

G20 MACEIÓ MINISTERIAL DECLARATION ON DIGITAL INCLUSION FOR ALL (Maceió, 13/09/2024)

1. We, the G20 Ministers responsible for the Digital Economy, convened in Maceió, Brazil, on 13 September 2024. Building upon the achievements and commitments of previous presidencies, we conducted discussions on digital inclusion, universal and meaningful connectivity; on digital government and inclusive digital public infrastructure; on integrity of information online and trust in the digital economy; and on artificial intelligence for inclusive sustainable development and inequalities reduction.
2. We reaffirm the importance of building safety, resilience, security and trust and creating an enabling, inclusive, open, fair, non-discriminatory, safe, secure and sustainable digital economy that puts humans and their development at the center and enables the protection, promotion and full enjoyment of human rights. We acknowledge the role of international cooperation, partnerships, innovation, competition and entrepreneurship in the digital sphere, and recognize the transformative power of digital technologies to bridge existing divides and empower societies and individuals including all women and girls and people in vulnerable situations. We thus commit to addressing the challenges and harnessing the potential of the digital transformation, bearing in mind the needs, circumstances and capacities of all countries, and of developing countries in particular, while aiming at the achievement of the Sustainable Development Goals, in order to see its benefits reach all corners of the globe.
3. We believe that our discussions at the G20 Digital Economy Working Group provided valuable insights to our respective contributions to the ongoing discussions at the United Nations towards a Global Digital Compact, in the context of the Summit of the Future, which we hope will pave the way for a more inclusive and equitable digital future for all.

DIGITAL INCLUSION, UNIVERSAL AND MEANINGFUL CONNECTIVITY

4. We affirm our commitment to achieving universal and meaningful connectivity for all, considering that, despite growing digital connectivity, one third of the world's population — the majority of which in developing countries, particularly in least developed countries —, remains unconnected to the Internet, due to the lack of accessibility, affordability, digital literacy and skills. We reaffirm the G20 leaders commitment in 2023 to cut the gender digital divide in half by 2030. We recognize that closing this connectivity gap requires coordinated and targeted efforts to address the specific needs of the underserved and unconnected, providing not only universal access through reliable, resilient and high-performance infrastructure but also a level of secure, sustainable and high-quality connectivity that enables users, including those in vulnerable situations, to have a safe,

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satisfying, enriching and productive online experience at an affordable cost: in other words, meaningful connectivity.

5. Monitoring and measuring this connectivity gap through objective indicators can contribute to effective policy-making and stimulate investment. In this regard, we acknowledge ongoing efforts to develop indicators and metrics for the measurement of universal and meaningful connectivity and to facilitate common understanding in terms of guidelines for these indicators, taking into account the perspectives of the underserved and unconnected, as well as the particular contexts, needs and capacities of G20 members and beyond. As a contribution to this dialogue, we welcome the “G20 Guidelines on Indicators and Metrics for Universal and Meaningful Connectivity”, developed in collaboration with the ITU (annex 1) as well as the report “Universal and Meaningful Connectivity: A framework for indicators and metrics”, introduced during the Brazilian presidency.

6. We recognize that digital literacy and skills are essential to achieve meaningful digital inclusion. By equipping individuals with the ability to access, navigate, comprehend and utilize digital technologies, these skills can empower everyone to fully and safely engage in the digital world through critical thinking, creativity and problem-solving capabilities, which enable individuals to fully leverage digital tools and services for personal, educational and professional development.

7. The Workshop on Universal and Meaningful Connectivity held this year at the G20 DEWG discussed the potential role of innovative and inclusive financing mechanisms, as well as creative funding implementation strategies and tools to bridge the digital infrastructure gap. Financing options from all sources, including international and regional development financial institutions, governments, civil society and the private sector, can play a critical role in advancing these efforts. In this regard, we acknowledge the value of having held the “G20 Seminar on the Digital Infrastructure Investment Initiative”, with the support of the ITU.

DIGITAL GOVERNMENT AND INCLUSIVE DIGITAL PUBLIC INFRASTRUCTURE

8. We reaffirm the importance of promoting an inclusive, open, accessible, equitable, human-centric, safe, secure, trusted, sustainable, development-oriented digital transformation, in which digital government services, including those based on digital public infrastructure (DPI), can play a key role in improving the responsiveness, effectiveness, transparency and reliability of the public sector in the digital era, while protecting privacy, personal data, human rights and fundamental freedoms. In this regard, we recall the “G20 framework on systems of DPI”.

