



**WORKING PAPER 1**

# Unskewing the Data Value Chain

A Policy Research Agenda for  
Equitable Platform Economies

IT for Change  
2020

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## Introduction

This working paper for the project, *Unskewing the Data Value Chain*, scopes relevant policy issues and questions pertaining to systemic inequities in the global data value chains and frames a multi-domain research agenda for inquiry. The paper also informs and steers the project's recently forged global research network that will contribute to Southern-led as well as Southern-focused scholarship on the issue in the coming months.

The first part of this paper discusses the imminent transformations within the economy; the rise of data value chains and the concomitant increase in inequality, emerging governance gaps, and ramifications for the Global South. In the second section, the paper delves into the specific policy challenges to data value chain regulation faced by developing countries. The third and final section attempts a critical stocktaking of current policy trends and presents a transformative research agenda that can help contribute to equitable data value chains.

## Section 1 – The transformation to data-based value: Implications for global (in)equality

Data value chains – the digital economy business model in which products and services are generated through “multi-layered intelligence infrastructures” (Singh, 2020) – are emerging as a key driver of economic transformation.<sup>1</sup> The report of the UN Economists Network for the UN 75<sup>th</sup> anniversary (2020) has identified the “emergence of digital technologies in the fourth industrial revolution” as one of five megatrends that impact sustainable development. Observing that this trend is defined by “the near-universal applicability of digitization with transformative technological breakthroughs”, the report notes that it will have long term and irreversible social and economic structural shifts (p.13).

A visible shift to digitally-delivered services in areas such as healthcare, education and retail, and a move towards new modes of data-enabled value generation in core sectors such as agriculture and manufacturing is evident (UNCTAD, 2019). The World Investment Report (UNCTAD, 2020) has observed that the integration of robotics-enabled automation, enhanced supply chain digitalization and additive manufacturing will be central in shaping global production and value distribution in the years to come.

The recognition of these sea-changes in economic activity on account of data runs concurrent with a sobering reality – the gains of the digital economy continue to be highly unequal and skewed. In its analysis of the digital economy, UNCTAD (2019) has observed the tendency of economic value to become extremely concentrated at two ends of the value chain on account of “intangibles” (referring to data assets) – 1. upstream, with respect to R&D, data and innovation and 2. downstream, with respect to market data and intelligence, both of which are firmly in the grasp of very large technology corporations located in a small number of developed nations.

Meanwhile, in the mid-stream segment, the concurrent commodification of lower value added services and servicification of manufacturing show relatively flat value returns for nations and actors who occupy these rungs (UNCTAD, 2019). Digitally enhanced value chains thus end up entrenching the dominance of large tech companies who become critical infrastructure providers in various spaces, concentrate value in a few developed economies and render an ‘asset-light’

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<sup>1</sup> Including the base data layer, cloud computing layer, the intelligence layer, and the consumer-facing intelligence services layer.

international footprint that creates disproportionately lower gains for developing economies (UNCTAD, 2020).<sup>2</sup>

The Covid crisis has been a pivotal moment, reinforcing the consolidation of data value chains. Bleak WTO projections for merchandise trade and global GDP<sup>3</sup> show up against a strong growth trajectory for digital services and tech companies, with the pandemic not only giving a big push for digitalizing services in retail, health, education, telecommunications and media, but also paving the path for the digitization of traditional businesses (WTO, 2020).

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Today, Big Tech firms occupy the lead firm position in global data value chains.<sup>4</sup> Through vertical and horizontal integration based on data-driven strategies, they have grown in scale and 'stickiness'. For instance, from being a gaming company in 1999, to subsequently launching WeChat in 2012, Chinese tech giant, Tencent, has since built an intricate web of stakes through sectoral offerings in finance, social media, gaming, e-commerce and digital services, all networked into a super-platform that converges these data streams (Devanesan, 2020).

Acquisitions, mergers and investments constitute other strategies through which digital corporations have sought to consolidate their monopoly power. Trends in global capital flows underscore how while the digital economy as a sector has received huge volumes of global capital or Foreign Direct Investments, the number of tech companies have largely stayed stagnant in the past few years. This is owing to the twin strategies of Big Tech corporations buying up well-performing startups and established firms, and also engaging in vertical integration strategies as discussed above (UNCTAD, 2020). For instance, to grow its AI portfolio, in 2020, Apple made a series of small buyouts of AI startups cumulatively adding up to around \$1 billion (UNCTAD, 2020). Tencent's investment portfolio boasts of more than 800 companies around the world, with more than 70 of these firms being listed, and 160 unicorns (Chen, 2020). With the exponential growth of digital services in the pandemic, this trend has deepened. For example, in May 2020, tech multinationals announced 15 acquisitions against a monthly average in 2019 of fewer than nine (UNCTAD, 2020).

