General Assembly

Seventy-ninth session
Item 26 (a) of the provisional agenda*
**Social development: implementation of the outcome of
the World Summit for Social Development and of the
twenty-fourth special session of the General Assembly**

Information and digital technologies for advancing social development: opportunities and challenges for improving social policies

Report of the Secretary-General

Summary

    The present report is submitted pursuant to General Assembly resolution 78/174, in which the Assembly requested the Secretary-General to report to it at its seventy-ninth session on the question of ensuring access to and use of new information and digital technologies for advancing social development. The report presents an overview of existing digital divides and policy options to promote meaningful connectivity for all, in particular those living in poverty. It is then focused on how information and digital technologies are used by Governments to enhance the efficiency, effectiveness and inclusiveness of social policies, by drawing references from the fields of social protection, health care and education.

    The report provides the following considerations and recommendations to ensure that the integration of information and digital technologies into social policies is guided by broader development objectives, favours inclusion and social equity, protects human rights and benefits all, while accelerating progress towards the achievement of the 2030 Agenda for Sustainable Development: (a) articulate a digital strategy for integrating information and digital technologies into the design and implementation of social policies; (b) allocate adequate financing and sufficient resources for integrating information and digital technologies into social policies; (c) prioritize a user-centred design for information and digital technologies; (d) ensure that information and digital technologies in social policies are non-discriminatory and inclusive; (e) close digital divides and promote digital inclusion, including by ensuring an inclusive and universal design and hybrid service delivery; (f) provide transparency in the use of information and digital technologies and uphold the right to privacy and data protection; and (g) promote international cooperation and partnerships on digital transformation for social policies.

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I. Introduction

1.   At the World Summit for Social Development, held in Copenhagen in 1995, an international consensus to put people at the centre of development was established. This vision remains relevant to the present day and is at the core of the 2030 Agenda for Sustainable Development and its pledge to leave no one behind.

2.   In the Copenhagen Declaration on Social Development and Programme of Action of the World Summit for Social Development, Heads of State and Government recognized the potential role of new information technologies in fulfilling social development goals and emphasized the need to give access to such technologies for all, in particular those living in poverty and vulnerable situations. Over the past 30 years, information and digital technologies have reshaped how we live, socialize and work. As such, new challenges and opportunities for achieving the objectives of the Declaration and Programme of Action have arisen. Poverty eradication, for instance, cannot be achieved in the absence of policies to bridge digital divides. Estimates indicate that digital technologies could accelerate the achievement of 70 per cent of the targets of the Sustainable Development Goals.[1]

3.   At is fifty-ninth and sixty-second sessions, the Commission for Social Development considered the role of digital technologies in social development and social justice. The Commission emphasized the need to bridge digital divides, including the gender digital divide, and to offer reskilling opportunities for workers in labour markets that had been reshaped by technologies. It also pointed to the role that digital technologies can play in making social policies more efficient and effective.[2]

4.   The present report builds on the previous findings and deliberations of the Commission, as well as other forums and reports, thus serving to examine pathways to promote access to and the use of information and digital technologies by individuals, in particular those living in poverty, and address the use of information and digital technologies by Governments to enhance the efficiency, effectiveness and inclusiveness of social policies. The report, therefore, contributes to the broader discussion on synergies between digital transformation and sustainable development and ways to leverage these synergies to drive people-centred outcomes.

5.   As Member States prepare for the Second World Summit for Social Development in 2025, the topic of information and digital technologies in the context of social development could not be more timely. The report is also intended to contribute to the upcoming World Social Summit by helping to identify opportunities to advance the pledges made in Copenhagen in 1995 and accelerate the implementation of the 2030 Agenda in the digital age.

