United Nations | Department of Economic and Social Affairs

Report of the Expert Group Meeting on

"Socially just transition towards sustainable development: The role of digital technologies on social development and well-being of all"

4 – 7 August 2020, Virtual meeting

Organized by UNDESA/Division for Inclusive Social Development, in collaboration with UNCTAD and ITU

By adopting the 2030 Agenda for Sustainable Development, Member States committed to achieving sustainable development for all nations and peoples and for all segments of society. The Agenda is based on the ideals of inclusiveness and shared prosperity and Member States pledged to leave no one behind and to endeavor to reach the furthest behind first. With 10 years remaining to achieve the 2030 Agenda, addressing the inter-linkages between social, economic and environmental dimensions of sustainable development will require pursuing a socially just transition that is people-centered and grounded in the principles of social justice.

The economic and social fallouts of the COVID-19 pandemic are having a dramatic impact on social development and well-being worldwide. The crisis risks reversing decades of progress in the fight against poverty and exacerbating already high levels of inequality. At the same time, the COVID-19 crisis provides the opportunity to rethink existing socio-economic policy frameworks in order to 'rebuild better'. It has sparked a global dialogue on ways forward out of the crisis to build more inclusive and equitable societies by aligning policy frameworks with the vision and overarching objectives of the 2030 Agenda.

In this context, the expert group meeting was organized virtually from 4 to 7 August 2020, by the Division for Inclusive Social Development of the United Nations Department of Economic and Social Development (UNDESA), in collaboration with the United Nations Conference on Trade and Development (UNCTAD) and the International Telecommunication Union (ITU), with the cooperation with the United Nations Regional Commissions.

Over 80 experts with diverse backgrounds from the five United Nations geographic regions participated in the virtual Expert Group meeting, to review and formulate concrete recommendations on what it takes to enable a socially just transition towards sustainable development and examine the role of digital technologies in facilitating a transition that is inclusive and more equitable. The following is the outcome of the meeting, which will provide substantive input to the Secretary-General's report on the priority theme of the Commission for Social Development to be held in February 2021, and is expected to assist Member States in implementing various SDGs, including Goals 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, and 16.

Key issues addressed

Inequality: The current context of high and widening inequality, with an increasing concentration of wealth and influence on policy, were identified as pressing global challenges. Inequality in all its dimensions – in income, wealth, access to education, healthcare, safe drinking water and sanitation, sufficient, safe and nutritious food, social protection or ICTs – is harmful to society in multiple ways. High inequality is associated with lower productivity, reduced prosperity, and negative impacts on poverty reduction. It further widens the digital divide, and lowers public support for environmental protection. High inequality also fuels discontent and distrust in governments, thus weakening the social contract and eroding democracy. The COVID-19 crisis has not only exposed pre-existing inequalities and the weakness of current systems, but had also exacerbated them, with many more people being left behind.

Technology has great potential to promote social progress but can also exacerbate existing inequalities. Technological advances are not neutral with respect to their impact and depend on by whom, for whom, and for what purpose they are developed and deployed. They provide a plethora of opportunities as well as risks. On the one hand, digital technologies hold the promise of facilitating a transition towards sustainable development and advancing living standards and well-being for all. On the other, the rapid expansion of digital technologies gives rise to risks and unintended consequences in the context of a political economy of high market concentration and dominance by a few companies. While internationally agreed laws and treaties exist, they are not properly/effectively implemented or enforced to mitigate risks. The increased pace of digital transformation and automation risks further polarizing the labour market in both advanced and emerging economies, providing greater opportunities for highly qualified workers who can meet the new skills requirements, while those employed in more routine work are expected to be at greater risk of automation.

The COVID-19 pandemic has had devastating impacts on social development, including an increase in poverty (especially in the number of working poor) and unemployment. Those now being lauded as "essential workers" in health, care, distribution, cleaning, maintenance, food and retail who are keeping society functioning, are disproportionately represented by the poorer segments of the population, including the low paid with poor working conditions, or disadvantaged groups such as youth and women. They are also particularly vulnerable because their work is not suitable for remote working, thereby exposing them even more to the pandemic. The Internet is not easily accessible to all people, leaving many behind, notably in access to education and healthcare. The pandemic is expected to further accelerate digital transformation, which will impact jobs and involve inter-sectoral changes in labour demand.

Digital divide: The Digital divide is a major issue that urgently needs to be addressed. Digital technologies are rapidly transforming all facets of our lives. While increased adoption of digital technology help advance social progress, it can also be harmful to human rights and security, and bring grave threats to personal privacy, dignity and freedom, and, if appropriate policies to mitigate risks are not put in place and/or implemented, it could contribute to a growing divide between haves and have-nots.