9. We acknowledge that digital identification, a basic DPI, can often be an entry point to digital inclusion and a mechanism to reach target 16.9 of the Sustainable Development Goals, namely to “provide legal identity for all” by 2030. We recognize that trustworthy digital identity and effective authentication policies implemented in compliance with

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applicable legal frameworks on security, privacy and personal data protection can help reduce barriers to accessing services and business opportunities, thus promoting transparency, accountability, efficiency of government services and trust in the digital economy, without discrimination. Taking into account and acknowledging that G20 members and invited countries may have diverse approaches and stand at different implementation stages of policies regarding digital identification and authentication, we welcome the “G20 General Principles on the Governance of Digital Identity” (annex 2), developed in collaboration with the OECD.

10. We recognize that data access and data sharing within jurisdictions, including through interoperability, and in compliance with applicable legal frameworks, including on security, privacy and the protection of personal data, human rights and intellectual property rights, can unleash the potential of data to both public and private sectors for public interest. In this regard, we also recognize the important role of open-source software, open Application Programming Interfaces (API) and the international standards that support them, including open standards, as well as secure-by-design solutions. In the context of data sharing, we reaffirm the importance of enabling cross-border data flows and data free flow with trust, while respecting domestic as well as international applicable legal frameworks and acknowledging the role of data for development. The “G20 Compendium on data access and data sharing across public institutions and with the private sector for public interest”, introduced by the Brazilian presidency, constitutes a reference document for the deployment and enhancement of data access and data sharing solutions, with appropriate safeguards.

11. We acknowledge that digital government services, including those based on secure and privacy-preserving digital public infrastructure, may act as catalysts to inclusion in the digital economy, as they have the potential to provide society-wide digital capabilities that promote innovation and sustainable development. The virtual workshop “Digital Government and Inclusion”, organized by the G20 DEWG Brazilian presidency, placed at its center the dialogue regarding digital inclusion and the contribution of digital public infrastructure to an equitable digital transformation.

INTEGRITY OF INFORMATION ONLINE AND TRUST IN THE DIGITAL ECONOMY

12. We recognize that digital platforms have reshaped the digital ecosystem and online interactions by amplifying information dissemination and facilitating communication within and across geographical boundaries. However, the digitization of the information realm and the accelerated evolution of new technologies, such as artificial intelligence, has dramatically impacted the speed, scale, and reach of misinformation and disinformation, hate speech and other forms of online harms, a phenomenon exacerbated by a variety of economic incentives in the digital domain. We emphasize the need for digital platforms’ transparency and responsibility in line with relevant policies and applicable legal frameworks and seek to work with platforms and relevant stakeholders in this regard.

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13. We thus recognize the relevance of promoting information integrity, understood as the result of an information ecosystem that allows for reliable, diverse, accurate information and knowledge, in a timely fashion. In its absence, trust in the digital economy, in public institutions, as well as in governance and democratic processes may be affected, with negative effects on social cohesion and economic prosperity and the ability to exercise human rights. The protection of information integrity is also vital for maintaining confidence in the information ecosystem and scientific and historical knowledge and may minimize polarization trends that particularly impact people in vulnerable situations. It may also contribute to mitigating political, social and economic instability, radicalization and violent extremism, while also facilitating responses to environmental degradation. As an effort to better assess the global extent of this phenomenon, the Brazilian presidency acknowledges the contributions of UNESCO to inform this debate.

14. G20 members and beyond may promote information integrity through different approaches, in manners that are consistent with international law and applicable legal frameworks, with meaningful participation of all stakeholders, and taking into account the specific contexts of different countries. Since the ability to access and analyze information is critical for building societal resilience against disinformation and misinformation, we encourage investments in online safety education and in digital media and information literacy, in order to raise awareness and assist users in identifying and mitigating risks of online harms, which disproportionately affect women and girls. In parallel, promoting a sustainable and robust digital ecosystem and diverse and resilient information environment is key, including through access to independent, factual and evidence-based information to counter mis- and disinformation. While acknowledging applicable legal frameworks, we encourage countries to promote information integrity and trust in the digital environment as per annex 3, which compiles examples of policies and governance measures aimed at enhancing digital platforms' transparency and accountability to mitigate the risks of online harms, while safeguarding human rights and fundamental freedoms.