II. Impediments to universal and meaningful digital connectivity

6.   With services and activities rapidly moving online, bridging digital divides is a precondition for achieving inclusive and sustainable development, including the goals of eradicating poverty and hunger.[3] Access to information and digital technologies

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[1] International Telecommunication Union (ITU) and United Nations Development Programme (UNDP), *SDG Digital Acceleration Agenda* (2023).
[2] See E/2021/26-E/CN.5/2021/9 and E/2024/26-E/CN.5/2024/6; see also E/CN.5/2021/3 and E/CN.5/2024/4.
[3] Food and Agriculture Organization of the United Nations, "Tackling poverty and hunger through digital innovation", August 2018.

and connectivity are no longer a luxury but a prerequisite for working, studying, banking and gaining access to essential services.

7.   Bridging digital divides requires universal and meaningful digital connectivity, so that everyone, everywhere has a safe, satisfying, enriching and productive online experience at an affordable cost.[4] Access to the Internet, however, depends on the availability of certain enablers, including having access to adequate infrastructure and a high-quality, fast and reliable network, as well as owning an Internet-enabled device. Access to both connections and devices must be affordable. Once online, it is necessary that people have adequate digital skills and are able to navigate safely in order to benefit from the many uses of the Internet with minimal risks.

8.   The present section serves to explore the challenges of and pathways to creating universal and meaningful digital connectivity by expanding access to and the use of information and digital technologies in a safe environment.

### Limited Internet access at affordable prices

9.   Availability of coverage is a prerequisite for access. There has been a significant expansion in Internet coverage over the past decade, in particular in low-income countries. Globally, 95 per cent of the population now lives in areas covered by at least a 3G mobile network. However, in low-income countries, only two thirds of rural populations have coverage, compared with almost everyone in urban areas.[5] In order to expand coverage in rural areas, Governments are required to set regulations and incentives that encourage investments in infrastructure and low-cost satellite connectivity.

10.   Notwithstanding the expansion in Internet coverage, a significant proportion of people with coverage do not use the Internet (see figure I). These gaps range from 5 per cent in high-income countries to a staggering 51 per cent in low-income countries.

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[4] Office of the Secretary-General's Envoy on Technology and ITU, "Achieving universal and meaningful digital connectivity: setting a baseline and targets for 2030", 21 April 2022.
[5] ITU, "Facts and figures 2023", World Telecommunication/ICT Indicators database. Available at www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx (accessed on 1 May 2024).

Figure I
Percentage of people using the Internet, not using it despite being covered and those not covered, by country income grouping
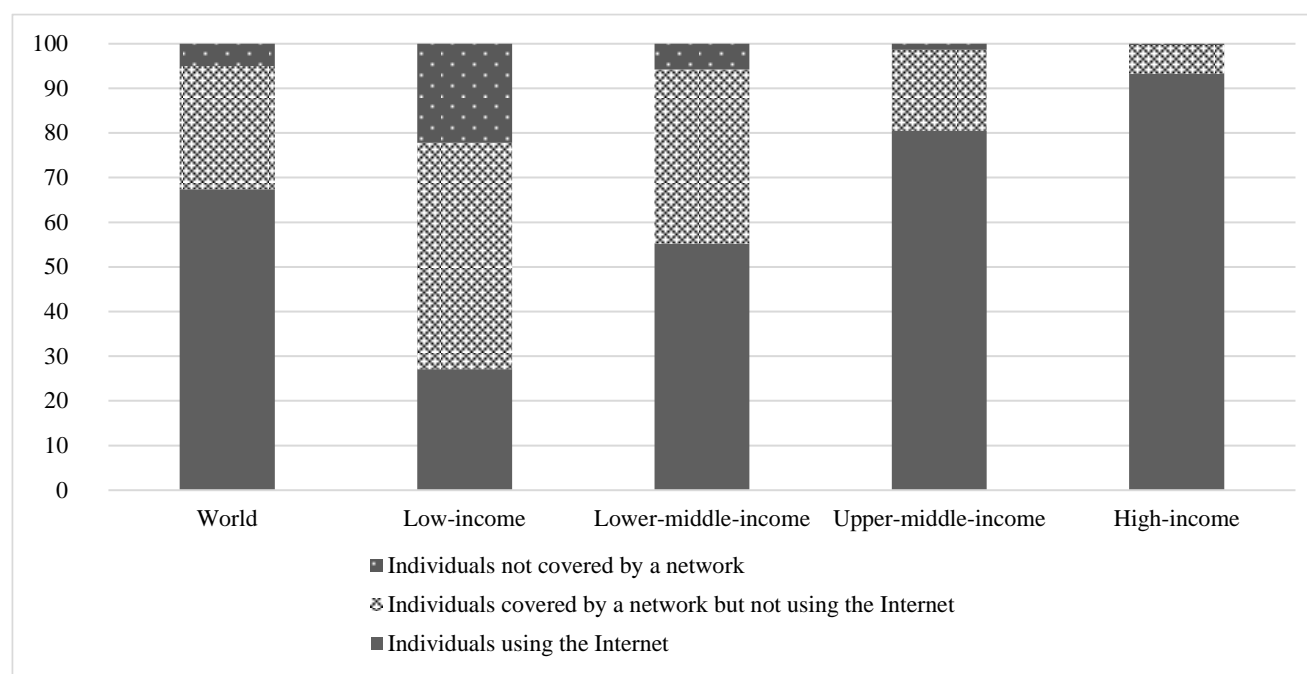
Source: Prepared by the Department of Economic and Social Affairs on the basis of data produced by the International Telecommunication Union (ITU) in "Facts and figures 2023".