Socio-economic (income and non-income) inequalities are closely associated with digital inequalities, as in general the former shape the latter, which, in turn, reinforces existing

inequalities thereby creating a vicious cycle. Tackling socio-economic inequalities through digital technologies, therefore, can only address the symptoms but not the root causes of inequalities. Policies to reduce the digital divide need to be multidimensional: technological, economic, social and educational (creating awareness) and should address both socio-economic and digital inequalities simultaneously.

Until recently, policies aimed at closing the **digital divide** mainly focused on physical access to ICTs. Now, issues such as improving digital skills, affordable access, better Internet usage opportunities or benefits, and building awareness of positive attitudes towards the Internet and regulating negative uses, are becoming increasingly important. The digital divide is a moving target, and cannot be closed completely. Even when universal access to the Internet is achieved, new challenges will emerge, including control over the technology and its design, inequalities in digital skills, usage and outcomes or benefits brought by digital technology will remain and may become wider.

Digital inclusion is fundamental to promoting equality and equity; the increasing digital divide and gender gap need to be addressed. Elements for digital inclusion are **accessibility, affordability, availability, physical and digital infrastructure, and digital skills and use.** There should be minimum standards and agreed measurements for digital inclusion. Online contents should be inclusive and representative of diversity in language and culture. A participatory approach is key for inclusive design, based on the needs and opportunities identified by and with specific social groups. Early engagement with universities, research institutions, civil society organizations, and the private sector can help embed multi-stakeholder approaches in the development of inclusive design.

The interlinkages between innovation, structural change, and inclusion need to be rethought. Innovation can be disruptive and its benefits unevenly distributed. While inclusion has a positive impact on innovation, structural change and achieving the SDGs, it is not necessarily the case that innovation and structural change lead to inclusion. There is a need to carefully examine how innovation can feed into structural change and inclusion.

Science-technology-innovation policy interface

While science, technology, and innovations (STI) contribute both to solving and creating societal problems, there has been an uneven distribution of STI advances. There is weak alignment between the prioritization of STI initiatives and the distribution of the societal benefits they bring. This needs to be addressed urgently, as the world is currently undergoing a new technological revolution more rapidly than previously. The global alignment between STI-focused initiatives and all the SDGs – especially the interlinkages between economic, social and environmental dimensions – should be strengthened.

It is crucial to better and more directly link STIs to policymakers. Bringing more tech expertise focused on the SDGs into government can support building digital governance capacity and that this better represents the diverse communities that STI will impact. STI Policy Fellowship programs take place throughout the world today. They typically bring junior (and sometimes senior) STEAM (Science, Technology, Engineering, Arts and Mathematics) scholars and professionals, typically with graduate degrees, who are willing to take time out of their professional careers for public service into public policymaking at all levels of government for 1-2 / to focus on a particular societal initiative. These programs can

target their recruitment to individuals from groups underrepresented in STEM, including women, to diversify the perspectives brought into the technology decision-making processes.

For the SDGs, a group of interdisciplinary STI policy fellows could be brought together in a team to focus on a challenge such as misinformation in energy, environment, health, education, etc. The "A" in STEAM could be expanded beyond the "arts" to include "anyone". For example, the team might include a representative from a local village so the cultural aspects of a region could be incorporated into an analysis.

Digital governance

In addition to algorithmic bias, competition/anti-trust, privacy and surveillance, important values such as **human rights, the rule of law, trust and transparency** are critical to guide digital governance. Ensuring data privacy and countering misinformation is essential for building trust to facilitate technology adoption. International mechanisms and coordination are necessary to protect/assist those who are left behind or negatively affected. A multi-stakeholder/social dialogue on what the moral and political obligations are, as well as mechanisms to facilitate them, will be crucial to combat both socio-economic and digital inequality.

Democratizing digital governance is necessary, through for instance, involving artists and researchers in the humanities and social sciences (beyond the traditional STEM fields), and civil society organizations, including those who are often left behind. "Democratizing technology" also involves shifting the frame of engagement from "users" or "producers", towards "people", as technology governance affects everyone. Democratizing technology means the control of technology should ultimately rest with people, and that technology should be transparent and held accountable. Digital governance systems will need to deploy tools to address the unequal distribution of income, wealth and control of technologies.

Artificial Intelligence (AI) is revolutionizing the way we live and work. There is a need to better forecast possible scenarios of how these technologies could be used, the skills they might require, and the policies and regulatory frameworks needed at the national and international level. There is a pressing need to **ensure transparency, trust and accountability** in how technologies and data are managed and used. Opacity in relation to the collection and use of data threaten personal freedoms and individual rights. Algorithmic biases threaten to widen inequalities. Discriminative data collection (unintended or intended) can harm vulnerable populations without access to proper recourse mechanisms. Currently, these mostly take years and are often out of reach of many people, so new independent and effective mechanisms that directly represent ordinary people subject to AI decisions should be established, for example in the form of a digital ombudsman. This is important as AI is qualitatively different from most other technologies as it is often difficult to understand why and how it makes decisions, even for the developers themselves and certainly by most of those applying it. Technological design can exclude people with limited connectivity or hardware access. These risks call for a transparent and robust regulatory framework with accountability mechanisms that can assess the impact of technology on people over their life cycle.

