POLICY BRIEF

Catalysing Positive Digital Infrastructure Innovation: G20's Role in Advancing Data Agency

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Digital Transformation

Abstract

This policy brief calls for a redesign of global digital infrastructure to centre citizen agency, equity, and sustainability. As data increasingly drives economic and social power, current models – dominated by a handful of Big Tech platforms – entrench structural inequalities, diminish user control, and undermine public trust. Regulatory frameworks like the GDPR have fallen short in addressing systemic power asymmetries and enabling effective cross-border governance.

With the rise of advanced AI systems and increasing geopolitical fragmentation, there is a growing imperative for the G20 – representing the majority of global GDP and population – to lead in establishing coherent, interoperable, and rights-based approaches to digital infrastructure. Building on progress under the Indian and Brazilian presidencies, and aligning with global initiatives like the UN's Global Digital Compact and the G7's Hiroshima AI Principles, this brief outline actionable recommendations.

Key recommendations include: (1) establishing a shared definition and governance framework for digital infrastructure, with a focus on interoperability and public value creation; and (2) embedding data agency at the core of infrastructure design through decentralised, open-source protocols that rebalance power between citizens, states, and technology providers.

Keywords: AI, Digital Infrastructure, User Data, Algorithms, Data Extraction,

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G20's Role in Designing Infrastructure for Public Empowerment: Why Now?

Data shapes economic and social power in the digital age, intertwining with personhood and determining who benefits from technological progress[1]. Governments must prioritise public-interest digital infrastructure solutions, where data agency is embedded by design, not as a luxury but as a prerequisite for equitable development.

Digital infrastructure – across public, private, and civic systems – powers connectivity, innovation, and access, driving inclusion, essential services, and solutions to global challenges like inequality, health, and climate change.

However, growing market concentration among a few dominant tech platforms jeopardises fair competition, personal data control, and user agency[2]. In 2023, the G20 Finance Ministers already voiced escalating concerns over the risks posed by overreliance on Big Tech, particularly in the financial sector (G20 India, 2023), and recently, concerns were raised with the US over a decision to restrict the export of artificial intelligence chips from the likes of Nvidia Corp. to some European Union member states (Nardelli 2025).

Initiatives like Google's "Privacy Sandbox," Apple's "App Tracking Transparency," and Meta's end-to-end encryption in WhatsApp are technological fixes that maintain cenralised control over user data. Indeed, enhanced algorithms or transparency measures do not address the structural issue: existing incentives favour power concentration, relentless data extraction, and profit maximisation.

[1] Zuboff, Shoshana. The Age of Surveillance Capitalism. Profile Books, 2019.

[2] Data as markets – it is time to talk (re)distribution, Pantelis Koutroumpis, UNESCO Inclusive Policy Lab, 2021

Evidence from existing regulatory approaches must be considered. Laws like the General Data Protection Regulation (GDPR), while groundbreaking, fail to safeguard data agency due to the inherent limitations of consent-based models that do not challenge fundamental power structures (Degelin et al, 2019). Further, the regulation's weak provisions on cross-border data flows hinder global applicability. Similarly, South Africa's Protection of Personal Information Act (POPIA) has identified limitations and allows for certain types of processing without consent.

The diagnosis is clear: the current global digital economy reinforces tech monopolies over data and infrastructure, concentrating power in the hands of a few while marginalising the public's ability to shape digital futures. Big tech companies acquire on average, one company every eleven days[3]. Even the world's most ambitious regulations against big tech are facing shortcomings[4]. Today tech monopolies are facing almost no counterpowers allowing them to shape the digital futures as their shareholders wish for profit maximisation.

The rise of advanced AI by private companies demands robust data governance to help citizens protect and leverage the value of their data within existing economic models. As AI outpaces global governance, frameworks are needed to balance innovation, privacy, and equity.

