

Annexure 1: Universal and Equitable Digital Inclusion Framework

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Executive Summary

Equitable digital inclusion is foundational to resilient and sustainable digital economies and a priority of the G20. While still shy of the International Telecommunication Union (ITU) target of 98%, broadband coverage has expanded significantly, with 92% of the global population having at least 4G/LTE network coverage in 2023¹. Yet only 68% of people are connected to the Internet². Moreover, globally aggregated figures of this kind mask further extreme inequalities between and within regions and countries, both in relation to connectivity, access and use of the Internet. Extrapolating from the Brazilian G20 Presidency study on Universal Meaningful Connectivity (UMC) undertaken with ITU and CETIC, the number of people *meaningfully* connected is closer to half of that. This underscores the need to focus policy and regulatory attention on the demand-side barriers, while extending coverage to the 8% of people technically without broadband to achieve truly universal digital inclusion and ensure far more even quality to high-speed broadband.

Under the South African Presidency of the G20, the Digital Economy Working Group (DEWG) priority area on “Connectivity for Inclusive Digital Development” has highlighted the need to focus global commitments – such as the Global Digital Compact and on-going efforts within the World Summit of the Information Society “to leave no one behind” – on the demand-side

¹ Refers to the percentage of inhabitants that are within range of at least a 4G/LTE mobile-cellular signal, irrespective of whether or not they are subscribers. International Telecommunication Union (ITU). "Population coverage, by mobile network technology: At least LTE/WiMAX." ITU DataHub. Accessed June 2025.

² Internet usage refers to the proportion of individuals who used the Internet from any location in the last three months. This number is conservative and may mask variations in countries. ITU. "Individuals using the Internet." ITU DataHub. Accessed June 2025.

constraints on equitable inclusion that cannot be addressed by supply-side sectoral solutions alone.

Building on the Meaningful Connectivity framework, ITU, together with G20 Presidency knowledge partners – the Development Bank of Southern Africa (DBSA), and Research ICT Africa – has:

- developed an illustrative framework to assess key supply- and demand-side barriers and drive practical recommendations for achieving universal and equitable digital inclusion;
- identified responses to address key barriers, including key policy, regulatory, and industry responses for demand-side and supply-side challenges; and
- explored financing strategies for the production of statistics that track both challenges and progress.

ITU's contribution to this effort was supported by the Boston Consulting Group (BCG).

This summary distils the benefits of universal, equitable inclusion; the principal supply- and demand-side barriers; and applies the framework to country contexts. Building on prior efforts and DEWG inputs – including Brazil's work on UMC and digital infrastructure investment – it groups countries into five archetypes to target context-specific recommendations across supply and demand. On the demand side, nationally representative surveys undertaken by Research ICT Africa and CETIC research over several years, identify education and income as the primary determinants of internet access and use – particularly through their impact on smart device affordability and the skills required to use them). This helps explain the lagging rates of Internet adoption amongst low-income populations, despite the ubiquity of broadband networks. It underscores the need to move beyond siloed sector-specific responses towards integrated digital policies and enabling regulatory environments that support alternative SME, community, and industry-led strategies and financing to address digital exclusion. Essential to identifying these precise points of policy and regulatory intervention to address intersectional inequalities (gender, education, income, urban-rural location) is the financing of the collection of regular, standardized digital indicators.

Overall, the Priority 1 findings offer potential responses to help G20 members prioritize policy and funding to design country-level interventions to expand inclusive digital

development.

Benefits of Universal and Equitable Digital Inclusion

The ITU defines UMC as access that is safe, enriching, and productive at an affordable cost³. Addressing UMC with an emphasis on both supply- and demand-side strategies can drive **universal and equitable digital inclusion**, unlocking substantial socio-economic value and enabling more inclusive digital economies and sustainable development. Countries with advanced digital ecosystems benefit from expanded economic growth, trade enablement, financial inclusion, and access to education and public services. Digital inclusion also catalyzes gender equality, healthcare delivery, environmental sustainability, civic engagement, and crisis resilience. Over **70% of the UN SDG targets are directly or indirectly linked to digital connectivity**⁴.

Barriers to Universal and Equitable Digital Inclusion

The ITU has established benchmarks for achieving universal and equitable connectivity at 98% coverage and 95% usage. Despite progress toward these targets, persistent gaps remain in both infrastructure coverage and Internet usage. On the supply-side, barriers include demand fragmentation; gaps in core infrastructure; lack of or unclear digital agenda and strategy; execution risk; and country risk⁵. On the demand-side, barriers include lack of awareness of the Internet, limited capability to use it, affordability of devices and data.

Framework for Universal and Equitable Digital Inclusion

Structured, data-driven approaches can support countries in addressing persistent barriers to digital access and usage. Building upon existing datasets and country engagement models, an illustrative framework was developed to assess digital inclusion globally. The “Universal and Equitable Digital Inclusion Framework” is centered on three interdependent pillars: the supply

³ Universal and meaningful connectivity (UMC) defined in: ITU. "Achieving universal and meaningful digital connectivity: setting a baseline for targets for 2030." 2021.