Note: All data are estimates by ITU. "Individuals using the Internet" refers to the proportion of the population that used the Internet from any device (including mobile phones) in the previous 12 months. "Individuals not covered by a network" is the share of the population that is not covered by a 3G broadband network or higher. "Individuals covered by a network but not using the Internet" is an estimate of the proportion of the population that does not use the Internet despite having access to coverage, based on the other two figures.

11.   The reasons for these usage gaps vary, but often relate to barriers to meaningful connectivity, such as access to devices. In low-income countries, less than half of the population owns a mobile phone, compared with almost 8 out of 10 worldwide. According to the publication *Measuring Digital Development: Facts and Figures 2023* by ITU, globally, the gender gap in ownership is 6.6 percentage points, but is often significantly larger in least developed countries. Affordability of connectivity is another major challenge. In low-income countries, the price of an entry-level mobile broadband subscription can account for 9 per cent of the gross national income per capita, which is 20 times higher than in high-income countries.[6] To address these challenges, Governments should reduce the cost of broadband access by, for example, cutting taxes on services or subsidizing them for the poorest, in addition to providing free Wi-Fi and free access to devices and broadband in community centres, schools, libraries and other public facilities. Making access to certain websites free of charge (known as zero-rated data connectivity) can ensure that access to education and health services portals and those of other sectors remains affordable for all.[7]

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[6] ITU, *Measuring Digital Development: Facts and Figures 2023* (Geneva, 2023).

[7] United Nations Educational, Scientific and Cultural Organization (UNESCO), *Guidelines for ICT in Education Policies and Masterplans* (Paris, 2022).

Inadequate awareness of the Internet and its relevance

12.   A common reason for people not using the Internet is a lack of awareness of its usefulness. Research has shown that providing people with information on the relevance and importance of the Internet, including activities such as Internet calls and video streaming, often encourages usage.[8] For others, the lack of content in local languages and dominance of the Latin alphabet, including email addresses and domain names, are significant impediments. Making the Internet more inclusive will depend on the relevance and accessibility of content, including by expanding the use of audio and video files or messages for communities with limited literacy or that communicate mainly in oral forms.