Given the current geopolitical fragmentations and rise of unilateralist approaches, the G20 – which represents 79% of the global population and 85% of the global GDP, and includes the EU, AU and the G7 countries, which represent

[3] Big Tech acquires a new company every 11 days, SOMO, 2025

[4] Big Tech fines just got political, whether the Commission likes it or no, POLITICO, 2025

the largest seven industrialised economies – remains the most powerful platform for global standard-setting and cooperation.

Proposed Policy Pathways

Recommendation 1: Advance shared understanding and definitional clarity of digital infrastructure solutions through common principles and standards by generating consensus on the core components, governance structures, the interplay between physical systems, digital platforms, and data frameworks; mandating interoperability between digital infrastructure solutions to avoid fragmentation of the digital ecosystem; and ensuring a non-extractive "people-first" design approach to them.

Over the past two presidencies of G20, India and Brazil, progress has been made towards considering data and digital infrastructures as high-level issues. G20 India has provided a working definition for Digital Public Infrastructure[5], which has based the United Nations' Global Digital Compact's definition. In the UN document, however, "digital infrastructure" is mentioned only in the context of sustainable development and poverty eradication.

During the Brazilian presidency, the Digital Economy Working Group (DEWG), by choosing digital governance as one of its priority themes, also fostered discussions on DPI. G20 Brazil strengthened the link between these discussions and data governance issues, launching the "G20 Compendium on data access and data sharing across public institutions and with the private sector for public interest"[6]. This also relates to the work of the engagement groups, especially T20 Brazil, which

[5] The DPI Approach: a playbook, UNDP, 2023.

[6] G20 Compendium on Data Access and Sharing Across the Public Sector and with the Private Sector for Public Interest, OECD, 2024.

focused on bridging the demands of different groups, developing a joint declaration with C20, L20, and W20 on artificial intelligence, which also called for a D20[7], a collaborative position on data governance within G20.

Coordination and continuity are key, as the definition of digital infrastructure solutions remains unclear, with ambiguity over whether they are government-led, community-driven, or hybrid models. There is no consensus on core components, governance structures, or interoperability, limiting effective implementation at the national level.

The G20 plays a crucial role in terms of global agenda-setting, as observed through the G20/OECD AI Principles (2019) and its impacts on initiatives such as the Hiroshima AI Process (2023). Given the establishment of DPI, a priority for the Digital Economy Working Group and the taskforce on Artificial Intelligence, Data Governance and Innovation for Sustainable Development, we urge G20 South Africa to build on the efforts of previous presidencies and foster a shared understanding of digital infrastructures, with particular attention to the role of data in this framework. In G20 Brazil, an initiative on bioeconomy was established, bringing together the Sherpa and Finance tracks, which resulted in a high-level principles document[8]. A similar initiative could be established on digital infrastructure, aggregating inputs from engagement groups as well. If not, efforts should be made to maintain institutional knowledge of the progress made thus far.

[7] Why We Need Global Coordination on Data, Not Just AI. World Economic Forum. June 14, 2024. https://www.weforum.org/stories/2024/06/need-global-coordination-on-data-not-just-ai/.

[8] G20 High-Level Principles on Bioeconomy, G20 Brazil, 2024. https://www.gov.br/secom/pt-br/assuntos/noticias/2024/09/g20-chega-a-consenso-e-estabelece-principios-de-alto-nivel-sobre-bioeconomia/11092024-g20-principios-bioeconomia-pdf-em-ingles.pdf.

Diverging definitions at the multilateral level stem from varying legal perspectives across jurisdictions, leading to disagreements. In contrast, globally standardised economic definitions offer a solution. The African Union's Continental AI strategy offers a compilation of regional and national frameworks in Africa (African Union, 2024). Cross-border data flows in Africa are crucial for the continent's digital economy and the AU continental strategy lays the definitional foundation for this. Similarly, the UN's national accounts framework, with over a century of established global standards, provides a practical model for consistency. National statistics offices, already engaged in data governance, could align definitions with these standards, ensuring coherence and actionable policy outcomes.

