA to incorporate digital inclusion and cooperation focused on engaging MSMEs in e-commerce.

In addition to the RTA provisions summarized above, other RTA provisions relate to sustainable economic and social development, such as Article 1801 in the Canada-Colombia RTA on recognizing the role of women in digital trade[199] and commitments in a number of legal instruments on maintaining the Moratorium on Customs Duties on Electronic Transmissions.

Despite the innovations summarized above, it is important to keep in mind that critical gaps persist. For example, trade agreements do not yet address data sharing, algorithmic decision making, censorship, and disinformation, as well as issues of sustainability in the digital economy.[200] These areas are also not comprehensively addressed under domestic law.

Relatedly, few RTAs explicitly address ethical use of AI, although broad provisions in this area are beginning to appear. For example, the DEPA includes provisions that specifically refer to the importance of developing ethical governance frameworks for the trusted, safe, and responsible use of AI technologies, as do the Australia-Singapore DEA and UK-Singapore DEA, which build upon the DEPA.[201] The Australia-Singapore DEA refers to the adoption "of frameworks that support the trusted, safe, and responsible use of AI technologies."[202] The AfCFTA Digital Trade Protocol also includes an objective to "encourage trusted, safe, ethical, and responsible adoption and regulation of the use of emerging and advanced technologies to support and promote digital trade."[203] These provisions are a start, but they are broad and largely unenforceable, highlighting an area for future focus.

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199. *See* Kuhlmann UN 2023, *supra* note 90 at 26.

200. Burri, *supra* note 1, at 114-15. *See also,* Susan A. Aaronson, *The Difficult Past and Troubled Future of Digital Protectionism*, *in* ADDRESSING IMPEDIMENTS TO DIGITAL TRADE 141, 148 (Ingo Borchert & L. Alan Winters eds., 2021). *See also,* Svetlana Yakovleva & Joris van Hoboken, *The Algorithmic Learning Deficit: Artificial Intelligence, Data Protection and Trade*, *in* BIG DATA AND GLOBAL TRADE LAW (Mira Burri, ed.) 212, 213 (2021).

201. *See Australia-Singapore Digital Economy Agreement (DEA)* signed 6 August 2020, [2020] ATS 13(entered into force 8 December 2020) art. 31. Digital Economy Partnership Agreement (DEPA), art. 8.2 [2020] NZTS 2 (signed 11 June 2020, entered into force 7 January 2021); UK-Singapore Digital Economy Agreement (DEA), art. 8.61-R, 22 Feb. 2022, U.K.-Singapore, TS No. 22 (2023) (CP 634).

202. *See Australia-Singapore Digital Economy Agreement (DEA)* signed 6 August 2020, [2020] ATS 13(entered into force 8 December 2020) art. 31.

203. Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade, art. 2, Feb. 18, 2024.

Without stronger legal protections at the domestic and international levels, these gaps could pose considerable risks, potentially undermining the benefits of emerging technology.[204] Compounding these challenges, those who are most affected do not have active agency in legal design or negotiations.[205]

Finally, further legal innovation in the digital space will not take place only at the micro level (or macro) level. Micro *and* macro approaches, and everything in between, will be needed to strengthen digital rules and promote economic and social development through digital trade. Anupam Chander writes of the importance of "glocalization" in a legal context, or maintaining local, customized legal approaches to governing technology "within the bounds of international law."[206] The micro international law approach discussed and applied in a digital regulatory context in this Article proposes a way of studying and cataloguing legal approaches at both the micro and macro levels and understanding the circular relationship between them as legal instruments evolve.

While digital inclusion and economic development will need to be addressed through a number of legal instruments, trade rules play an important role. For example, the WTO case *Brazil-Certain Measures Concerning Taxation and Charges* emphasizes a link between trade measures and digital and social inclusion.[207] In *Brazil-Certain Measures*, the WTO Panel found the measures aimed at bridging the digital divide and promoting social inclusion were designed to protect public morals within the meaning of Article XX(a) of the General Agreement on Tariffs and Trade (GATT).[208] While the Dispute Settlement Body found that the taxes did not meet the requirements of the Article XX chapeau—the Dispute Settlement Body has only found that the chapeau's requirements have been met in three cases—it still held that a WTO-consistent, less trade-restrictive program could target the digital divide.[209] Additionally, the Panel Report noted that targeting social

204. *See, e.g.*, Effoduh et al., *supra* note 19, at e34-4. *See also* GLOBAL PARTNERSHIP ON AI, TOWARDS REAL DIVERSITY AND GENDER EQUALITY IN ARTIFICIAL INTELLIGENCE: ADVANCEMENT REPORT 4 (NOVEMBER 2023).