15. In order to protect and promote information integrity, the development and deployment of artificial intelligence (AI) solutions in information ecosystems, especially when aimed at personalizing, moderating and generating content, should be ethical, transparent, auditable and accountable, with human oversight and in compliance with applicable legal frameworks to ensure privacy, personal data protection and the respect of human rights, fundamental freedoms and intellectual property. It is also important to effectively mitigate biases, in particular those that may disproportionately affect people in vulnerable situations. We believe that content authentication and provenance mechanisms and related technical standards may help identify AI-generated content, and enable users to identify information manipulation. Transparency, with appropriate safeguards, and explainability regarding data, algorithms and content moderation, that respects intellectual property rights, and privacy and data protection, can be key for building healthy information ecosystems. G20 members and invited countries encourage cooperation and information

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sharing on initiatives and best practices addressing the erosion of information integrity and its impact on the digital economy.

16. G20 members, invited countries, international organizations and participants from the civil society and the private sector had the opportunity to review the current stage of global discussions on information integrity at the DEWG side event “Promoting information integrity: combating disinformation, hate speech and threats to public institutions online”. During that event, Brazil’s presidency announced the “Global Initiative for Information Integrity on Climate Change”, to be developed in partnership with the United Nations, UNESCO and interested countries.

ARTIFICIAL INTELLIGENCE FOR INCLUSIVE SUSTAINABLE DEVELOPMENT AND INEQUALITY REDUCTION

17. We recognize that safe, secure and trustworthy Artificial Intelligence (AI), when applied in a transparent, ethical, responsible and reliable manner, may act as a catalyst for achieving economic growth and inclusive sustainable development within its three dimensions: social, economic and environmental. We reaffirm the G20 AI principles and the UNESCO Recommendation on the Ethics of AI. Building upon our Leaders’ consensus as reflected in the G20 New Delhi Leaders’ Declaration and building upon previous presidencies, we reaffirm our commitment to leverage AI for good and for all, as well as to unlock the full potential of AI, share its benefits for all and mitigate its risks.

18. We acknowledge the ongoing international efforts and initiatives on AI, particularly the adoption by consensus of the U.N. General Assembly resolutions “Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development” and “Enhancing International Cooperation on Capacity Building of Artificial Intelligence”, and look forward to the publication of the report of the Secretary-General’s High-Level Advisory Body on Artificial Intelligence.

19. We reaffirm our commitment to leverage AI for good and our determination to take a balanced approach that unlocks the full potential of AI, promoting an equitable access to and sharing of its benefits. We also underline our engagement to promote the benefits and mitigate risks derived from this technology by committing to risk-based and human-centric, development-oriented, innovation-friendly AI policy and governance approaches that are consistent with applicable legal frameworks on security, privacy and protection of personal data, human rights and intellectual property rights. We also highlight our commitment to work together to promote international cooperation and further discussions on AI for inclusive sustainable development and inequality reduction. In this sense, we welcome the document “Enabling resources for the development, deployment, and use of AI for good and for all” (annex 4), leveraging the work of and in collaboration with UNESCO.

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20. We equally recognize the challenges arising from the AI and other digital divides, and the need to narrow the existing disparities within countries and between developed and developing countries in terms of conditions, possibilities and capacities. We acknowledge the need to find pathways to leverage AI for inclusive and sustainable development, as a tool in combating poverty and contributing to global progress, to the benefit of all. In addition, while often global in reach, AI systems should seek to reflect a diverse range of linguistic, sociocultural, racial and geographical contexts, based on varied and representative datasets, to avoid reinforcing or perpetuating discriminatory or biased applications and outcomes throughout their life cycle.

21. Noting with concern the potential risk presented by AI in widening digital divides within and between countries, we call for the promotion of inclusive international cooperation in this domain, notably on capacity building, joint research and voluntary technology transfer and knowledge sharing, on mutually agreed terms, in order to expand participation of all countries, in particular developing countries, in digital transformation to harness the benefits and effectively participate in the development, deployment and use of safe, secure and trustworthy artificial intelligence systems, in a responsible and ethical manner. In that sense, we underscore the importance of enhancing the ability of all countries, in particular the developing ones, to develop technical expertise and capacities, harnessing data and compute resources and realizing the potential of open-source technologies and systems and open data in delivering AI benefits at scale. The Brazilian presidency presented a Toolkit for Artificial Intelligence Readiness and Capacity Assessment, produced with the support of UNESCO.