The concentration of value in the digital economy is also reflected in market share and control over IP in relation to the data value chain. Value in the digital economy is today cornered by a few superstar firms and, mainly, two countries – the US and China. According to UNIDO (2020), a majority of the developing world, and especially the African continent, is excluded, unable to optimize data value chains towards the pursuit of digital industrialization. Even middle income and developing countries with some niche in the digital sector have little or no domestic innovation and

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<sup>2</sup> The number of asset-light tech MNEs in the World Investment Report's annual ranking of the 100 largest MNEs increased from four in 2010 to 15 by the end of the decade.

<sup>3</sup> The WTO forecasts a 9.2 percent decline in the volume of world merchandise trade for 2020 and a 4.8 percent fall in global GDP.

<sup>4</sup> As of September 2020, seven of the world's ten largest companies by market capitalization were tech companies, including Apple, Microsoft, Amazon, Alphabet, Alibaba, Facebook and Tencent.

exporting activity, and have to import the capital goods associated with digital technologies (Arthur, 2020).

This effectively means a tiered digital economy is set to become the norm, where a few countries and their corporations capture the data value chain and corner a disproportionate share of innovation and economic gains, while other nations are relegated to low value segments, and yet others end up merely as compliant markets for the consumption of digital services.

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It is critical to also pay attention to how data value chains affect local economies and livelihoods. Rising capital-labor inequality owing to automation-led hollowing out of low-cost manufacturing hubs in developing economies today (UNCTAD, 2020) accompanies the informalization and atomization of low-skilled work through gig arrangements (Graham & Anwar, 2019; Gurumurthy et al., 2019) and the increased dataveillance of workers (Gurumurthy & Bharthur, 2019). We are also seeing the destruction of local livelihoods in various sectors. An apt illustration is the tourism sector, an industry that traditionally thrived on interpersonal and sustained engagement and trust-based local networks, which travel platforms have reduced to an algorithmified consumption experience, where local actors are nothing more than a last mile cog with no decisional autonomy (Bentley & Maharika, 2019; Gurumurthy & Bharthur, 2020).

The crisis of economic inequality is only worsened by a conspicuous governance gap. Powerful countries use global trade, taxation, IP and finance regimes not only to perpetuate the status quo, but have also exploited the regulatory grey areas around data regulation to advance their interests. The institutional frameworks of multilateralism have struggled to adapt to the challenges the global economy faces today. Participation on equal terms, accountability, and full membership in the process of designing rules are lacking in important multilateral policy spaces, where developing nations are being confronted with a push for digital policies that run detrimental to their interests. As observed by Richard Kozul-Wright (2020), Director of the Globalization and Development Strategies Division, UNCTAD, “from the perspective of the less powerful, this state of affairs is more a mercantilist jungle than the open plains on which friendship, respect, justice and cooperation can flourish.”

## **Section 2 – Governance challenges for developing countries in global data value chains**

Caught in the geo-politics of the global data economy, developing countries are having to hedge their bets in an unequal playing field that increasingly presents a Hobson’s choice. Not being part

of the digital economy is not an option. However, steep differentials of geo-economic power, combined with democratic deficits in global governance processes and institutional anachronism at home, leave most countries in the Global South with uphill challenges to building data capabilities.

Specifically, three vital dimensions in the global political economy of data value chains deserve attention in this regard:

- a. Data-capital nexus
- b. Digital trade and data flows
- c. Digital taxation

### **a. Data-capital nexus**

The datafication of global value chains promotes unbundling, offshoring and servicification. In these new-age production networks, transnational capital flows take the route of non-equity modes (mainly contracts with service providers) rather than traditional foreign direct investment in overseas markets. As the UNCTAD World Investment Report (2020) observes, cross-border foreign direct investment in growth-enhancing greenfield manufacturing projects is on the decline globally (currently, it is about 20-25 percent lower than in the previous decade). This is a matter of concern, as capital flows in non-equity modes cannot supplant direct investment in manufacturing that catalyzed “knowledge inflows, introduction of advanced management practices and increased R&D” in developing countries during the industrial era (Helpman, Melitz & Yeaple, 2004 as cited in Ciuriak, 2020).

Research hubs in developing countries funded by transnational digital corporations aid the extraction of knowledge capital from these markets, shifting IP assets generated by R&D abroad, thus undercutting local capacities (Bilt, 2017 as cited in Ciuriak, 2020). As the Chinese experience reveals, any attempt to invoke rules from the multilateral trade and IP systems for technology transfer obligations as part of market access conditionalities can result in costly trade disputes (Brum, 2019). The limited maneuvering room available to developing countries for enforcing technology transfer in digital sector investments is increasingly becoming foreclosed in US-led plurilateral agreements on e-commerce that explicitly prohibit mandatory source code disclosure requirements (Azapmo, 2019).