205. GLOBAL PARTNERSHIP ON AI, *supra* note 204. *See generally*, Aman Arora et al., *Risk and the Future of AI: Algorithmic Bias, Data Colonialism, and Marginalization*, 33 INFO. & ORG., Sept. 2023.

206. ANUPAM CHANDER, THE ELECTRONIC SILK ROAD 169 (2013).

207. Panel Report, *Brazil – Certain Measures Concerning Taxation and Charges*, WT/DS472/R, ¶ 7.592 (adopted Jan. 11, 2019).

208. *Id.* ¶ 7.570.

209. Appellate Body Report, *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R (adopted Apr. 5, 2001); Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (adopted Nov. 21, 2001).

inclusion and creating greater access to digital infrastructure is "internationally recognized as an important policy."[210] The proliferation of rights-based and social development measures in RTAs further underscores the connection between trade and digital measures.

IV. Conclusion

The growing incorporation of development-focused digital provisions in domestic law and trade agreements represents a crucial step toward fostering a more rights-based and sustainable digital economy. Comparative assessment shows that innovative approaches are especially appearing at the micro and meso (regional) levels of digital regulation, which are designed to address important social and economic development considerations. However, significant gaps remain.

At the domestic, or micro level, legal innovations provide valuable lessons for international digital governance. A considerable number of jurisdictions have approached data privacy in the context of human rights, an innovation that has diffused from the micro level and could more fully extend into trade agreements and multilateral instruments in the future. New, rights-based approaches are also starting to emerge on AI, although these will require much greater focus. Domestic examples, such as New Zealand, Ghana, and Estonia, demonstrate how bottom-up regulatory approaches can innovatively address the needs of communities and small enterprises. Some of these micro-level legal advancements have already influenced the design of trade agreements and other instruments. Overall, however, domestic and regional protections tend to overlook important legal and procedural dimensions. Moving forward, international frameworks should better integrate tailored, granular interventions and practices to create a more comprehensive and responsive digital trade ecosystem.

At a more macro or meso level, regional agreements such as the DEPA, the New Zealand-UK FTA, and the AfCFTA Digital Trade Protocol have introduced promising provisions on sustainable and inclusive digital regulation. However, these provisions remain largely aspirational and lack enforceability, particularly in comparison to other sustainable development provisions in trade agreements, such as labor and environmental standards. Although these collaborative approaches are a good start, more robust commitments, particularly regarding digital infrastructure, financial inclusion, and governance of AI and other emerging technologies, could help ensure that digital trade benefits all

210. Panel Report, *Brazil – Certain Measures Concerning Taxation and Charges*, WT/DS472/R, ¶ 7.592 (adopted Jan. 11, 2019).

stakeholders around the world. While questions may remain about the extent to which trade agreements are the appropriate instrument to address concerns with digital regulation and the regulation of AI, trade rules play an extremely important role in a comprehensive and responsive system of rules governing the digital ecosystem.

Despite the emergence of promising legal models, quite a few challenges persist. One is the emergence of AI and concerns with its governance, particularly relating to data privacy, human rights, and the ethical use of AI. Future rules and agreements should more deeply explore how digital trade rules could better incorporate human rights protections, ensure regulatory flexibility for developing economies, and promote stakeholder participation in digital rulemaking. Further, digital sustainability policies focused on the environmental impact of the digital economy remain an underdeveloped aspect of trade law requiring greater attention.

Development in the digital economy will ultimately require a blended approach that combines micro-level legal insights and macro-level agreements and frameworks. Empirical research, particularly studies on the efficacy of domestic and sub-national legal approaches and the influence of dominant models and their impact on customized, local approaches to rulemaking should guide the development of future digital trade rules. Addressing development considerations in the digital economy will not only depend upon regulatory innovation but also a commitment to translating broad policy aspirations into actionable, enforceable rights and commitments at all levels of governance.