In addition, contextual technology assessment is necessary prior to adoption, incorporating measures for transparency, for example, periods for public comment, and consulting stakeholders during the problem framing and development process. Establishing robust procurement procedures for technologies supplied by private corporations can increase trust

and accountability by using audits to address 'black box' proprietary systems. Inclusive assessment procedures help answer questions like: "What is the identified problem?", "Is technology the best solution and use of resources?", "Is the technology sustainable?", "Who receives the benefits and who is harmed?", "What accountability procedures need to be in place?".

COVID-19 has exposed the vulnerabilities of current systems, and some surveys show a decline in public trust in both digital technology and in government. On the other hand, it has created a space for radical rethinking with a mass support. Societies are ready for new ways of thinking and accepting bold policy changes. The next five years are critical to redirect the course, but the momentum is now before the COVID-19 crisis phases out. We are at a critical juncture to take action if we are to realize a socially just transition towards a new paradigm.

Regional Breakout Sessions of the Expert Group Meeting

Four regional breakout sessions[1] were organized as part of the EGM, led by the UN Regional Commissions. These sessions aimed to reflect the specific challenges and needs of each region, and examined the socially just transition and trends in digital technologies, including the opportunities they bring and the risks they pose, as well as their role during the COVID-19 crisis and beyond. Their recommendations are integrated into the Policy Recommendations for the EGM as a whole.

Key issues addressed

The session of the **UN Economic Commission for Latin America and the Caribbean (ECLAC)** highlighted the risk of increased polarization of the labour market due to rapid digitization (accelerated by the COVID-19 crisis). Labour laws and social protection systems need to be reformed in the region to provide adequate protection to the high number of informal workers and enough support to those engaged in new forms of work in the digital economy. To address the digital divide in the region, the session called for the **universalization of digital technologies and the Internet**. There is a tendency to analyze the impact of technologies at the individual level, but the pandemic has shown the need to advance in incorporating the family sphere and their internal relations as a complementary perspective. The digital revolution is supporting new forms of civic engagement and democratic participation in the region. The session underlined the importance of **generating joint digital, social and economic strategies through intersectoral dialogue** to improve positive social impacts of technologies and reduce/mitigate negative ones; and of exploring how to **reduce technological waste**. Finally, the need to advance on **people's digital rights** has been brought to the fore during the COVID-19 crisis in the region.

The session of the **UN Economic Commission for Africa (ECA)** underlined that in Africa, governments should prioritize efforts to close the urban-rural digital divide, which prevents rural populations from engaging in the digital economy. Emphasis should be placed on providing **low-cost or free digital infrastructure and Internet data to rural populations**. Similarly, **digital identification**, as a foundation platform, plays a significant role in helping reach the right population group at the right time in a secure manner in the region. The key is in making sure it is inclusive and reflects personal data protection and privacy. It is also critical to have **foundational identification systems that are inclusive with minimal**

[1] The regional breakout session for ESCWA was postponed until further notice, due to the explosion in Beirut that occurred the day before the scheduled date.

requirements to make sure that no one is left behind. Proving one's identity is the first and essential step for electronic trade and the digital economy. Implementing foundational IDs of such nature requires practical use cases focused around **ensuring the proper distribution of social benefits and rights**. The Session brought to the fore the need to **unlock demand for unskilled labour** through the digital platforms that formalize and facilitate the exchange of goods, services, and labour in the domestic economy. A combination of **improved connectivity, lower-cost search for markets, and lower logistical costs** make this a viable and attractive pathway for African countries. The Session also highlighted the need for Governments to **shift their focus from mass urbanization, to the creation of satellite cities** that focus on promoting the use of technology, such as the smart villages being developed in Niger.

The session of **the UN Economic Commission for Europe (ECE)** was the opportunity to discuss the **European Union's digital strategy (2020)** and the importance of **digital connectivity,** which has been enhanced with the COVID-19 crisis. The session also discussed the **unequal distribution of scientific advances** calls for **a greater alignment between STI priorities and the SDGs** globally, as well as better linkage between STI and policy-making - the COVID-19 crisis revealed a lack of communication between science and policy. **Better skills forecasting** is needed to prepare Europe's future labour force. The great majority of ECE countries have made big strides in developing digital infrastructure, Internet access and implementing digital government (e-government). At the same time digitization has brought about both opportunities (opportunity for a bottom-up mobilization at addressing climate and epidemiological (COVID) disasters and to enhance the broader population participation in policy/decision making) and risks (inequalities in access to education and wealth, skills polarization and mental health issues related to quality of work) in the region. **Access to Internet/digital inclusion** was also addressed through the prism of **fundamental human rights**. Finally, digital sector governance and regulation issues were raised; the intrenched hostility of the digital sector to intervention and guidance was pointed out. Likewise, the question of the adequate level for such regulation (national, regional, international) was also raised.