Acquisitions in the digital sector have also become the site of ugly turf wars between domestic capital and transnational digital giants, with the latter in a stronger position to leverage jurisdictional loopholes. Foreign investors and their domestic counterparts increasingly seek dispute resolution in pro-corporate, third party jurisdictions to avoid complicated legal proceedings in developing countries, a trend that is true for digital firms as well.<sup>5</sup>

Another notable development is in the increasing mergers of data-rich corporations. This has meant that data becomes a critical asset in propping up monopoly advantage. A red flag that current competition frameworks have failed to register for too long, merger law reform for remedies towards this issue – both behavioral (market conduct related obligations) and structural (divestment of assets) – are being explored only now, even in advanced economies such as the EU and the US. In developing countries, competition authorities continue to remain confined to an old world paradigm and are yet to update their merger scrutiny parameters to digital economy

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<sup>5</sup> Singapore, for instance, has become a favored destination for institutional dispute resolution between companies in South Asia and South-east Asia, and their foreign investors. The tech industry has also been increasingly shifting towards private arbitration over national judicial systems.

realities. When Grab – a Singaporean, multinational ride-hailing company – acquired the operations and assets of Uber Indonesia, data assets were not even on the evaluation rubric of Indonesian competition authorities. Similarly, the Competition Commission of India (CCI) has oftentimes failed to spot the unique horizontal and vertical market integration strategies that produce data monopolies in acquisitions and mergers.<sup>6</sup>

In the Covid context, competition authorities have also displayed a tendency to overlook antitrust consequences and permit mergers on grounds of “failing firm defence” (OECD, 2020a). For instance, in April 2020, UK’s Competition and Markets Authority (CMA) provisionally approved Amazon’s minority stake acquisition in Deliveroo, a UK-based online food delivery company. In this case, the regulator could be convinced that even as the deal could potentially be read as an anti-competitive move by Amazon, in the absence of any other investment options on the horizon, Deliveroo would exit the market unless the additional funding was made available.

## b. Digital trade and data flows

Owing to digitally-led globalization, cross-border data flows are making a bigger contribution to global GDP than trade in manufactured goods (DiPaula-Coyle, 2020). By 2018, digitally delivered services accounted for 50 percent of the global exports trade in services (UNCTAD, 2019). The pandemic has only heightened these trends. In the period January-May 2020, digital commerce in goods registered a 50 percent increase in the EU, 70 percent in Asia-Pacific and 120 percent in the US, when compared with the same period in 2019. There has been a spike in demand in certain sectors of digitally delivered services: media, e-payments, education and health (WTO, 2020).

The digitalization of goods and services value chains has produced highly uneven development outcomes in the global economy. As the UNIDO (Arthur, 2020) observes, “just ten countries<sup>7</sup> account for 90% of all global patents, and 70% of all exports, directly associated with the advanced digital production (ADP) technologies that are driving the Fourth Industrial Revolution.” Of these 10 leading digital economies, the US and China are particularly dominant, together accounting for 75 percent of all patents related to blockchain technologies, 50 percent of global spending on IoT and 75 percent of the cloud computing market (UNCTAD, 2019). Ninety percent of the market capitalization value of the world’s 70 largest digital platforms also accrues to them (UNCTAD, 2019). The rest of the world remains largely excluded from the gains of the digital restructuring of global trade and value chains.

Unfortunately, the policy space for developing countries to grow their domestic digital economy is constrained. At the WTO, there is currently no multilateral mandate for the negotiation of digital trade rules. However, the US and its allies have initiated a plurilateral process – the Joint Statement Initiative on E-commerce (JSI) – introducing the agenda of ‘e-commerce for development’, a Trojan horse to cobble together an agreement on increased liberalization of digital trade (James, 2020). Over 83 countries – including all developed countries, five countries from Africa, China, and three Least Developed Countries (LDCs) – are currently part of the initiative. While it is uncertain how much progress will be made at the JSI because of differences among three major and influential members – the US, the EU and China (Ismail, 2020), what is clear is that these three powerful actors are already en route to building parallel digital trade policy

<sup>6</sup> For example, consider the CCI decisions pertaining to acquisition of 42.52 percent of equity share capital of MakeMyTrip by Ctrip.com International; or the acquisition of Aditya Birla Retail by Witzig with Amazon acquiring a 49 percent stake in Witzig, the rest belonging to Samara Fund.

<sup>7</sup> US, Japan, Germany, China, Taiwan, France, Switzerland, UK, South Korea and the Netherlands.

regimes, and forging regional and bilateral Free Trade Agreements (FTA) that will protect their digital geo-economic interests.