22. We acknowledge G20 members' and invited countries' initiatives to improve public services with AI-based solutions. The report "Mapping of AI Adoption for Enhanced Public Services in the G20", introduced during the Brazilian presidency, presents relevant opportunities and challenges faced by governments when adopting AI solutions. We encourage further exchange and cooperation on the adoption of AI in various sectors, as well as to tackle economic, social and environmental global challenges.

23. The G20 side event "Harnessing Artificial Intelligence for Social Equity and Sustainable Development" was a chance for G20 members and invited countries to discuss challenges arising from the prevailing disparities in terms of conditions, possibilities and capacities and explore potential solutions to equip governments and relevant stakeholders, including the private sector, academia and civil society, with the capabilities and tools necessary to respond to such challenges.

WAY FORWARD

24. We are grateful to all G20 members, guest countries and invited international organizations for their contributions to the G20 Digital Economy Working Group (DEWG) under the Brazilian presidency. We would like to especially thank the international

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organizations that worked with Brazil as knowledge partners: ITU, OECD and UNESCO, who contributed and provided valuable feedback towards achieving the outcomes.

25. We also take note of the relevant efforts put forward by engagement groups and their valuable inputs to future work within the Digital Economy Working Group, notably the B20, C20, T20, S20, W20 and J20, among others.

26. As the next Presidency of the G20, South Africa looks forward to welcoming the G20 to Africa. South Africa intends to build upon the achievements of past presidencies to bridge the digital divides, promote equality, and support inclusive sustainable development to improve people's lives. We therefore welcome South Africa's plans to further work on the topics of Artificial Intelligence, the deployment of digital public infrastructure, Digital Innovation Ecosystems to support MSMEs, and measures to further advance universal and meaningful connectivity.

27. We hereby renew the terms of reference for the Digital Economy Working Group and reaffirm our commitment to further advancing the objectives outlined therein.



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Annexes to the Draft Ministerial Declaration

Annex 1

Guidelines on Indicators and Metrics for Universal and Meaningful Connectivity

Introduction

According to the International Telecommunication Union, universal and meaningful connectivity (UMC) means that everyone can access the Internet under ideal conditions and at an affordable price, anytime and anywhere. Specifically, UMC means that individuals, regardless of geographic location, socioeconomic status, race, gender, or any other demographic characteristic, have fast, reliable, affordable and secure Internet access that is always available, along with the appropriate devices and sufficient digital skills to use it effectively.

Incorporating measurement into national digital development strategies can help accelerate progress towards achieving UMC. Sustained investment in measurement generates significant savings by enabling more targeted and tailored interventions and achieve more impact.

These Guidelines are voluntary. They point to a framework that highlights the importance of making UMC a policy objective and why measuring UMC is essential in achieving this objective.

While infrastructure allows 95% of the world's population to access the Internet¹, actual usage lags, highlighting the need for more than just infrastructure. Barriers to adoption include affordability, device availability, digital skills and digital literacy, connection quality, reliability, and content accessibility. These factors also affect the quality of the online experience.

Measuring universal and meaningful connectivity

Accurate, timely, and granular data are essential for understanding current circumstances, designing effective interventions, efficiently allocating resources, and monitoring and evaluating progress. This is true across all domains, including information and communication technologies (ICTs) and digital connectivity.

A measurement framework is proposed for these Guidelines using the definition of universal and meaningful connectivity. It features six dimensions and outlines for each key policy questions and the concepts to be measured:

¹ Source: ITU Facts and Figures 2023. Available at: <https://www.itu.int/itu-d/reports/statistics/facts-figures-2023/>

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- **Connection quality:**
 - ✓ *Measurement objective: Assessing the speed, reliability, and stability of Internet connections.*
- **Availability for use:**
 - ✓ *Measurement objective: Measuring the Internet use among individuals. Evaluating the accessibility and convenience of Internet use in various contexts and locations.*
- **Affordability:**
 - ✓ *Measurement objective: Evaluating the affordability of Internet services relative to individual incomes.*
- **Devices:**
 - ✓ *Measurement objective: Evaluating the availability, affordability, variety, and suitability of devices used to access the Internet*
- **Digital skills:**
 - ✓ *Measurement objective: Assessing individuals' competency and confidence in using the Internet effectively.*
- **Security:**
 - ✓ *Measurement objective: assessing individuals' access to secure Internet connections and the security of end user online experience.*

National averages can conceal vast differences, particularly in large and diverse economies. The proposed framework therefore recommends measuring the situation for all demographic groups and locations in line with the goal of universality by 'leaving no one behind'.