The session of **the UN Economic and Social Commission for Asia and the Pacific (ESCAP)** discussed digital inclusion, focusing on three groups, persons with disabilities, women, and older persons. Asia-Pacific had made remarkable economic and social progress, but inequalities persisted and were even increasing. According to ITU, the region was the most digitally divided in the world and included countries of different levels of development. COVID-19 has amplified inequalities of opportunity across population groups and between the digitally "connected" and the digitally "unconnected" in the region. The "surge" in the use of digital technology caused by the pandemic presented also an opportunity to overcome the digital divide in Asia and the Pacific. A number of recommendations emerged from the session, notably the need to **improve digital inclusion** by developing technological infrastructures, providing affordable access, enhancing digital skills among excluded and disadvantages groups; identifying connected and unconnected communities; understanding the specific needs of different groups in disadvantaged or vulnerable situations; ensuring that easy and affordable access to digital technology not endanger personal privacy, dignity, and freedom; mainstreaming digital technology policies and programmes into general public policy development and implementations; creating public-private partnerships with the involvement of civil society, groups in disadvantaged or vulnerable situations, and building on volunteerism within societies; strengthening evidenced-based policymaking; and

developing a whole-of government approach that connects different government entities and develops and implements digital technologies plans and policies.

I. Key Messages

- **Digital technology should be at the service of people, rather than people being at the service of technology".** Although digital technologies can help advance social progress, they can also pose grave threats to **personal privacy, dignity and freedom**, so a people-centred approach to digital transformation is critical.

- **The digital divide** should be seen as one of many dimensions of socio-economic inequality, all of which are **inter-linked and mutually reinforcing**. Addressing socio-economic inequality solely using digital technologies may not bring the intended results, as digital technologies are widening the gap between the "connected" and the "un-connected", which exacerbates existing inequality between "haves" and "have nots". We need to **address both socio-economic and digital inequality simultaneously**.

- **Tackling the digital divide is complex and requires a multi-dimensional strategy** that not only focusses on improving physical access and the affordability of ICTs, but also includes investing in digital skills, promoting better internet usage to increase opportunities or benefits, building awareness of positive attitudes towards the Internet, and regulating negative uses.

- **One-size does not fit all**. There is a need for flexibility in policy choices and context-specific approaches (taking into account regional, national, local and community contexts) when approaching the issues linked to digital transformation, including the digital divide, digital governance, digital inclusion, partnerships and innovative approaches.

- The Covid-19 crisis is accelerating the pace of digital transformation. **The world is at a critical juncture**. We must act now, if we want to realize the socially just transition towards sustainable development. Societies are ready for a new way of thinking to redirect their course, and to accept bold policy change for this purpose**.**

II. Policy Recommendations – Socially Just Transition Towards Sustainable Development

<u>Establishing a new paradigm</u>

To realize a socially just transition towards sustainable development, further efforts are needed to:

- Shift from an overemphasis on economic efficiency to find a new **balance between economic efficiency and resilience** that is both social and environmental;
- Explore the huge opportunities created by a growing trend towards **greater local autonomy,** based on local supply chains (including food chains), local circular economies, and the creation of more local green jobs.
- Invest in good governance and policy, but also enhance the role of civil society and voices of all people, including vulnerable segments of the population, in policymaking;
- Ensure that the **transition towards sustainable development** creates a more equitable and equal societies. To achieve such social objectives, public cooperation and support is essential, as the process in implementing environmental and sustainability policies need to be **perceived as fair by all parts of society**.

- **Reduce income differences to address excessive consumerism especially in developed market economies**, which causes so much environmental damage. Research shows that inequality intensifies status anxiety, which in turn unnecessarily fuels competition and so consumerism. Consumerism is one of the biggest threats to sustainability and it is substantially increased by greater inequality. There is a need to bring it under control by reducing income inequality.
- **Extend democracy into the economic realm,** as companies that promote greater employee participation and involvement tend to have smaller income difference, higher productivity and profitability, and are more socially responsible.
- Promote **social solidarity and inclusive business models**.

Recommendations for Governments:

