POLICY BRIEF

Mechanisms for Advancing Digital Infrastructure: Strategies for Meaningful Connectivity and Inclusive Growth

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Iago Camilo Fernandes de Sousa, LLM in Intellectual Property, Tongji University (China)
Ingrid Torquato Oliveira, PhD Candidate in International Relations, University of São Paulo (Brazil)
Dr Maísa Edwards, Lecturer and Graduate Teaching Assistant, King's College London (UK)

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Digital Transformation

SUBTHEME 1

Abstract

Achieving universal and meaningful connectivity is essential for inclusive economic growth, governance, and sustainable development. Connectivity enables technological solutions for environmental challenges. Effective connectivity can, for example, efficiently manage resources, optimise the use of renewable energy sources, support deforestation monitoring, and mitigate environmental impacts. It strengthens economic capacity by facilitating and optimising business operations. It is crucial to empower countries in the current landscape. However, developing economies continue to face structural and financial barriers to digital infrastructure expansion, limiting their participation in the digital economy.

This research aims to examine the available mechanisms that can enhance digital infrastructure development, focusing on financing tools that empower meaningful connectivity. Public–private partnerships (PPPs) and multilateral financial institutions can serve as important players, enabling solutions such as broader market inclusion, financial accessibility, and technological innovation, ultimately supporting the G20's priorities on digital inclusion, innovation, and economic resilience. A central challenge is ensuring that infrastructure investments empower developing nations with digital autonomy while maintaining interoperability and global integration. While robust national infrastructure can protect economies from external vulnerabilities, excessive digital fragmentation risks limiting global cooperation and innovation. Our findings in this policy brief provide guidance for G20 policymakers to scale financing, build inclusive digital ecosystems, and prioritise reliable digital infrastructure.

Keywords: Digital Infrastructure, G20, Multilateralism, Regional Digital Approaches

Diagnosis

The transition from Brazil's 2024 G20 presidency to South Africa in 2025 offers a key moment to advance digital transformation. Brazil's emphasis on universal digital inclusion, AI, and data governance has laid the groundwork for a unified G20 approach to bridging the digital divide. Developing economies continue to face a significant infrastructure investment deficit, particularly in broadband networks, data centres, and digital storage capacity. These structural gaps limit participation in the digital economy, constrain innovation, and exacerbate inequalities in access to services and opportunities. Without reliable digital infrastructure, inclusive growth and sustainable development remain out of reach for many countries, especially as demands for connectivity and data sovereignty intensify. We demonstrate how meaningful connectivity drives inclusive growth, innovation, and sustainable development and directly impacts social equity, workforce development, and economic growth. These priorities are especially timely as South Africa prepares to host G20 delegates now in 2025.

To address these above challenges, a range of financing tools has emerged, including multilateral development bank (MDB) instruments, PPP models, and regional frameworks. MDBs such as the World Bank, New Development Bank (NDB),[1] and African Development Bank (AfDB)[2] offer concessional funding, technical support, and risk-sharing mechanisms for long-term digital infrastructure projects. PPPs have mobilised private capital and innovation to accelerate high-speed internet and digital service deployment in underserved areas. Regional initiatives, such as the EU's Digital Decade Strategy and

[1] NDB initiatives are increasing, such as *Cellular Network and Cloud Services Expansion Project* in Russia.

[2] Supported by the AfDB, projects like the *Rural Connectivity Program* in Kenya and Nigeria target remote communities. The AfDB-funded *Central African Backbone (CAB) Project*, connected multiple countries in Central Africa via a fibre-optic infrastructure.

Connectivity Toolbox, demonstrate how coordinated infrastructure planning and regulatory alignment can enhance investment efficiency and cross-border interoperability. We analyse these initiatives, examining how to mobilise financial resources for digital transformation.