Improving data availability through innovative approaches

In an era where data is generated at an unprecedented pace, new data sources, cutting-edge technologies, and advanced statistical methods can revolutionize data production, analysis, and utilization, and offer additional insight towards more efficient interventions.

Full adoption of these innovative approaches requires new skills, robust infrastructure, effective stakeholder coordination, and rigorous statistical methodologies to mitigate biases, while protecting privacy and personal data.

Striving for universal and meaningful connectivity

Broaden digital strategies to encompass all dimensions of connectivity, beyond just infrastructure, and aim for UMC, ensuring everyone, regardless of socioeconomic background or location, can access the Internet optimally and affordably anytime, anywhere.

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Improving measurement and evidence-based decision making

Recognize the critical role of measurement in achieving UMC and adopt the proposed UMC measurement framework presented in these Guidelines. Collect data with appropriate safeguards for as many ICT indicators within this framework as possible, especially those related to individual use and access.

Strengthening national statistical systems

Adhere to the [UN Fundamental Principles of Official Statistics](#).

Collaborate with the private sector, including through voluntary access to anonymized private sector data on mutually agreed terms while ensuring the adequate protection of intellectual property rights as well as privacy and personal data protection.

Participate in international efforts to modernize statistics, and efforts on new statistical standards for measurement of emerging topics.

Share knowledge and good practices among G20 members and beyond and promote technical assistance and capacity building for least developed countries national statistical systems.

Indicators for measuring UMC (non-binding and non-exhaustive)

Connectivity dimensions

Connection quality²:

- o Households with access to broadband connections
- o Household with access to broadband connection by technology and speed
- o Mobile connection by technology (e.g., 4G, 5G)

Availability for use:

- o Frequency of Internet use
- o Perception that the use intensity meets their needs
- o Internet use by type of location (e.g., home, workplace, educational institution, public areas, community centers, on the move)

Affordability³:

- o Price of fixed-household Internet connection
- o Price of mobile data plan
- o Price of mobile and fixed devices
- o Availability of unlimited data package

² Countries may want to use administrative data obtained from operator, public authorities, or automatic measurements (e.g. subscriptions, speed test data) to complement or replace household survey data on this topic, although administrative data rarely allows for breaking down by key socioeconomic characteristics.

³ Countries may rely on market data to measure affordability instead of on household surveys.

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Devices:

- o Ownership of a smartphone
- o Availability of devices in the household (number and type)
- o Diversified use of devices (e.g. smartphones, computers)

Digital skills and digital literacy:

- o Information and data literacy
- o Communication and collaboration

Security:

- o Adopting security measures
- o Adopting privacy procedures

Socioeconomic and demographic dimensions

Demographic:

- o Priority: Age; Gender; Household size
- o Additional: Ethnicity; Migration status; Belonging to traditional communities/groups; Disability status.

Economic:

- o Priority: Education level; Household income.
- o Additional: Individual income; Workforce status (employed, unemployed, student, retired)

Location:

- o Priority: Rural/Urban; Location (the more disaggregated the better)
- o Additional: Municipality size (number of inhabitants); Hard-to-reach territories

Annex 2

General Principles on the Governance of Digital Identity

In 2021, G20 Digital Ministers acknowledged that easily usable, reliable, secure, trusted, and portable digital identity solutions that guarantee privacy and the protection of personal data could enable G20 Member States to meet the needs and expectations of users of public and private sector services⁴. Subsequent G20 discussions on digital identity took place in 2022⁵ and 2023⁶.

G20 members and invited countries recognize the value of digital identity for achieving Sustainable Development Goal 16:9 by closing the legal identity gap, facilitating access to public services, empowering economic actors, and ensuring that the opportunities of the digital age benefit all. Acknowledging the diverse approaches and contexts in which countries develop and deploy digital identity systems, G20 members and invited countries, supported by the OECD, have developed *these 'General Principles on the Governance of Digital Identity'*⁷. The aim is to promote enhanced governance of digital identity for the benefit of people, societies, and economies.