- Support inclusive and quality education, life-long learning, training and re-training (re-skilling)– basic education is fundamental, but also re-training is imperative to prepare for the new types of work in the digitized world we are already experiencing.
- Address extreme inequality by working on several fronts, such as: reduce income differences before tax, enhance international tax cooperation and tackle tax havens; promote equal opportunities and access to basic services and social protection; promote inclusion and diversity in workforce; promote free internet access; and implement recession recovery/stimulus measures designed for reducing inequality.
- Establish more systematic evaluation of public policies on social cohesion and environmental sustainability.
- Put in place policies for recovery/stimulus that takes a human centered approach in addressing pre-existing inequalities, facilitates the transition to environmentally and socially sustainable jobs, and combines environmental and social goals.
- Ensure greater policy coherence, particularly through a whole-of-government approach.
- Government should devise joint digital, social and economic strategies based on intersectoral dialogue. Technology and social, economic and environmental sustainability must go hand-in-hand. For example, it is critical to explore technologies to reduce technological waste. This implies standards, agreements and cooperation among public and private actors.
- Ensure the inclusion of women and other social groups in policy-making processes, including through both a mainstreaming approach as well as targeted policy measures to facilitate their digital inclusion.
- Restore trust in governments and institutions through better governance, including the effective regulation and transparency of lobbying and political financing.
- Responsible business behavior needs to be encouraged through the right incentive structures that, for example, encourage equality in the workplace, distribute benefits fairly, become environmentally responsible and reward long-term ethical investment.
- Put in place legal frameworks as well as institutions to ensure the open and transparent implementation and enforcement of laws pertaining to digital governance.
- Building on the lessons learnt from COVID-19 crisis, rethink existing systems and adopt bold policy change to redress social, economic, environmental and digital inequality.
- Harness the potential of digitalization to release human potential by ensuring human control over the technology, that it is directed to human needs and that it complements human skills and aspirations.
- Tackle the root causes of the digital divide by providing appropriate infrastructures and ensuring accessibility, affordability, appropriate human skills and control, as well as free internet.

- Scale up good experiences of digital technologies for development (such as e-wallet in Jordan). Digital technologies that promote equity requires public financing or at least public oversight to be developed and deployed. Patents can be an obstacle to accessing public goods, such as vaccines. Low income countries face major deficits in financing digital technologies that provide necessary public goods.
- In the governance of digital technology, develop structures based on ethics, transparency, security, equity and inclusion. An independent and effective mechanism/institution that directly represents ordinary people should be set up, for example in the form of a digital ombudsman.
- Ensure that technological innovation is leveraged to support new **forms of democratic participation** (broader population participation in policy- and decision-making) and **civic engagement**, notably in the fight against climate change and epidemiological disasters (such as COVID-19).
- **Unlock demand for labor and support the matching of supply and demand** through digital platforms that formalize and facilitate the exchange of goods, services, and labour in the domestic economy.
- **Review labor regulations**, so as not to leave out people who are not protected under new forms of work. Special focus is needed on micro and small business units. This also implies finance, technical assistance and training to access technology and proper skills.

III. Policy Recommendations – The Role of Digital Technologies on Social Development and Well-Being of All

Digital Divide

Governments, the private sector, civil society organizations and international community/UN entities and Bretton Woods Institutions are encouraged to:

- In line with the UNSG's Roadmap on Digital Cooperation, the **UN System organizations and entities** should continue to mobilize efforts to address the challenges of poor digital infrastructure and lower levels of skills in developing countries, and to harness innovation for development. In this connection, it should continue the UN system-wide follow up to the World Summit on the Information Society (WSIS), with its core principles and action lines in terms of digital cooperation agreed by the international community.
- **Strengthen and enhance the Internet Governance Forum (IGF)** as a multi-stakeholder governance group for policy dialogue on issues of Internet governance, bringing people together from various stakeholder groups as equals and provides a platform to discuss, exchange information and share good practices.
- Build capacity to produce and collect **disaggregated data** on the digital divide, by gender, age, geographic area, income, where relevant, disability and type of use of the Internet (e.g. informational, educational, work and career enhancing, entertainment, chat or simple communication and e-commerce) for evidence-based decision-making. In doing so, the different dimensions of inequality (such as socio-economic background, educational level, gender, territory, ethnic and racial origin, language, age, disability) and the barriers to digital inclusion need to be identified. This is important in order to develop relevant indicators and formulate evidence-based policies that address the particular situations of those who do not have access to, nor the capacity to use digital technologies.

- **Ensure that the unit of analysis is not only the individual but also the family**, as the impact of technologies at the family level provides an important complementary perspective to address the difficulties of appropriating digital technologies in family settings.
- In addition to improving physical access to ICTs, efforts should be made to **enhance digital skills and usage,** which are required to take advantage of the opportunities brought by digital technologies. In this regard, **leverage the existing usage of digital technologies and digital skills** (e.g. existing digital financial services) to expand into other under-utilized areas of digital skills (e.g. information skills, content creation, and programming.
- **Recognize the Internet as a public service/public good,** which will help promote universal connectivity.

