Task Force 05
INCLUSIVE DIGITAL TRANSFORMATION

Minimizing Digital Divide to Promote Inclusive Global Digital Governance: G20-Led Regulation Platform

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Abstract

Acknowledging the lack of data and information on digital divide shared in G20 countries, this policy brief will advocate for establishing a collective *Digital Governance Platform*. It enables the main actors in G20 countries to connect, collaborate and contribute to tackling the pressing challenges of digital divide. Intending to minimize the digital divide in G20 countries, this policy brief helps policymakers monitor, adjust and improve digital policies to foster inclusive global digital governance, ultimately contributing to sustainable development, social stability and prosperity.

The platform is envisioned as a solution to this challenge, defining and categorizing the G20's digital development by three stages: i) construction, ii) utilization, and iii) innovation. Each stage is clarified with a focus on digital infrastructure construction, digital technology utilization, and digital innovation, respectively. By visualizing these stages, it will identify the challenges of digital development in member countries, to facilitate a better understanding of the key factors causing the digital divide.

Lastly, the policy brief will outline solutions for G20 countries to narrow down the digital divide and disparity. Importantly, it will also guide the member countries on how they can improve themselves in their stages. Reducing the digital divide is a long-term and complex process, constant monitoring and adjustments to the policies and measures are crucial. Building a collective *Digital Governance Platform* for G20 countries will be positioned as a promising starting point and a strategic future plan to tackle the digital divide challenges and promote inclusive global digital governance.

Key Words: Digital Divide, Global Governance Platform, Three-Stage Digital Development Process, G20 countries.

Background and Introduction

The promise of digital transformation includes increased growth, innovation, and inclusivity. However, it exposes substantial gaps in both access to and the knowledge of digital technologies, commonly referred to as the digital divide (ITU 2020). In the digital era, access to information and communication technologies (ICTs) is essential for social, economic, and political participation, highlighting the divide between those with access and those without, deepening existing inequalities. Despite efforts to bridge the gap, digital divide and disparity still persist, and exacerbated by the COVID-19 pandemic. Addressing the digital divide comprehensively becomes an urgent need to promote inclusive global digital governance.

As one of the most influential inter-governmental groups, the G20 represents the world's 19 largest economies, combining the Global North and Global South, holding 85% of global GDP and two-thirds of world population (World Economic Forum 2023). Every decision the G20 makes can have a significant impact on global development, and it should take a lead in tackling the challenges of digital divide. This policy brief aligns closely with the Brazil G20's mandate to build a sustainable and inclusive planet.

Digital Divide and Disparity in G20 Countries

The digital divide among G20 countries encompasses not only differences in access to digital infrastructure but also disparities in digital literacy, affordability, and the utilization of digital technologies for innovation and development (World Bank 2019). As we all know, among the G20 countries, inequality between the Global South and Global North in terms of economic growth and digitalization is also another layer to be considered for policy initiatives.

Reducing these disparities has been a recurring theme in G20 discussions, where digital inclusion is increasingly recognized as pivotal for fostering inclusive growth and sustainable development. The G20's commitment to minimizing the digital divide by initiatives aimed at enhancing and building digital infrastructure, increasing access to affordable digital services, and promoting digital literacy for all (G20 Digital Economy Task Force 2019).

The varied landscape of digital development within the G20 characterized by significant differences in research and development (R&D) expenditures, the availability of science, technology and innovation policy (STIP) instruments, and levels of access to digital services, etc., reflects the multifaceted nature of the digital divide challenge (OECD 2021). These variances underline the significance of comprehending and addressing the digital divide to ensure that all countries can benefit from digital development.

Urgent Need for a Collective Digital Governance Platform

Understanding the digital status of every G20 country is foundational for informed decision-making and policy formulation. However, the current lack of shared information and data transparency within the G20 hampers this understanding. This implies the absence of a comprehensive platform for data sharing and analysing during the digital development process among the countries. Thus, the need for a collective *Digital Governance Platform* has become increasingly urgent. This platform will enable G20 countries to monitor, regulate, and adjust their actions and policies effectively to improve digital inclusion and minimize the digital divide. Establishing the platform represents an imperative step towards achieving inclusive global digital governance.