MDBs are critical to financing large-scale digital infrastructure, providing funding, technical support, and risk mitigation tools, and helping developing countries implement sustainable, long-term connectivity projects. The WB has backed, for instance, the Inclusive Digitalization in Eastern and Southern Africa (IDEA) Program,[3] and co-financed, along with the French Development Agency, the Democratic Republic of Congo's Digital Transformation Project.[4,5] Furthermore, PPPs have enabled deployment in underserved regions. By leveraging private capital and innovation, governments accelerate the rollout of high-speed internet, 5G, and digital platforms. In Brazil, the Cinturão Digital do Ceará[6] has expanded high-speed fibre-optic connectivity through public-private collaboration, while the São Paulo Telecentres Project[7] has enhanced digital inclusion via community-based access points. In South Africa, MTN's collaboration with Lynk Global and Huawei[8] supported 5G deployment.

Beyond traditional financing, blended finance and regional funds are gaining traction, combining public and private resources with risk-sharing to attract

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[3] World Bank, *Inclusive Digitalisation in Eastern and Southern Africa (IDEA) Program,* 2024, https://www.worldbank.org/en/news/factsheet/2024/06/27/inclusive-digitalization-in-eastern-and-southern-africa-program-democratic-republic-of-congo-afe-drc

[4] World Bank, *Democratic Republic of Congo (DRC) Digital Transformation Project,* 2023, https://projects.worldbank.org/en/projects-operations/project-detail/P180495

[5] The former seeks to provide internet access to 180 million people across 15 countries and the latter focuses on expanding connectivity and digital services.

[6] Carvalho et. al, *Private-Public Partnerships for Expanding Broadband Access: Lessons from the Cinturão Digital do Ceará Network in Brazil,* 2014, https://www.econbiz.de/Record/private-public-partnerships-for-expanding-broadband-access-lessons-from-the-cinturão-digital-do-ceará-network-in-brazil-carvalho-fernando/10010469382

[7] Association for Progressive Communications, *São Paulo Telecentres Project*, https://www.apc.org/en/case-study-sao-paulo-telecentres-project

[8] Huawei, *Huawei and MTN Sign MoU on Africa Digital Transformation at MWC 2025,* 2025, https://www.huawei.com/en/news/2025/3/mwc-mtn-mou-africa.

investment. Greater regional development is therefore essential for advancing digital leadership because it facilitates capital aggregation at scale, reduces transaction and coordination costs through regional harmonisation, and improves allocative efficiency by aligning investment flows with region-specific digital infrastructure needs and regulatory frameworks.[9]

Blended finance and regional funds are also increasingly used to attract private investment by mitigating risks and pooling resources. EU initiatives like InvestEU and the Digital Single Market improve capital efficiency and lower transaction costs, while regulations like the Digital Services Act and AI Act support fintech and digital innovation.[10] Moreover, developing countries, especially in Africa, face a major digital infrastructure gap. The continent holds less than 1% of global data centre capacity despite having 18% of the population. The ITU estimates a $1.6 trillion global investment is needed, mostly in the Global South. Urban-rural internet usage disparities (83% vs. 48%) further reveal the divide.[11] Development finance has proven effective for digital infrastructure. The IFC's $100 million investment in Raxio supports data centres in Africa, attracting global tech firms. Blended finance has mobilized $60 billion in 111 countries, reaching 177 million people. UASFs also expand rural networks, though they need reforms.[12] Studies have shown a strong link between digital inclusion and development. For example, a 2023 study in 84

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[9] Continued progress also shows the potential of regional collaboration and valuable insights.

[10] OECD, *Blended Finance Principles*, 2025, https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/; European Commission, *Digital Single Market*, 2025, https://ec.europa.eu/eurostat/cache/infographs/ict/bloc-4.html

[11] World Economic Forum, *How Shared Digital Infrastructure Can Bridge the Gap in Africa,* 2025, https://www.weforum.org/stories/2025/04/how-shared-digital-infrastructure-can-bridge-the-gap-in-africa/; International Telecommunication Union (ITU), *Digital Infrastructure Investment: USD 1.6 Trillion to Close the Gap*, 2025, https://www.itu.int/hub/2025/01/digital-infrastructure-investment-usd-1-6-trillion-to-close-the-gap/; Italian Institute for International Political Studies (ISPI), *The Digital Divide:* A Barrier to Social, Economic, and Political Equity, 2025, https://www.ispionline.it/en/publication/the-digital-divide-a-barrier-to-social-economic-and-political-equity-204564.