The US has consistently battled for complete liberalization of telecommunications and the preservation of the status quo of unrestricted, cross-border data flows in order to secure the market interests of its digital corporations, adopting recently the “data flows with trust” line (Fefer, 2020).

The EU, meanwhile, has retabled its Understanding on Computer and Related Services at the e-commerce plurilateral talks which it already deploys in its bilateral free trade agreements. This Understanding seeks to maintain a distinction between the overlapping categories of ‘telecommunications services’ and ‘computer and related services’, as part of a strategy to limit access of US internet companies to the EU domestic market while simultaneously enabling EU firms to take advantage of the rapidly expanding global market for digitally delivered cross-border services in many traditional sectors. For developing countries negotiating FTAs with the EU, accepting open-ended commitments on ‘computer and related services’ as required by the Understanding has inimical consequences for their trade policy interests. The cross-fertilization of these commitments with sectoral commitments in digitally enabled services (such as in healthcare, advertising, finance, mining, agriculture and transportation), has the effect of automatically liberalizing data flows for the sectors where services are liberalized (Kelsey, 2020).

In global negotiations, China has underscored the cyber sovereignty of national internet and data infrastructure. At the same time, through the Digital Silk Road Initiative, China is attempting to promote and entrench its domestic industry interests in frontier technology standards development, such as 5G (Meltzer, 2020). Notably, though, in its e-commerce overseas markets, China has been pushing for liberalization in logistics services – a crucial infrastructural domain (Gao, 2018). Pushing the digital services liberalization agenda through plurilateral trade agreements such as the Regional Comprehensive Economic Partnership, China aims at consolidating the dominance of its tech giants in Southeast Asian digital supply chains. Alibaba’s inroads in the region, inter alia, include a digital free trade zone in Malaysia (Freischlad, 2020) and a Smart Digital Hub in Thailand’s Eastern Economic Corridor (Alibaba Group, 2018).

### c. Digital taxation

A fair and equitable tax regime has eluded the global economy for long. With respect to the taxation of revenues accrued on virtualized transactions, this issue acquires added complications. Firstly, tech companies have been able to operate in multiple markets without establishing any ‘physical presence’ (OECD, 2015), a central tenet of taxation that is ineffectual in grappling with capital movements in a globalizing economy or recognizing the pertinent connections between revenue theft and data extractivism. Secondly, the platform business model enables tech companies to position themselves as ‘mere’ digital service intermediaries, thus evading tax liability. For instance, Netflix in Brazil had used this argument to avoid paying into the country’s Condecine taxation system, which seeks to create a public funding mechanism for independent media (Valente & Luciano, 2020).

The efforts of the OECD/G20 for global tax reform through the Inclusive Framework on Base Erosion and Profit Shifting (BEPS) initiative, with a significant focus on the digital economy, have had limited success. Even as its Action Report (2015) identified that value generated from data was pertinent to taxation policies and was exacerbating revenue erosion, the OECD ultimately chose to take the view that this was outside the scope of the BEPS initiative. Its efforts in 2015 to achieve international consensus on direct taxation measures for tech corporations failed, while its



more conservative recommendations for indirect taxes on digital services via VAT/GST (passed on to end customers) were taken up by many countries (Bunn et al., 2020).

Outside of these measures, a few countries have tried to introduce unilateral measures through digital services taxation (DST).<sup>8</sup> These moves have been a response to counter the stalemate and inaction within bloc level negotiations. However, they have been met with strong resistance and pressure tactics from the US Trade Representative (USTR), arguing for voluntary tax measures (Mishra, 2020). The USTR has also threatened sanctions against countries seeking to impose DST (USTR, 2020; Schwarzenberg, 2020). Such strong retaliation will likely disincentivize poorer countries from contemplating any such measures.

In mid-2020, the OECD introduced a two-pillar solution for taxation of the digital economy which is to be deliberated over the year and adopted by 2021 – 1. direct taxation measures on corporations through new tax sharing rights as well as ‘significant economic presence’ conditions (as opposed to physical presence) and 2. introducing a global minimum tax for digital companies (OECD, 2020b). Even as this process may seek a consensus response to tackle unilateral tax measures, the deliberations are most likely to end up in a stalemate yet again, given US Big Tech interests (VanderWolk, 2020).

The UN system has also been contemplating new language in its model tax treaty that could extend more taxing rights to countries where customers of digital platforms are located. In October 2020, the UN Tax Committee held virtual hearings on amending the model treaty, as part of which digital taxation was also deliberated. However, given the influence of the OECD model in dictating the language of bilateral tax treaties (Ash & Marian, 2019), the probability that developing countries will be able to adopt this amended UN model is low (Bunn, 2020).