Governments are encouraged to:

- Improve accessibility to digital technology by developing and **improving mobile & broadband connectivity and major foundational technological infrastructures** (including access to the internet and data infrastructure). This includes governments holding network operators accountable to their license obligations of coverage and roll out, which need to be enforced and adhered to.
- Conduct a **robust assessment of their policy and regulatory frameworks** and ensure that they address the different dimensions of the digital divide (e.g. skills, affordability, motivation, social context), beyond physical connectivity. Policies implemented to close the digital divide should consider the intersectional discrimination, which amplifies the plight of women, older persons, persons with disabilities, indigenous peoples, and other groups that are in vulnerable situations.
- Conduct **regulatory reform, provide market incentives and innovate in the provision of public services to increase Internet affordability and affordability of essential devices** to access the Internet, especially in low-income countries. Spectrum prices, devices and the cost of rolling out infrastructure are some of the many issues that need to be tackled. Governments should ensure that marginalized groups benefit from free internet access and have affordable access to digital technologies.
- **Digitize public service delivery** in addition to, but not replacing, traditional service delivery channels where these are still needed. In this regard, the needs of end-users and social perspectives need to be prioritized. Enhance foundational platforms such as secure and robust **digital identification, as part of the efforts in investing to invest in e-Government.**
- **Promote rural electrification** to incentivize rural digitalization. Governments, particularly in developing countries, are encouraged to urgently invest in electricity infrastructure in rural areas as a way of encouraging the deployment of internet connectivity facilities that citizens can leverage on for increased digital access.
- **Incorporate gender digital divide** into all national policies and strategic plans for sustainable development, especially those which aim to promote digital literacy and strengthen the digital skills of women and girls, as well as enhance women's participation in STE(A)M education and workforce, including as high-level professionals and decision-makers.
- **Convene rounds of dialogue with various stakeholders** as part of policy-making processes aimed at bridging the digital divide.
- **Put in place a National Skills Agenda and reassess the hierarchy of expertise and skills**. This will prevent an overemphasis and valorization of STEM skills. The skills that

are devalued and often covered by women may be the skills that are most likely not replaceable by AI nor automation.

- **Mainstream digital skills across school curricula** at the start of every child's education, they should include technical skills as well as the use of Internet with a critical perspective (to combat misinformation and disinformation). Parents should be given the tools to **support their child's digital learning as well as protect them** from digital predation.
- Develop, in cooperation with educational bodies at all levels, **adequate strategies to adjust existing curricula** in a way that is compatible with the technological development accompanying the fourth Industrial Revolution (4IR). The aim should be to create new generations capable of keeping up with future labor market changes, and to develop new educational policies for e-learning, including promoting online learning under transparent conditions and certification in agreement with internationally recognized and validated universities and other bone fide educational institutions.
- **Governments and other stakeholders are encouraged to work together** to address the global digital divide, mirroring inequalities within and across countries of different levels of development, and helping countries of the Global South to overcome availability, accessibility, affordability and human capital gaps in technology
- Since the global digital divide affects persons in vulnerable situations particularly hard and exacerbates their risk of being left behind, governments and the international community are called upon to **ensure that digital technologies are used to accelerate human progress and well-being of all**.

Civil society organizations are encouraged to:

- Empower civil society to hold government and private capital (companies) accountable, which is important in bridging the digital divide as it is in seeking to reduce overall socio-economic inequalities.

The private sector is encouraged to:

- International certification bodies and the private sector should develop and adopt **labeling** and **certification** of digital products (e.g. 'usability labeling', 'do no harm certification') to encourage the design of products that are inclusive, environmentally responsible, and promote social equality.
- Software producers are encouraged to be **more adaptive with pricing policies** depending on the income status of the regions and countries. It is also in their interest to serve, in a responsible manner, the large markets at the "bottom of the pyramid".

Digital Governance

Governments, the private sector, civil society organizations and international community/UN entities are encouraged to:

- Support the **UNSG's Roadmap on Digital Cooperation** and its specific actions that would strengthen digital governance and improve digital inclusion including those relating to digital public goods and a rights-based approach.
- Protect global internet governance, as the "**internet for all" is currently under threat of fragmentation** (an increasing number of governments try to organize "national" internets). See not only internet but also data and AI, as public good.