Developing user-centered, sustainable, and inclusive digital identity systems

Design and implement digital identity systems that respond to the needs of users, including those underserved and unserved and service providers.

Prioritize inclusion and equity and minimize barriers to the access to and use of digital identity.

Protect human rights, privacy, personal data, intellectual property, and prioritize security and reliability to ensure trust in digital identity systems.

Promote accessibility, affordability, usability, and equity across the digital identity lifecycle.

Ensure that access to essential services is not restricted or denied to those who do not want to or cannot access or use a digital identity solution by preserving non-digital ways to prove identity.

⁴ [Declaration of G20 Digital Ministers](#) (2021)

⁵ [Minister's Letter and Chair's Summary: G20 Digital Economy Ministers' Meeting 2022](#)

⁶ [Digital Economy Ministers Meeting: Outcome Document & Chair's Summary](#) (2023)

⁷ The principles are inspired by a consolidated version of the [OECD Recommendation on the Governance of Digital Identity](#).

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Promote inclusive and collaborative stakeholder engagement throughout the design, development, and implementation of digital identity systems to establish a sustainable ecosystem.

Strengthening the domestic governance of digital identity

Take a strategic approach to digital identity that aligns with local and national contexts and define clear mandates, roles, and responsibilities across the digital identity ecosystem while seeking to promote cross-border interoperability.

Promote the use of international standards and open-source software, comply with applicable legal and regulatory frameworks, and provide resources to enable interoperability.

Promote digital identity solutions that are technology and vendor neutral as long as they meet with all relevant security and reliability requirements and the use of internationally recognized technical standards.

Engaging in international cooperation on digital identity

Identify and align to the needs of all users, including vulnerable people and groups, taking into account different domestic and international contexts, as well as service providers, to enable secure cross-border use of digital identity, while protecting human rights.

Engage in international cooperation to advance the understanding and alignment of digital identity governance and technical standards, as well as discussions on cross-border interoperability implementation, while considering disparities and differences among countries and regions, and balancing risks with benefits.

Annex 3

Promoting Information Integrity and Trust in the Digital Environment

Information integrity is essential for the functioning and vitality of societies and economies. Measures that address the erosion of information integrity and push forward a positive agenda to build a more resilient information ecosystem can be implemented by G20 members and beyond. Solutions should take a comprehensive approach, tailored to national or regional contexts, to create an environment for reliable and accurate information to thrive.

This annex outlines five axes, built with contributions by UNESCO, with possible approaches for governments to strengthen information integrity while recognizing the relevance of a whole-of-society perspective:

1. Strengthening resilience
 - a. By countering digital divides and inequalities through policies that foster universal meaningful connectivity.
 - b. By building competencies that empower the public to value information integrity through media and information literacy programs helping individuals identify the risks and impacts, as well as the benefits, of platforms and new technologies can have on their rights and on information ecosystems.
 - c. By strengthening public service communication systems.
 - d. By fostering research, development and innovation policies to promote information integrity.
2. Fostering the development and sustainability of content sources, enabling access to independent, factual and evidence-based information.
 - a. By supporting policies that foster news, science and culture creators.
 - b. By promoting diverse and resilient information ecosystems.
 - c. By protecting and strengthening cultural diversity and ensuring intellectual property protection, including copyright protection of original content.
3. Enhancing transparency and accountability and incentivizing research
 - a. By supporting measures that advance transparency and accountability within digital platforms.
 - b. By supporting independent research access to digital platforms and AI systems data, while protecting individual's privacy and preserving confidential information, including industrial secrets.
 - c. By encouraging relevant digital companies to publish, in a transparent manner, comprehensive human rights due diligence regarding

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- information integrity within their processes and products, with special attention to protecting children and adolescents.
4. Upgrading information integrity governance and institutional capacity
 - a. By considering appropriate policy approaches and governance systems, which may include regulatory, co-regulatory and self-regulatory measures applying to digital platforms and AI systems in a way that are consistent with the international law and applicable legal frameworks.
 5. Incentivizing players to be information integrity-respectful
 - a. By creating market conditions that enable the emergence and growth of market players and incentivize transparency, accountability, and respect for human rights in the information ecosystem, including among media outlets and digital platforms.

These axes and strategies are the bases for fostering an information ecosystem that promotes and protects information integrity, in a non-discriminatory fashion. In parallel, it is key to safeguard freedom of expression and access to information, privacy and data protection.