[12] Reuters, *World Bank Backs Africa Digital Data Push with $100 Million Raxio Deal,* 2025, https://www.reuters.com/world/africa/world-bank-backs-africa-digital-data-push-with-100-million-raxio-deal-2025-04-03/; Chatham House, *Closing the Digital Infrastructure and Connectivity Gap*, 2022, https://www.chathamhouse.org/2022/12/building-global-prosperity/07-closing-digital-infrastructure-and-connectivity-gap.

countries found digital tech boosts financial inclusion and economic growth. It also helps close gender gaps and reduce poverty, as seen in China. The IMF reports digital public infrastructure raises incomes and lowers informality.[13]

Table 1: Examples of regional implementation strategies

Region	**Strategy**
Europe	• Instruments like the European Broadband Fund [14] and the European Electronic Communications Code[15] support high-speed internet and market competition.
Africa	• The AfDB-backed Africa Digital Financial Inclusion Facility (ADFI)[16] promotes scalable digital financial inclusion. • The AXIAN Telecom Expansion Project,[17] financed by a $160 million AfDB loan, expands 4G/5G in nine African countries. • Development Bank of Southern Africa (DBSA) Sustainable Infrastructure Project,[18] demonstrates how development bans advance digital capacity.
Asia	• Via the 14th Five-Year Plan for the Development of the Digital Economy,[19=], China has invested in 5G, data centres, and AI infrastructure. • Digital Silk Road[20] extended China's connectivity to Africa and Southeast Asia, via undersea cables and satellites.

[13] Finance Research Letters, IMF - https://www.sciencedirect.com/science/article/abs/pii/S1544612322007784; https://www.elibrary.imf.org/view/journals/001/2023/226/article-A001-en.xml)

[14] European Investment Bank, *Connecting Europe Broadband Fund*, https://www.eib.org/en/products/equity/funds/connecting-europe-broadband-fund

[15] European Union, *European Electronic Communications Code (EECC),* 2018, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:4379983

[16] Africa Digital Financial Inclusion Facility, *Home,* https://www.adfi.org

[17] AXIAN Telecom, *African Development Bank Partners with AXIAN Telecom to Accelerate Africa's Digital Transformation,* 2025, https://www.axian-telecom.com/en/2025/01/30/african-development-bank-partners-with-axian-telecom-to-accelerate-africas-digital-transformation/

[18] Development Bank of Southern Africa, *Sustainable Infrastructure Project*, https://www.dbsa.org/solutions/infrastructure-fund

[19] State Council of the People's Republic of China, *Digital Policy Release,* 2022, https://english.www.gov.cn/policies/latestreleases/202201/12/content_WS61de9a35c6d09c94e48a385f.html

[20] ORF Asia, *Digital Silk Road*, 2023, https://www.orcasia.org/digital-silk-road

The regional case studies explored in Table 1 demonstrate that coordinated digital strategies, when supported by appropriate financing and regulatory frameworks, can help reduce fragmentation and support scale. For example, the EU's integrated regulatory and investment tools have enabled competition and high-speed broadband coverage across member states, while initiatives such as the AfDB's ADFI and DBSA projects illustrate how regional actors in Africa can drive inclusive digital finance and infrastructure development. In Asia, China's Digital Silk Road reflects a state-led model of regional digital extension. While approaches differ, these examples show that cross-border cooperation enhances infrastructure interoperability, attracts pooled investment, and allows countries to pursue shared digital goals while accounting for local priorities. However, disparities in financing capacity and institutional coordination remain key challenges that require further G20 engagement.

Recommendations

By coordinating strategies, regulations, and governance at the regional level, countries can reduce fragmentation and build economies of scale. This policy brief offers targeted recommendations to guide G20 engagement in advancing meaningful connectivity, with a focus on financing, regional digital coordination, and strategic autonomy. The proposals support Global South efforts to expand infrastructure, build inclusive digital ecosystems, and balance interoperability with digital sovereignty.