- Establish **trust and accountability mechanisms at the international level**, for example, by considering the relevance of internationally agreed human rights framework, especially under ethics to ensure human rights framework.
- Ensure **transparency and accountability of the private sector** that has a dominant role in digital technologies. In this context, consider upgrading policy and laws to match the reality and changing technologies, especially Fintech and the digitization of government services.,
- Consider **promoting inclusive and resilient investments in technology**, with regards to the metrics around decision-making in the financial sector and by investors.
- Engage all relevant stakeholders, including citizens, in particular people living in poverty, persons with disabilities, women, youth, older persons and rural residents, to ensure that **all services to be developed are based on public needs and the public good**.
- Establish an international SDG STI fellowship at the UN, for example modeled after current STI policy fellowships for scientists, engineers, and innovators (for instance, the American Association for the Advancement of Science (AAAS) fellowship in the United States that has been replicated elsewhere in the world) to **develop human capital.** This will create a necessary condition to meet the challenges of digital governance – individuals trained to bridge the worlds of science, engineering and innovation (specifically digital technologies) and policy making.
- Addressing the **underrepresentation of certain groups, including women and minorities, in the science, technology, and innovation sectors** as a priority.
- Ensure that the design of Artificial intelligence (AI) will have an **ethical core, be inclusive and promote civic engagement,** for instance through the creation of multi-stakeholder ethics committees. The involvement and consultation of civil society organizations and citizens (e.g. in data collection, use and governance for CSOs or communities) is key, as they are holders of expertise and innovative solutions, and ensure that data and AI benefit the socio-economic development of communities and citizens.
- Develop significant **capacity to use and regulate AI across government** (in service delivery, policy development and regulatory oversight), by enhancing the science-policy interface and creating a more enabling environment for promoting interdisciplinary researches.
- Consider **transition technologies** that have six characteristics – user-driven, inclusive by design, open by default, proactive, government as a platform, data driven public sector.
- Leverage existing **mandates, regulatory frameworks and policies** on such issues as competition, media, privacy, human rights, discrimination, etc., where applicable to avoid long legislative processes. Consider **anticipatory policymaking** (use foresight and scenario planning to develop multiple alternative responses depending on technological progress and outcome) to reduce the lag-time between the emergence of new digital technologies and their effective and efficient legislative regulation.
- Strengthen **policy coordination** mechanisms, that connect different government entities in developing and implementing digital technology plans and policies. It is critical to include ministries and other entities responsible for social development as part of the design and implementation.
- **To restore trust in governments and institutions**, by making them more inclusive and transparent in addressing the challenges associated with digital governance. Proposals include the creation of: a **Digital Ombudsman** (an independent institution representing ordinary people), a **Data Steward** (in both the government and private

sectors, to provide guidance on data sharing practices), an **Internet Governance Forum** to act as a broker of debates on digital governance that is directly linked to UN inter-governmental bodies/processes in order to translate learning into agendas for action.
- **Establish a code of ethics** on which the international community agree, particularly one that balances the tensions between the public interest and the profit motive.

Governments are encouraged to:
- Establish **transparent digital standards** (e.g. for the creation of platforms) and individual **digital rights** that should be put in place in institutions at national, regional and international levels to oversee their **enforcement**.
- **Create necessary incentive structures for private businesses** to promote social solidarity business models. Encourage private digital innovation and research capacity to find solutions to pressing social and environmental challenges and needs in order to reach the SDGs by 2030.
- **Ensure that STIs link more directly to policy-makers' concerns**. Find participatory approaches to research and development, adapting the language spoken to the needs of the individual/society, rather than the language used by technical experts, and consider what is a good learning culture and environment, rather than just usability (in particular as regards "digital sovereignty") to promote inclusive digital development.
- **Encourage and facilitate digital innovation** by putting in place an enabling regulatory framework designed to promote it, including among young entrepreneurs and start-ups. This should use the "**tight-loose-tight"** approach, which means first establishing clear tight goals (such as SDG targets), second open the field for any innovations attempting to meet these goals (following ethical and legal principles), and third tightly assessing and evaluating their impact on the SDGs in order to learn lessons. This will unleash innovations to achieve the SDGs. For instance, focus on major foundational infrastructures, such as access to the internet and data infrastructures, foundational ID, payment platforms, and interoperable systems.
- Mainstream digital technology policies and programmes, wherever applicable, into general or sectoral policy development and implementation.

Private sector is encouraged to:
- Cooperate with policymakers to set adequate and efficient digital regulatory standards.
- Beyond algorithmic bias, resolve the bias inherent in any decision-making processes (e.g. bias against the hugely diverse communities of minorities and outliers that do not themselves have economies of scale or ability to achieve statistical significance) based on quantified data. Because of their diverse needs, these communities often do not achieve the thresholds required by evidence-based governance decisions. There is a need to evolve and advance science and evidence to address this bias.
- Develop clear **guidelines for cybersecurity** and ensure that groups and individuals in vulnerable situations are included in cybersecurity strategies.

<u>Partnership and innovative solutions</u>

Governments, the private sector, civil society organizations and international community/UN entities and BWIs are encouraged to:
- Design **effective and transparent ecosystems for data sharing partnerships and AI sharing partnerships**, including common transparent standards, procedures and

regulatory frameworks at the international level, that would clarify liability/accountability and would require regulatory compliance.
- Develop user-centric infrastructure specification.
- Explore the development of ethical guidelines on data use.
- Involve and educate the public on data value, including the risk of not sharing data (opportunity cost).
- Strengthen collaboration and **public-private (-people) partnerships** between governments, private sectors, CSOs, and all other stakeholders, including groups and individuals in vulnerable situations, to mainstream the inclusion of issues of concern.
- Strengthen **linkages between ICT communities** to feed into global discussions.
- Bring together people who are connected and those who wish to be connected, building on the principle of **volunteerism and intergenerational solidarity.**
- Explore **new models to conceptualize underserved investment projects**, which promote more investment from Governments or through (public-private) partnerships and encourage alternative innovative solutions that are more time- and cost-efficient (e.g., public Wi-Fi or Community Network). Indeed, investment models that rely on the private sector to expand digital access and connectivity may lead to unserved or underserved areas (for example, remote rural areas) considered unprofitable.