A legacy issue that impedes global tax justice efforts with respect to the digital economy is the WTO moratorium on electronic transmissions (1998), which has been renewed on an ongoing basis. As the category of electronic transmissions has expanded over the years to include digital content (such as streaming platform content, e-book and cloud software licenses), e-commerce transactions, and key technologies such as 3D printing, blanket exemption clauses on digital transmissions place developing countries at an enormous disadvantage.<sup>9</sup> Not only will these countries find themselves unable to gain revenues from these new forms of economic activity, but they are also likely to lose significant revenues to import tariffs on physical goods as manufacturing transitions to 3D printing.<sup>10</sup> This setback will have direct implications for social and economic policies, especially in post Covid recovery.

### Section 3. An agenda for transformatory policy research

Development is about how developing countries can move out of highly competitive activities with low margins to higher value activities with higher knowledge premiums, a process that has been recognized as structural transformation (Mann & Iazzolino, 2019). Fuelled by digital intelligence, all

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<sup>8</sup> In 2020, India's equalization levy of 6 percent on revenues from online ad sales was further expanded to include a 2 percent tax on revenues of non-resident e-commerce operators. India has also developed a policy proposal, to be put in effect from 2022, towards taxing digital businesses by applying a 'significant economic presence' standard. This would extend to revenues from data and software downloads in the country. France has introduced a 3 percent DST recently as well, covering advertising services, sale of user data for advertising purposes, or performance intermediation services. See (Bunn et al., 2020) for more.

<sup>9</sup> In 2019, Japan, US and other major host countries of digital companies brought a policy proposal to the WTO seeking to make the moratorium permanent. However, India and South Africa objected to this proposal, stating, "the impact of the moratorium needs to be understood from the revenue point of view and, from a development perspective, we need to analyze how the moratorium is impacting the efforts of developing countries and LDCs to industrialise digitally and otherwise."

<sup>10</sup> Some projections suggest that by 2040, 50 percent of manufactured goods could be 3D printed.

sectors of the economy are today undergoing a rapid makeover; a transition that requires developing countries to ensure that their productivity gains and digital capabilities are in a virtuous cycle. However, the “intelligence premium” harvested by dominant platform-lead firms in global data value chains constitutes a barrier to entry, impairing the global competitiveness of developing countries (Gurumurthy et al., 2019). The private enclosures of data and digital intelligence unfairly cement the competitive advantage of rich countries in global data value chains and thwart the potential for structural transformation of developing countries. Hence, while the data paradigm presents an urgency for systemic coordination towards national digital industrialization, it also represents a highly contested faultline in global resource redistribution.

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## **The data paradigm presents an urgency for systemic coordination towards national digital industrialization; it also represents a highly contested faultline in global resource redistribution.**

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The development question for the digital economy then is this: how can the data value chain be unskewed for redistributive equity and inclusion?

This conundrum has been the topic of significant, even if nascent, debates. Both traditional and new age policy proposals are being put forth from various quarters: institutional reform proposals from multilateral agencies and regional political blocs such as OECD, policy review assessments initiated at the national level, and unconventional and radical solutions from progressive civil society networks and scholars.

The emerging proposals can broadly be divided into three main areas: reining in Big Tech power, carving out a new resource governance regime for data resources, and building intelligence infrastructure capabilities in the Global South. Admittedly, many of the ideas involved are fledgling and demand in-depth exploration and robust debate before they can coalesce into clear and effective policies. But the juggernaut of Big Tech impunity and a yawning democratic deficit in global/regional policies in critical areas like trade, taxation and capital flows demand bold and agile action that eschews incremental, status quoist measures. They call for a conceptual overhaul that accounts for the realpolitik of geo-economic power.

The following sections take stock of noteworthy policy proposals that have emerged in each of the three areas, examining them critically and posing priority directions for a research agenda<sup>11</sup> that can answer the following questions:

- How are current policy directions and emerging institutional mechanisms able to address questions of market fairness and economic equity in the digital economy?
- How do emerging global policy frameworks on data and AI impact national development priorities and pathways?

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<sup>11</sup> See Annex 1 for an indicative set of research thematics that will guide IT for Change’s research project.

## Area 1. Reining in Big Tech power through traditional policy instruments

In mainstream policy discourses in the digital arena, there is increasing recognition that competition and taxation policy reform are urgently needed to effectively curb Big Tech power in global data value chains.