⁴ Refers to power of digital in achieving SDG Targets, where Target either 1) Directly references digital technologies (e.g., Target 1.4); or 2) Digital technologies can contribute to advancing SDG target (e.g., Target 1.1). SDG Digital. "SDG Digital: Digital technologies and SDG targets." 2023.

⁵ ITU. "Digital Infrastructure Investment Initiative: Closing the digital infrastructure investment gap by 2030." 2024.

side (coverage), the demand side (usage), and the enabling conditions (governance and financing).

On the supply side, the framework evaluates coverage of mobile and fixed broadband and foundational elements like power access and backbone infrastructure. Demand-side indicators encompass affordability of devices and services, digital skills development, local language content, and perceived online safety. Enablers focus on policies and frameworks, national business context, funding, financing models, and mechanisms.

As an example of how the illustrative framework can be applied, over 200 countries were analyzed using key indicators⁶ and grouped into five archetypes:

- **Digital Development Starters:** countries with limited coverage and low usage. These countries require investment in basic infrastructure and affordability measures
- **Infrastructure-Led Accelerators:** countries with strong infrastructure but lagging usage, requiring an emphasis on demand-side strategies such as service and device affordability, digital literacy, and local content development
- **Infrastructure-Constrained Economies:** countries with relatively strong usage but lagging in coverage often due to difficult terrain and cost barriers that must be addressed to expand supply
- **Extensive Access Economies:** countries that are nearing the ITU's coverage and usage targets but require supply- and demand-side interventions for marginalized communities while moving into next generation networks; and
- **Achieved Targets:** countries already meet ITU coverage and usage targets but require ongoing focus on online health and safety, cybersecurity, and next-gen adoption.

Across all archetypes, there are cross-cutting recommendations that remain fundamental to advancing digital inclusion. Governments can work to strengthen coordination and transparency within their digital initiatives, projects, and procurements. Additionally, it is critical for governments to continually invest in building technical capacity for infrastructure planning, digital skills development, and the localization of content, ensuring that digital tools and services are both relevant and accessible to diverse populations, as well as investing in measuring digital

⁶ Coverage (4G/LTE or higher access) and usage (Internet usage).

development. All these efforts should consider their climate impact, resilience, and use cases for adaptation.

Specifically, on the supply side, policies should encourage infrastructure sharing and competition, support the deployment of alternative technologies such as community Wi-Fi, foster public-private partnerships, and recognize the ongoing needs to fund and provide network service to the most marginalized areas. Reducing investment risks is critical for closing the remaining digital divide and can be achieved through financial instruments such as guarantees, blended finance, and government-backed purchase agreements, all of which can help attract private sector participation.

Demand-side interventions should prioritize the creation and promotion of mobile-first and local language content and accessible relevant services — especially in essential sectors like education, digital finance, identity verification, healthcare, and advertised and accessible government services. Programs that expand access through zero-rated services, device subsidies, and comprehensive digital literacy alongside broader educational campaigns will be key to reaching underserved populations, including women, youth, rural communities, and marginalized groups.

Policy, Regulatory, and Industry Responses to Demand-Side Constraints on Digital Inclusion

Building on the framework’s pillars noted above, a deeper investigation into demand-side constraints shows that while connectivity is fundamental, universal and equitable digital inclusion also hinges on education, income, and the availability of relevant services. Governments should adopt transversal “digital-in-all” policies and flexible, collaborative regulation (ITU’s G5) to enable coordinated public–private partnerships across sectors. Priority actions include enabling infrastructure sharing and wholesale access to lower entry barriers for diverse players; reducing device costs through innovative financing or tax relief; and embedding digital literacy across schools, workplaces, and adult learning. Regulators should strengthen institutional capacity and use participatory processes to stay agile amid evolving technologies, uphold online safety and information integrity, and address digital inequality.

Funding of Statistics on Digital Inclusion

Regular, standardized collection of digital indicators—paired with evidence-based methods—is essential to tailor interventions to national contexts, monitor progress, and understand demand-side barriers through disaggregated data. In line with the Global Digital Compact, governments and partners should develop new financing mechanisms for official surveys and statistics. Proven models include UNICEF’s Multiple Indicator Cluster Surveys (MICS), the World Bank–UNHCR Joint Data Centre on Refugees, and the 50x2030 (World Bank–IFAD–FAO) program for agricultural statistics.

Conclusion

Although national contexts differ, all countries face barriers to full digital inclusion. Applying structured frameworks and evidence-based policy can more effectively bridge the divide. Progress requires political leadership, coordinated global action, sustained funding, multi-stakeholder collaboration, and innovative financing—not only to expand coverage but to ensure meaningful, safe use of the Internet. Digital technologies can drive equitable growth and resilience; keeping digital inclusion central to G20 cooperation and national strategies is essential for solidarity, equity, and sustainable development.