Annex 4

Enabling resources for the development, deployment, and use of AI for good and for all

Artificial intelligence is increasingly being developed, deployed, and used across sectors and countries. While creating tremendous opportunities in many domains, if suitable guardrails are not in place, there is a risk that AI systems could reproduce and exacerbate societal biases, economic inequalities, and digital divides, among others.

At present, not all countries have access to key enabling resources, nor have equitable access to all the benefits of AI. In this scenario, G20 members and invited countries play a pivotal role in leading collaborative efforts to harness the potential of AI for inclusive and sustainable development and increase equitable access to the benefits of AI, both within and among countries.

Countries' ability to leverage the development, deployment, and use of AI for the good of their economies, societies and individuals may be supported by a robust enabling environment, including both physical and digital infrastructure, skilled human capital, and relevant framework conditions. This may include the availability of data — including data on local contexts such as languages and cultures —, research capabilities, digital skills and talent, suitable governance, institutional settings and a dynamic business sector.

These considerations are reflected in the Brazilian G20 Presidency's priorities: fostering partnerships and cooperation among countries and with relevant stakeholders, strengthening AI enabling environments, and ensuring digital and AI empowerment by enhancing national AI capacity and readiness in all countries, particularly in developing ones.

Based on the Brazilian G20 Presidency contributions, supported by UNESCO, the following findings have emerged:

- Most G20 members and invited countries are actively engaged in shaping their institutional frameworks to support AI development, deployment and use, in line with their laws, regulations, and governance frameworks.
- Important gaps emerge in relation to the deployment of relevant AI resources for sustainable development.
- Few G20 countries have detailed strategies to measure total AI R&D spending and report accurate estimates. With this caveat in mind, substantial investments in AI research and innovation nevertheless emerge, such as funding for AI research centers, university programs, and public-private partnerships.
- Innovation capacity related to AI differs across countries. Some countries produce more scientific productions related to AI, as measured by publications and citations.

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Other proxies for innovation, such as patents filed for AI technologies, show similar discrepancies.

- The safe, secure, and trustworthy development, deployment and use of AI systems in a transparent, ethical, responsible and reliable manner are increasingly becoming a cornerstone of national AI strategies.
- Most G20 members and invited countries have ongoing initiatives aimed at enhancing skills for the digital era, including digital skills, and incorporating AI into secondary and higher education.
- In terms of social and cultural dimensions, a need for the introduction or implementation of policies specifically addressing the gender gap and the environmental agenda and its relationship with AI emerge.

In this context, the Brazilian G20 presidency outlined three axes to support the AI ecosystem development, with the following recommendations:

- **Promote international collaboration and multistakeholder partnership**

Recommendation: Enhancing exchanges on policies with a view to fostering interoperable frameworks to promote the safe, secure, and trustworthy development and deployment of AI systems in an ethical and responsible way. These frameworks should promote economic growth, technological cooperation and development, as well as safeguard human rights, fundamental freedoms, inclusiveness, equity and accessibility. They should also enhance social welfare, facilitating interoperable approaches to AI to reduce inequalities and foster inclusive sustainable development. This can help to effectively address the challenges and mitigate the risks related to it, including those related to personal data protection, privacy, consumer protection and data governance, placing AI at the service of individuals, economies, societies and the planet.

- **Enhance AI enabling environments and capability building**

Recommendation: Strengthening AI enabling environments and enhancing AI capabilities through investments in technology and corresponding infrastructure, as well as in education and upskilling initiatives. Special emphasis should be placed on fostering collaboration with and providing targeted support to low- and middle-income countries and communities, to bridge digital divides, enhance AI-related resources, and improve the countries capacity to determine their own digital and AI future. Promoting cooperation at all levels of AI developments can help spur innovation and foster resilient AI ecosystems globally.

- **Develop governance frameworks and policies**

Recommendation: Developing and implementing agile innovation-friendly and forward-looking governance frameworks and policies that promote digital and AI empowerment.

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These frameworks should enable countries to enhance their national AI capacity and readiness, digital and AI governance, promoting the safe, secure, and trustworthy development, deployment, and use of AI systems, in a transparent, ethical, responsible and reliable manner.

These targeted recommendations aim to utilize the diverse capabilities of G20 members and invited countries to cultivate an AI ecosystem that supports an inclusive, sustainable, equitable growth and distribution of benefits.