Develop an implementation roadmap for inclusive digital infrastructure

- Develop a G20-endorsed implementation guide with guidance for national, regional, and international action on digital infrastructure development and data governance.
- At the national level, encourage governments in designing inclusive infrastructure strategies that prioritise equity, affordability, and locally relevant digital services, drawing on successful examples such as Brazil's Cinturão Digital and community-based access initiatives.
- At the regional level, promote interoperability and policy alignment. For example, the AU's Digital Transformation Strategy (2020–2030)[21] and the Smart Africa Initiative[22] promote connectivity across the continent. The G20 can support these by facilitating knowledge exchange, encouraging interoperability standards, and leveraging multilateral financing to address implementation gaps identified in regional initiatives.
- At the international level, establish a platform to align strategies and facilitate access to technical assistance and financing through multilateral institutions.

Strengthen regional cooperation for digital infrastructure and data governance

- Strengthen regional cooperation through multilateral organisations such as the EU, AU, and ASEAN, alongside collaboration with MDBs to advance digital connectivity and ensure secure, inclusive digital infrastructure.
- Facilitate knowledge sharing and capacity building to develop best practices in digital infrastructure financing, cybersecurity, and data governance.

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[21] African Union, *Digital Transformation Strategy for Africa (2020–2030),* 2020, https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf

[22] Smart Africa Alliance, *Smart Africa Initiative,* https://smartafrica.org/

- Leverage regional models, such as the EU's Digital Decade Strategy and Africa's Smart Africa Initiative, as reference points for coordinated digital development.

Expand and adapt financing models for inclusive digital infrastructure

- Promote regional investment funds and strengthen blended finance models (eg, ADFI and European Broadband Fund) to mobilise public and private capital and expand regional uptake.
- Support MDBs in designing flexible instruments, such as concessional loans, guarantees, and technical assistance, to de-risk infrastructure investments and ensure long-term sustainability.
- Recognise and position regional financing mechanisms as enablers of digital sovereignty, aligning infrastructure investment with national priorities and reducing reliance on external agendas.

Promote greater collaboration at the regional level

- Strengthen collaboration between regional organisations – including the AU and ASEAN – to better coordinate digital strategies across borders. Frameworks like the AU's Digital Transformation Strategy[23] and ASEAN's Master Plan on Connectivity[24] help harmonise interoperability, data governance, and cybersecurity.

[23] African Union, *Digital Transformation Strategy for Africa (2020–2030)*, 2020, https://au.int/en/digital-transformation-strategy

[24] ASEAN, *Master Plan on Connectivity 2025*, 2021, https://asean.org/asean-connectivity-2025

- Increase visibility of countries such as India, Brazil, and the EU[25] members, which are emerging as pivotal players – India with scalable public infrastructure (Aadhaar,[26] UPI, India Stack), Brazil as a bridge builder between Global North and South through inclusive governance, and the EU with its leadership in global regulatory standards (eg, GDPR and the Digital Markets Act).
- These actors, backed by multilateral financiers like the WB and the NDB, can drive the technical and financial agenda for interoperable systems while addressing disparities in digital access. The NDB, alongside multilateral financial institutions like the Asian Infrastructure Investment Bank and AfDB, is key in funding digital infrastructure projects and sustainable digital development.

The role of digital technologies in reducing inequalities, and enhancing digital public infrastructure was a major focus of Brazil 2024 and should be again in South Africa 2025. While digital platforms are improving methods of global communication and economic opportunities, they have also contributed to the spread of misinformation and online harm. Building on the Joint Statement by Brazil, India and South Africa, the Declaration on Digital Public Infrastructure, Artificial Intelligence and Data for Governance is "key to this deployment is the establishment of fair and equitable principles for data governance".[27]

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[25] European Commission, *Digital Markets Act & GDPR Compliance,* 2022*,* https://digital-strategy.ec.europa.eu

[26] World Bank, *India's Aadhaar: Digital Inclusion for 1.3 billion,* 2022, https://www.worldbank.org/en/country/india

[27] GOV BRAZIL (2024) - Declaração sobre Infraestrutura Pública Digital, IA e Dados para Governança – Comunicado conjunto de Brasil, África do Sul e Índia:

https://www.gov.br/mre/pt-br/canais_atendimento/imprensa/notas-a-imprensa/declaracao-sobre-infraestrutura-publica-digital-ia-e-dados-para-governanca-2013-comunicado-conjunto-de-brasil-africa-do-sul-e-india

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