This policy brief suggests building the platform based on the concept of *Three-Stage Digital Development Process*, guiding G20 countries to collect targeted data and put their efforts on achieving digital inclusiveness. This concept aligns with the key phases of digital development - *Construction, Utilization, and Innovation*.

Diagram 1: The Concept of Three-Stage Digital Development Process
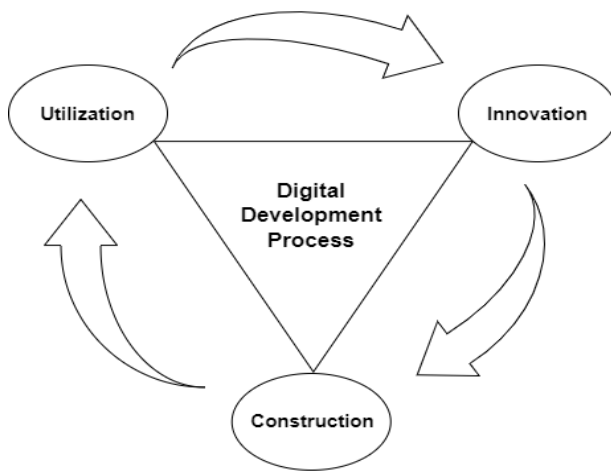
Source: Authors' own

Stage 1: Construction

The construction stage lies in digital infrastructure, encompassing broadband networks, data centers, and other critical ICT facilities. However, significant gaps exist between rural and urban areas, as well as between the Global South and Global North in digital infrastructure construction. For example, rural regions face limited access to high-speed internet and digital services, hindering economic, social and political participation (UNCTAD 2019). This global disparity emphasizes the unequal distribution of digital resources, with many developing countries lacking essential infrastructure for digital development.

Stage 2: Utilization

The utilization stage focuses on effectively adopting digital technologies by individuals, businesses and governments, stressing accessibility and digital literacy, leveraging technology for social and economic benefits (European Commission 2020). Challenges still persist despite progress, especially for developing nations, highlighting disparities in digital literacy, skills and capabilities, and limited access to affordable devices.

Stage 3: Innovation

The innovation stage is characterized by a country's ability to foster digital innovation, reflected in high digital competitiveness, sustainable innovation ecosystems, and the momentum to drive technological advancements (WIPO 2021). This stage is crucial for sustainable growth and global competitiveness (European Center for Digital Competitiveness 2021). Importantly, achieving and maintaining innovation requires continuous investment in R&D, education, and an enabling policy environment that supports startups, research institutions, and collaboration between academia and industry.

The *Three-Stage* concept encapsulates the fundamental phases of digital development that every country experiences during the transition towards a fully integrated digital world. This concept provides a new angle to analyse the current scenario of digital development in the G20.

Current Scenario of Digital Development in the G20

To foster digital development, every G20 country should understand the digital gap in their own country, but also the digital divide between them. Referenced by authoritative databases (e.g. World Development Indicators, EC-OECD, ITU, etc.), the Annexure Table

1 (AT-1) illustrates wide disparities among G20 countries in digital infrastructure, digital utilization and digital innovation.

Digital infrastructure

- **Significant variance in the price of internet indicating the low internet affordability in some countries.**

Internet affordability and electricity accessibility are essential for improving digital infrastructure in the G20. There is a significant variance in the price of internet data among G20 countries. For instance, India and Indonesia demonstrate commendable strides towards affordability, offering 1 GB of internet data at low prices of USD 0.16. In contrast, the US has data prices soaring to USD 6.00 (AT-1).