With respect to competition policy, there is mounting consensus that industrial era competition law frameworks need to be overhauled so that they are able to effectively address the anti-competitive risks of network-data effects in data value chains. In 2020, the European Commission for Competition announced an in-depth study aimed at the updation of its merger assessment rubrics to address the realities of asset light, data heavy platform business models of the digital age (Modrall, 2020). The United States House Judiciary Committee has just concluded an investigation into the structural separations to be effected in data value chains to ensure that corporations controlling essential platform infrastructures are not also competing with the businesses that transact goods and services on them, the urgently needed “separation of platforms and commerce” that legal scholar, Lina Khan, has flagged in her study of Amazon’s antitrust behavior (Khan, 2017; 2019). Such interventions to overhaul traditional competition laws are urgently needed in the Global South as well.<sup>12</sup>

Currently, the European Union is exploring a limited form of structural separation by prohibiting specialized data sharing services from deploying the data that they transact for other uses, in an attempt to establish boundaries between data intermediation and intelligence services layers. But as the proposed regulation in its current form does not extend to cloud service providers, content intermediaries, and data exchange platforms developed in the context of IoT, it can be argued that this regulatory solution does not go far enough.<sup>13</sup>

Emerging scholarship from the Global South suggests that a replication or emulation of the approaches of the US or EU may be inadequate and new conceptualizations may be needed. For example, a recent paper by IT for Change (Singh, 2020) emphasizes a new doctrine of structural separation for the data value chain. This proposal posits that Big Tech firms must be forced to choose between operating in either the upstream layers of provisioning cloud intelligence services or building their business models around the downstream activities of data collection and processing. This, it is argued, will ensure the creation and maintenance of a “salutary distance” between the different layers of global data value chains, preventing the end-to-end capture of data and intelligence value that leads to extreme market concentration.<sup>14</sup>

There is also recognition that in global data value chains enmeshed in transnational capital flows, national approaches alone may not suffice to curb platform firms’ abuse of their market dominance. Drawing attention to the multilaterally agreed Equitable Principles and Rules for the Control of Restrictive Business Practices adopted by the United Nations General Assembly in 1980, Kozul-Wright (2020) has therefore called for a global competition authority.

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<sup>12</sup> In some cases, developing countries have used measures other than competition law to check the power of e-commerce platforms. Through its FDI rules, India, for instance, allows 100 percent foreign direct investment (FDI) in the marketplace model of e-commerce, while disallowing FDI in inventory-driven models. However, dominant platforms have exploited loopholes to circumvent the rules.

<sup>13</sup> See Para 22 of 'Proposal for a regulation of the European Parliament and of the Council on European data governance' (Data Governance Act), 25.11.2020

<sup>14</sup> Parminder Jeet Singh's 2020 paper on '[Breaking Up Big Tech: Separation of its Data, Cloud and Intelligence Layers](#)' for the Data Governance Network argues that traditional competition frameworks are inadequate to address the rapidly building digital power concentration. These need to be combined with perspectives from technology governance that focus on structural separation of technology-functional layers (a la net neutrality, but also more) to form a composite new approach to digital regulation. The paper presents a 'regulatory ideal-type' for structural separation of four key functional layers of digital value chains; data layer, cloud layer, intelligence layer and consumer-facing intelligent services layers.

As for international digital taxation, it is clear that breaking the global stalemate to arrive at a progressive tax regime is critical. The UN Economists Network (2020) has identified the development of a new global taxation framework on cross-border digital transactions to broaden the tax base of developing countries as an urgent policy priority.

A pertinent research agenda for bringing competition and taxation laws up to speed in the digital era therefore includes:

- Models for legal-institutional frameworks that can guide the design of a global competition authority.
- Context-specific exploration of evidence from developing countries of transnational platforms' anti-competitive practices in a range of economic sectors.
- Metrics for antitrust risk assessment of data value in mergers.
- An institutional model for digital competition regulation that accounts for structural separation of the multilayered data value chains in different sectors.
- Conceptual modelling to determine how 'significant economic presence' criteria for transnational digital firms can work in developing country contexts.
- Comparative case studies of digital taxation measures adopted by different countries from the Global South and implications for macroeconomic development.

## Area 2. A new resource governance regime for data

Conventional policy measures to check Big Tech are partial solutions. While they can make a dent in the market power of digital giants, by themselves they are unlikely to ensure equitable 'intelligence dividends' across firms/economic actors in the platform economy. In the absence of an appropriate resource ownership regime around data that balances public and private interests, the intelligence premium garnered by Big Tech will only further private value capture, transferring out value from most of the developing world. Additionally, data building blocks essential for public digital infrastructures across all key sectors – health, education, finance, agriculture, finance, manufacturing etc. – will remain elusive for these countries, condemning them to a downward development trajectory. A new resource governance regime for data therefore becomes a cornerstone policy agenda for development in the twenty-first century.