In the digital economy, individuals simultaneously act as consumers, customers, and citizens, creating ambiguity, especially in digital sovereignty strategies. Governments must clarify whether the citizen's role takes precedence. Establishing digital public infrastructure with a clear citizen-centred paradigm can help prevent systems from reinforcing inequalities and instead ensure they mitigate them.

A major challenge to advancing data agency is the lack of technical understanding among governments. Many officials lack foundational literacy on data governance, hindering effective policymaking. Initiatives like the Internet Society's (ISOC) collaboration with the Internet Engineering Task Force (IETF) educate policymakers on internet functionality, but these efforts must be significantly scaled up and institutionalised to build the capacity needed for informed decision-making in the digital era. The G20 Digital Ministers' meeting could be broadened to include more multistakeholder voices, including civil society and industry.

Recommendation 2: Embed data agency at the core of digital infrastructure solutions by shifting systemic power imbalances between digital citizens, governments and big tech by de-siloing data so it can be used to serve public good; re-balance power by ensuring citizens' data agency (control over their digital DNA) (Africa CDC,2020) which current legislations (GDPR etc.) have failed to address Embedding data agency in the design of digital infrastructure is not just a matter of individual rights – it is essential for reinforcing trust in governments and public digital services.

Data agency – the ability of citizens to have control over their personal data, including how it is used, shared, and monetised, ensuring they have true voice, choice, and stake – must be embedded in the shared vision of Digital Infrastructure Solutions across G7 and G20 countries. A Project Liberty Institute survey report (Bell and Theodule, 2024) found that concerns about personal data are particularly acute in India (93%) and Brazil (89%) – countries with high adoption rates in digital infrastructure solutions and often cited as models to follow.

To embed data agency as a core criterion for the development of digital infrastructure solutions, governments should mandate the use of open-source, interoperable, and decentralised protocols. Many technical protocols – such as Solid, Activity Pub Protocol, Decentralised Social Networking Protocol etc., – are already in use by millions of users and can serve as models to foster trust and resilience. These protocols could be leveraged to inform governments' digital infrastructure development as practical use cases.

The Solid project, used by the government of Flanders, developed by Tim Berners-Lee and supported by the Open Data Institute, introduces a data trust model where individuals store their data in personal online data stores (Pods) and control access permissions, shifting power away from centralised platforms. Similarly, the

EU-funded DECODE project has explored collective data governance models, enabling citizens in the cities of Amsterdam and Barcelona to collectively manage their data through decentralised and privacy-preserving frameworks. Data cooperatives are also being experimented with in different parts of the world (Aapti Institute, Data 2X and Open Data Manchester, 2024). These initiatives highlight practical pathways for ensuring individuals have a true stake in the digital economy.

India's digital platforms like UPI, Aadhaar, and DigiLocker have improved financial inclusion and government service access. However, concerns about private sector involvement and data privacy risks, such as cases around Aadhaar data being sold on the dark web, highlight the need for stronger safeguards and exchange of context-specific good practices to ensure data agency is embedded by design, and not an afterthought. (Ahmed 2023).

The above recommendations help redefine and create the enabling conditions for digital infrastructure as a tool for public empowerment, essential for inclusive digital innovation. They shift digital infrastructure from fragmented and extractive systems toward interoperable, citizen-centred models that empower individuals, foster global collaboration, and unlock the full public value of data-driven transformation. The G20 has the machinery to deliver: the DEWG, Finance Track, Sherpa Track, and engagement groups (T20, B20, C20, L20) provide clear policy channels; key actors – governments, MDBs, standards bodies, and civil society – are already engaged; and its convening power, cross-sector reach, and agenda-setting influence can drive convergence on principles, standards, and implementation. If the G20 acts now, it can anchor a fairer digital future where innovation serves people, not just profit.

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