- **Gap remains in access to electricity, highlighting the need for further infrastructure investment.**

The data reveals that the majority of the G20 have successfully achieved near-universal access to electricity, with rates approaching or reaching 100%. However, disparities particularly in the Global South, for example, South Africa exhibits a lower rate of electricity access at 89.3%, hampering the further infrastructure development and highlighting the need for further investment (AT-1).

Digital utilization

- **A wide disparity in individual internet usage in the G20 reflects the low digital accessibility.**

Individual mobile phone ownership and internet usage indicate the access to digital platforms, are essential for digital inclusion. However, the high internet usage in Russia

(88.2%) compared to lower rates in Indonesia (62.1%) underscores the need to enhance digital literacy, utilization and accessibility (AT-1).

- **The G20 is enlarging the mobile internet connection, whereas the fixed broadband connection is lagging.**

Access to electricity and fixed broadband subscriptions are fundamental indicators of a country's digital utilization. Most G20 countries boast near-universal electricity access, however, there are wide disparities in broadband subscriptions, such as between South Korea (44.3%) and South Africa (2.9%). It highlights critical areas for further improvement in fixed broadband, which is essential for a stable internet connection in schools, governments, companies, etc. (AT-1).

Digital innovation

- **The number of STIP instruments adopted in Global North is double that of Global South in the G20 by 2021.**

The science, technology and innovation policy (STIP) instruments applied in public policy is one of the vital government strategies to promote R&D, innovation, technology diffusion and scientific advancement. However, it found that the number of STIP instruments adopted in the Global North is double that of Global South in the G20 by 2021. Surprisingly, there is almost ten times gap in the total number of STIP instruments between the highest (USA, 492) and the lowest (Mexico, 55) country (AT-1).

- **Low R&D expenditure in the Global South within the G20 emphasises their urgent need for increased investment in digital innovation.**

R&D Expenditure reflects a country's investment in innovation and technology development. South Korea (4.63%) and Germany (3.17%) lead in R&D expenditure, indicating a strong emphasis on technological advancement and the potential for

technology-led growth; whereas countries like Indonesia (0.27%) and Mexico (0.28%) have much lower investments, emphasising the urgent need for increased investment in digital innovation (AT-1).

- **Digital innovation and digital competitiveness are symbiotically related, each other driving forward.**

A country with high digital competitiveness exemplifies a great potential to drive forward digital innovation, mainly driven by a sustainable innovation ecosystem. For example, China ranked first in digital competitiveness in 2021 because of a comprehensive push for entrepreneurship and innovation (World Economic Forum, 2021).

With the *Three-Stage* concept, the digital divide and disparity in the G20 can be recognized in the above discussion. However, the absence of consistent data points from many G20 countries in different databases, poses a significant challenge - it reiterates the urgent need of the collective *Digital Governance Platform.*

This policy brief suggests building the platform in the light of the *Three-Stage of Digital Development Process* concept, to define the different needs for each stage during the process.

Stage 1- Construction

- Ensure to build and develop foundational platform, data and AI infrastructural capability to secure the digital future in developing countries.

- Implement and enlarge the investment strategy of Blended Finance (BF), such as Private and Public Partnership (PPP), in digital infrastructure construction. However, the possibility of undermining the sovereignty of developing countries in their policy space by over-reliance and limited public oversight on private sector should be considered.

- Expand the scale of mobile broadband infrastructure construction, especially in rural areas. As mobile broadband services are usually more affordable and accessible than other forms of internet access.

- Prioritize green digital infrastructure by investing in energy-efficient data centers, promoting renewable energy use in digital infrastructure, and adopting green computing practices.

- Promote infrastructure sharing (e.g. cell towers) among the G20 to make infrastructure deployment more affordable.

- Encourage and simplify multilateral agreements (e.g. roaming agreement, cross-border data flows, cross-border payment system) along with the establishment of international consortia to oversee the shared infrastructure in the G20. For example,

India's Unified Payment Interface (UPI) digital payment system can be used for financial transactions in Singapore.