Governments (both at national and local levels) are encouraged to:
- Establish national governance structures that support **Business-to-Government (B2G) and Government-to-Business (G2B) data sharing** and invest in and explore mechanisms to incentivize B2G data sharing.
- Explore a **regulatory framework** providing harmonization of Business-to-Government data sharing.
- Explore the use of **technology-enabled SDG-based Sustainable Public Procurement** (SPP) to engage the private sector in contributing to the SDGs. SDG-based SPP would require all suppliers to disclose their contributions to the SDGs in order to qualify as a government supplier.
- Explore the **use of self-assessment tools on progress on SDGs** for local/municipal authorities as well as SME-friendly supplier self-assessment.
- **Create multi-stakeholder sectoral partnerships which can support the digital inclusion** of groups that are disadvantaged or in vulnerable situations (including people living in poverty, women, indigenous peoples, persons with disabilities, older persons, and youth) by fostering public participation, raising awareness, and monitoring real-time activities on the ground, such as the EQUALS Global Partnership for Gender Equality in the Digital Age.

<u>Digital inclusion</u>

Governments, the private sector, civil society organizations and international community/UN entities and BWIs are encouraged to:
- Continue to exchange through international inter-governmental processes, such as the **UN Commission on Science and Technology for Development** (CSTD), which serves as a forum for strategic planning, sharing lessons learned and best practices, providing foresight about critical trends in STI.
- Promote digital inclusion through enhanced **multi-stakeholders partnership** between governments, civil society organizations representing excluded or disadvantaged groups (such as older persons, persons with disabilities, women, people in poverty,

indigenous people and people living in rural and remote areas, and others), private businesses, technology designers and the developer community, civil society organizations, international organizations such as UN and the private sectors. The concept of '**nothing about us without us'** should be a key principle driving these partnerships.

- Identify and amend, as necessary, **exclusionary policies and systems**.
- Ensure that **online content is inclusive and representative** of diversity in language and culture, including by supporting capacity building for the development of local and indigenous online content. An important policy in this context is network neutrality.
- **Raise awareness** of the importance of mainstreaming digital inclusion by leveraging international conferences, e.g. Decade for Indigenous Languages, side events at the next Commission for Social Development.
- To help combat stereotypes and promote inclusion, **share more empowering images of women, older persons and other marginalized groups designing and/or using digital technology**. For example, AARP has a partnership with Getty Images on creating and disseminating more positive images of older persons and technology.
- Create **low-threshold learning opportunities for older persons** in their near living environments, as they, after retirement, often lack public learning opportunities and financial support, which predominantly focus on school learning and job-related learning.
- Adopt both a hybrid approach, combining digital and analog technology, and a blended learning approach, combining technology with direct human interaction. Further, the interoperability of various digital communication methods should be explored and ensured, including those across borders, to promote inclusive digital communication.
- Explore the concept of **digital sovereignty**, consisting of the ability to operate tools (usability) to appropriate tools to suit one's own needs and learning style (motivation, meaningful usage).
- **Identify connected and unconnected communities** and involve the unconnected communities in developing specific policies to connect them and address their needs.
- Academic institutions are encouraged to provide training in inclusive ICT design so that ICT students can carry this knowledge into the workforce.
- To ensure the effectiveness of digital inclusion politics, a **twin-track approach** should be applied whereby the specific digital needs of populations in vulnerable situations respectively met through targeted policy measures, while the concerns of these groups should also be mainstreamed into general laws and policies on digital technologies.

Governments are encouraged to:

- Integrate the specific needs of digitally excluded groups into **national digital strategies**.
- Create transparent standards for **interoperable ICTs** which will help provide greater and more affordable access to digital technology.
- Prioritize **digital literacy for all** through the provision of training and life-long learning, particularly for women, persons with disabilities and older persons. This requires promoting in-person training services and inter-generational solidarity, e.g. younger persons training older persons in the use of digital technologies.
- Implement **Universal Design for Learning** to reduce the barriers to digital education by providing reasonable accommodation, while maintaining high achievement expectations for all learners.

- Develop and implement **accessibility standards** and inclusive design principles in digital technologies based on the principles of 'design from the edges' or universal design, that address the needs of particular groups. This should be supported by international organizations with the involvement of civil society and the private sector, including start-ups. In addition, integrate **transparent accessibly standards in their ICT procurement policies**.
- Promote a participatory approach for **inclusive design** based on the needs and opportunities identified by and with specific population groups. Early engagement with universities, researchers and the private sector can help embed multi-stakeholder approaches in the development of inclusive design.
- Create more **inclusive healthcare ICT and guidelines**
- Establish mechanisms to **enhance trust and protect privacy in the use of data**, especially for marginalized and disadvantaged groups, as they may be at special risk of their rights being breached, for example, by improper surveillance, misinformation and disinformation.