Legal scholarship on resource governance underlines the role of appropriate private and public ownership frameworks (Epstein, 1987), with room for context-specific resource management tenets (such as access rights for forest-based communities). This is vital for the public interest, and a precondition for the realization of social good. Unfortunately, mainstream policy discussions on data governance (for instance, the World Bank's concept note for its 2021 World Development Report – Data for Better Lives and ongoing conversations at the WIPO (2020) on exploring a *sui generis* patents regime for AI generated outputs) assume as a given, the de facto private ownership regime that operates in data resources.

As illustrated in Section 2b, in global and plurilateral negotiations on digital trade, the contestation between the dominant data economies and the rest of the world is primarily over the extent of liberalization of data flows and market access in e-commerce and digital services. The enclosure of data by first-mover digital firms leaves the majority of developing countries with no other option than to integrate into the e-commerce/digital services status quo.

In order to effectively address the resource governance vacuum that has created the data wild west, we need a "global constitutionalism for data" that lays down the first principles to inform

data's entry and movement through the value chain (Gurumurthy & Chami, forthcoming). As the Digital Justice Manifesto (2019) mooted by the progressive South-centric network, Just Net Coalition, recognizes, this would involve making normative decisions around a range of issues: determination of the boundaries of the data and the intelligence economy based on rights and inclusive development considerations, allocation of rights in data and intelligence resources, and the prevention of state/corporate abuse of data power. As more and more sectors of economic and social life get datafied, these questions occupy center-stage in many policy debates at the global and national level, and indeed, in each and every sector.

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A data economy based exclusively on safeguards through privacy rights cannot stall data extractivism. On the contrary, the privacy ‘shield’ becomes a minimalist, and even reductionist, means to allow data to flow ‘freely’ to the already powerful private hoarders dominating the global data value chains. Representing the embedded relationalities in which people, natural resources, things and phenomena share existence, data is a ‘system resource’ harnessed through intelligence infrastructures.

The commercial exploitation of advances in synthetic biology serves as a cautionary tale about the connection between value capture from digital intelligence and data theft from communities. Digital gene sequencing techniques enable Big Pharma and Big Agriculture to extract value from genetic resources (flora, fauna, microorganisms), without having to physically access genetic samples that attract various obligations – prior and informed consent of the ‘source communities’, benefits sharing mandates etc. – under the Convention on Biological Diversity. As the fourth industrial revolution transforms production chains in a range of sectors, the lack of ‘system resource’ frameworks for non-personal data sets will legitimize data theft, transferring control of the economic (and social) activity to digital (and digitally-emboldened)<sup>15</sup> behemoths. Similarly, aggregate, anonymized personal data footprints of a community may be deployed to design commercial interventions that erode group privacy.<sup>16</sup>

Data discussions have a disproportionate focus on government open data frameworks for economic development, eclipsing the role of privately captured data for public and social value creation. Without appropriate data governance frameworks, Big Tech firms that exercise de facto ownership and control over valuable data and intelligence resources will have little incentive to share data voluntarily. IT for Change’s work, which has also informed national level policy processes on non-personal data governance in India, has underlined how a *sui generis* ‘community data’ regime grounded in the Ostromian idea of common property resource governance may be able to address these quandaries (Singh & Vipra, 2019; Singh & Gurumurthy, 2020). Drawing upon

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<sup>15</sup> Such as Big Pharma, Big Energy and Big Agriculture.

<sup>16</sup> Consider for instance the risks highlighted by digital rights activists on the now-shelved Sidewalk Labs project. See: <https://theccd.org/article/no-such-thing-as-a-neutral-design-nudging-in-the-built-environment/>

common property resource governance traditions in biodiversity, genetic, and traditional knowledge resources, we also propose five core principles of a community data regime: (1) the community's right over data resources associated collectively with it, (2) prior informed consent of the community for use of such resources, (3) benefit sharing with the community, (4) transparency in the form of community data resource registers to prevent misuse and enable legitimate access, and (5) the community's participation in governance of community data resources, including through non-profit trusts.<sup>17</sup>

Future research is required in a range of areas to build upon these directions:

- A model framework law for community data rights that outlines nested and overlapping sovereignties, including jurisdictional, indigenous, etc.
- Exploration of an equity-centered resource/benefit allocation regime for AI technologies based on community data rights and of a FRAND regime for essential AI building blocks for future innovation.
- Implications of digital trade agreements on resource governance regimes for data.
- Data market regulation to recognize social relationality and collective autonomy implicated in data transactions.
- Parameters of 'relevant data communities' and resolution of context-specific ambiguities of the notion.
- Application of community data claims in different categories of data resources.
- Issues of trusteeship for effective data stewardship models.
- Prior informed consent at the individual and collective level in aggregate, anonymized non-personal data resources.