- Strengthen international collaboration and partnership among the G20, especially providing technology assistance in building digital infrastructure. For example, China provides technology assistance for South Africa for 5G infrastructure building.

Stage 2- Utilization

- Facilitate financial access to digital technologies by covering the costs associated with devices, infrastructure, software, maintenance and training required for digital participation from public sectors (Signé 2023).

- Provide institutional access to digital technologies through public institutions like schools, community centers, and cybercafes, ensuring equitable digital participation beyond home internet access.

- Ensure political access by advocating for a free and open internet where information and content are not unduly restricted by political regimes.

- Respect and promote cultural access by making digital content that is relevant and accessible to diverse cultural backgrounds, recognizing the importance of localized digital experiences.

- Enhance cognitive access by promoting ICT literacy, equipping individuals with the skills needed to effectively utilize digital tools and platforms.

- Expand digital literacy channels - developing digital curriculums from primary school onwards, in technical and vocational education, skill training, and on-the-job training programmes.

- Enlarge the opportunities involving scholarships, internships, and mentorship programmes in collaboration with tech companies and universities, focusing on emerging technologies and entrepreneurship.

- Prioritize the engagement of citizens in the digitalization process to tailor digital services to their needs, to enhance the adoption and trust in digital and e-government initiatives.

- Push for the standardization of digital technologies and access protocols to ensure interoperability, enhance security, and improve the user experience across digital services and platforms.

- Introduce a Global Digital Skills Passport recognized by G20 countries. This passport would document individuals' digital skills and certifications, facilitating cross-border employment opportunities and recognizing digital competencies globally.

Stage 3- Innovation

- Adopt a mindset and culture of experimentation and adaptation, inclusiveness to digital innovations.

- Improve a sustainable digital innovation ecosystem by increasing public investment in R&D, and encouraging social entrepreneurship.

- Increase public funding and support (e.g. grants and tax incentives) for R&D in cutting-edge technologies (e.g. AI, blockchain, and quantum computing), which have the potential to advance digital innovation and address societal challenges.

- Strengthen public and private partnership to drive digital innovation and entrepreneurship. Governments can collaborate with technology companies, startups, and academic institutions to develop and deploy innovative digital solutions. Meanwhile,

moderate public overwatch on giant private players (e.g. Facebook, Amazon, Google, etc.) should be taken into action.

- Create regulatory sandboxes that allow businesses and startups to test innovative digital products and services in a controlled environment without immediately incurring all the normal regulatory consequences. This can encourage innovation by reducing the barriers to entry for new and potentially disruptive digital solutions.

- Encourage G20 countries to adopt open data policies, aiming to fuel innovation by providing entrepreneurs and researchers with the data needed to develop new services, applications, and insights that can benefit the society. Importantly, accompanied provisions (e.g. *General Data Protection Regulation, Lawful Processing of Data*, *Data Breach Notification Procedures*, etc.) should come along with the open data policies to safeguard against exploitation and private capture of data.

- Establish cross-border innovation labs among G20 countries to foster collaborative technology research and development. This could focus on solving common digital challenges, and promoting shared innovations that benefit all.

These recommendations will be the key steps for the platform building. It will enable the platform for data sharing and analysis, improving data-driven planning, policymaking for adaptation, and resilience in a country facing different digital development challenges.

Possible Scenario of Outcome

Reducing the digital divide is a long-term and complex process, constant monitoring and adjustments to the policies and measures are crucial. Building the *Digital Governance Platform* with the *Three-Stage Digital Development Process* concept can bring some promising outcomes, including:

- Building the platform in G20 countries, where collaboration among different stakeholders (policy makers, government, enterprise, academia, etc.) can lead to enhanced common vision, regulation, innovation and digital advantages.

- The platform breaks the geographical and data barriers by improving data sharing and transparency. As it can enhance the understanding of digital statuses and support targeted policy formulation through sharing data, strategies, and best practices among G20 countries.

- The platform harbours sizable second round effects associated with greater scope for digital education, digital healthcare, etc., as data and information are interconnected and shared in this platform.

- This platform can be a possible pilot/roadmap for other multilateral entities seeking solutions to regulate their digital development.

However, gains/benefits are not the only outcome of building this platform, also accompanied with challenges that the G20 should think ahead.

- Excelling at only one or two of *the Three Stages* is insufficient for achieving sustainable digital development as they are interconnected during this process, and failing in any stages could fail to maximize the benefits and seize opportunities.

- Date exploitation and monopolization especially by the private entities will be one of the vital challenges for G20 countries. Therefore, accompanied provisions to safeguard

data privacy, security, data access, benefit sharing, and the ethical use of AI should be standardized with clear guidelines, regulations and responsibilities beforehand.

- Adopting the blended finance models in building the platform to enlarge funding support from private actors is necessary. However, it may increase the risk of over-reliance on private actors while the public oversight and regulation are lagging behind.

Annexure Table 1

G20 Members	R & D expenditure (% of GDP)	Digital Competitiveness Scores	Total Number of STIP Instruments till 2021	GDP per capita (current US$)	Access to electricity (% of population)	Fixed broadband subscriptions (per 100 people)	Individuals using the Internet (% of population)	Individuals owning a mobile phone (%)	Population covered by at least a 4G mobile network (%)	Cost of Electricity on March, 2023 (USD for 1 KW/h)*	Average price of 1GB (USD) data in 2023#
Year	2019	2021						2022		2023	
Global South											
Argentina	0.46	80	105	10650.9	100	23.2	87.2	89.3	97.7	0.03	1.11
Brazil	1.21	88	209	7696.8	99.5	19.4	80.7	88.1	92.4	0.2	0.4
China	2.24	211	95	12617.5	100	37.6	73.1	-	99.9	0.08	0.38
India	0.66*	-396	-	2238.1	99.6	2	46.3	-	98.7	0.07	0.16
Indonesia	0.27	48	-	4334.2	99.2	4.5	62.1	67.9	96.5	0.1	0.28
Mexico	0.28	-49	55	10359.1	100	19.4	75.6	-	95.3	0.1	2.03
Russia	1.04	-67	181	12532.1	100	23.7	88.2	98.8	92.6	0.06	0.25
Saudi Arabia	-	169	-	24315.6	100	29.5	100	100	100	0.05	1.49
South Africa	0.69	-97	126	7073.6	89.3	2.9	72.3	-	98.5	0.15	1.81
Turkiye	1.03	77	338	9743.2	100	21.4	81.4	94.3	99.5	0.08	0.44
Global North											
Australia	1.83	-18	310	60697.2	100	35	96.2	-	99.7	0.22	0.44
Canada	1.59	47	371	52515.2	100	42.1	92.8	-	99.5	0.11	5.37
France	2.19	28	264	43671.3	100	48.8	86.1	94.9	99	0.21	0.2
Germany	3.17	-176	428	51426.8	100	44.2	91.4	-	99.9	0.52	2.14
Italy	1.46	34	186	36449.3	100	31.5	74.9	-	100	0.46	0.09
Japan	3.2	-190	129	40058.5	100	35	82.9	93.8	96.6	0.25	3.48
South Korea	4.63	0	278	35142.3	100	44.3	97.6	97.2	99.9	0.09	5.01
UK	1.7	-85	278	46869.8	100	41.4	96.7	-	99.9	0.47	0.62
USA	3	-72	492	70219.5	100	37.4	91.8	-	99.5	0.18	6
EU	2.19	-	231	38721.1	100	37.9	87	-	-	-	-
Sources	World Development Indicators	Digital Riser Report 2021	EC-OECD	World Development Indicators				International Telecommunication Union (ITU)		https://www.cable.co.uk/mobiles/worldwide-data-pricing/	

*India's R & D figure for the year 2019 is not available in the database, so the 2018 R & D figure is being used in the table.

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