### Area 3. Data infrastructure capabilities for the Global South

Without endogenous capacities to process data and generate digital intelligence and thereby move into the high value segments of data value chains, most developing countries can only realize the "first-order benefits" of accessing global digital trade markets (UNCTAD, 2019). Investments in domestic digital and data infrastructure are hence vital to bridge the "digital capability gap" between domestic firms (in digital and other sectors) and transnational corporations, and to leverage the "second-order benefits" of productivity, wealth and well-being that the data revolution brings (UNIDO, 2020; UNCTAD, 2019). Official Development Assistance (ODA) has an important role to play in bridging this gap. But as current studies of the nexus between ODA, digital economies and sustainable development suggest, not enough attention has been paid to the potential downsides of ODA projects in the digital sector: harmful concentration and monopoly, rising inequality, or state and corporate use of digital technologies to control rather than empower citizens (Bennett, 2019). As a response to this deficit in global development cooperation, the UNCTAD has been advocating for stronger South-South cooperation in digital industrialization: development of public broadband and connectivity programs, investment in cloud infrastructure, and creation of regional level single digital markets that can contribute to the strategic integration of non-personal data flows for development of regional AI capacity (Banga & Kozul-Wright, 2018).

South-South cooperation is no simple mantra for the realization of inclusive and equitable growth. Policy choices must catalyze alternative platform business models, nudging data value chains towards a fairer and equitable distribution of data value across the economy (Gurumurthy et al.,

<sup>17</sup> This concept is drawn from work developed by IT for Change for a forthcoming publication for the Data Governance Network. See: <https://datagovernance.org/> for more details.

2019). National data and AI strategies could support plural imaginaries of platform ecosystems that socialize data value.

It is increasingly evident that the development of data public goods – including open digital/data ecosystems – is critical, especially to promote domestic innovation. At the same time, there is a very real risk that without clear access and use guidelines and licensing conditionalities for innovators, powerful transnational digital corporations may appropriate the value of such public goods (Walker, 2019; IT for Change, 2020). Also, a superficial extension of open access regimes for information and knowledge resources and software public goods to the data domain is not appropriate, with the latter needing institutional governance frameworks to ensure both safeguards and enabling conditions.

Learning labs that promote collaborative South-South research can bring significant, evidence based perspectives to understand national digital infrastructure policy pathways. Research is needed to explore the following issues:

- Global overview of standards development (including platform and data interoperability) and access-and-use regimes for public/national open/shared data infrastructures.
- Risk assessment and impact studies of ODA in national digital infrastructures.
- Development implications of regional single digital markets.
- Predisposing factors enabling virtuous cycles between intelligence infrastructures and economic development.
- Case studies of digital/data public goods initiatives (in health, agriculture, mobility, and transportation) to evolve progressive visions for national intelligence infrastructure development.

## Annex 1

Table 1. A policy research agenda for unskewing data value chains: Indicative thematics

Area	Whether traditional or new domain	Global	National
<b>Competition policy</b>	Traditional	Models for legal-institutional frameworks that can guide the design of a global competition authority.	Context-specific exploration of evidence from developing countries of transnational platforms' anti-competitive practices in a range of economic sectors.  Metrics for antitrust risk assessment of data value in mergers.  An institutional model for digital competition regulation that accounts for structural separation of the multilayered data value chains in different sectors.
<b>Taxation policy</b>	Traditional	Conceptual modeling to determine how 'significant economic presence' criteria for transnational digital firms can work in developing country contexts.	Comparative case studies of digital taxation measures adopted by different countries from the Global South and implications for macroeconomic development.
<b>Resource governance regime for data</b>	New-age	Model framework law for community data rights that outlines ideas of nested and overlapping sovereignties, including jurisdictional, indigenous, etc.  Exploration of an equity-centered resource regime for AI technologies based on 'community data rights' and of a FRAND regime for essential AI building blocks for future innovation.  Implications of digital trade agreements on resource governance regimes for data.	Data market regulation to recognize social relationality and collective autonomy implicated in data transactions.  Parameters of 'relevant data communities' and resolution of context-specific ambiguities of the notion.  Application of community data claims in different categories of data resources.  Questions of trusteeship for effective data stewardship models.  Prior informed consent at the individual and collective level in aggregate, anonymized non-personal data resources.
<b>Intelligence infrastructure development</b>	New-age	Global overview of standards development (including platform and data interoperability) and access-and-use regimes for public/national open/shared data infrastructures.  Risk assessment and impact studies of ODA in national digital infrastructure.  Development implications of regional single digital markets.	Predisposing factors enabling virtuous cycles between intelligence infrastructure and economic development.  Case studies of digital/data public goods initiatives (in health, agriculture, mobility, and transportation) to evolve progressive visions for national intelligence infrastructure development.



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