Low digital skills

13.   A major hurdle for meaningful connectivity is a lack of digital skills. Evidence suggests that having a lower level of skills limits people's usage and prevents many from going online altogether, in particular older persons.[9] Even in countries with high levels of Internet usage, more than 50 per cent of people report having low digital skills, for example with respect to problem-solving (i.e. downloading software and taking an online course), communication (i.e. sending messages with attached files or making calls over the Internet) and safety (i.e. changing privacy settings or setting up security measures). This indicates that people are not using the Internet to its full potential or are not able to do so safely.[10]

14.   Digital literacy needs to be a part of all modern school curricula in order to provide people with fundamental knowledge and the skills to perform basic activities online, while preparing them for a changing labour market. Formal training can also inform people of the benefits and risks associated with the Internet, including safety and how to recognize misinformation. Globally, however, Internet access in schools is still limited, with around half of all primary and secondary schools remaining offline.[11] The Giga initiative of the United Nations Children's Fund and ITU supports Governments and other partners in connecting all schools across the world. Governments may also rely on community outreach programmes to train those who are no longer in school.

Inadequate online safety, security and freedom

15.   Online data breaches, fraud and phishing pose significant risks to people's online privacy and well-being. Other risks, such as online harassment, bullying and gender-based violence, may discourage people from using the Internet altogether. According to the Organisation for Economic Co-operation and *Development (OECD) report Development Co-operation Report 2021: Shaping a Just Digital Transformation*, in South Africa for example, 22 per cent of women who have a mobile phone but do not use the Internet reported safety and security-related risks as the main reason for doing so. The corresponding share among men was only 5 per cent.

16.   Information and digital technologies have also been shown to have negative impacts on people's mental health. Information overload, digital addictions, harassment and bullying, as well as social comparison and negative interactions magnified by social networks have been associated with mental distress and suicidal behaviour, in particular among girls.[12] Social media platforms have also provided a

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[8] ITU, *Global Connectivity Report 2022* (Geneva, 2022).
[9] ITU, *Measuring Digital Development: Facts and Figures 2023*.
[10] Ibid.
[11] Giga, "Giga annual report 2022", 1 March 2023.
[12] UNDP, *Human Development Report 2021/2022: Uncertain Times, Unsettled Lives – Shaping Our Future in a Transforming World* (New York, 2022).

space for spreading and magnifying misinformation and disinformation, with negative consequences in terms of radicalization and political polarization in many countries. To address these significant challenges, Governments should develop and enforce regulatory frameworks to address the broad range of safety and security risks, with a focus on protecting users' rights online and offline. One such example is the Code of Practice on Disinformation of the European Commission, which promotes the demonetization of disinformation and the implementation of fact-checking. Governments should also provide awareness campaigns to enhance users' skills and understanding of the risks.

17.   Government shutdowns of the Internet and censorship impede the free flow of information and threaten the full exercise of human rights online, including the right to freedom of expression. Governments should avoid recourse to shutdowns, including when seeking to respond to issues of concern online, as they do not address the root causes of such issues in the same way as effective content moderation. [13]

### Persistent digital divides

18.   Lack of access, affordability and skills are the main determinants of "digital poverty".[14] There is a strong association between increasing use of the Internet and higher levels of wealth and education. In fact, for most countries for which data exist, being in the top three wealth quintiles more than doubles a person's chances of using the Internet regularly, compared with being in the bottom two wealth quintiles (see figure II.A). A similar but somewhat less pronounced situation is observed when comparing people with secondary or higher education with those with primary education only (see figure II.B). In other words, groups that are economically and educationally disadvantaged also tend to be digitally disadvantaged.[15] This, in turn, limits their chances of finding opportunities online, such as education, decent work, public services and cultural activities, which can exacerbate further their poverty and social exclusion. People living in rural areas face even higher rates of digital exclusion, with only 50.4 per cent of them using the Internet, as compared with 81.2 per cent of those in urban areas. Addressing digital divides is thus crucial to eradicate poverty and achieve the Sustainable Development Goals more broadly.

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[13] Internet Governance Forum, "IGF 2023 annual meeting summary report", January 2024.

[14] *United Nations E-Government Survey 2022: The Future of Digital Government* (United Nations publication, 2022).

[15] Internet Governance Forum, "IGF 2023 annual meeting summary report".

Figure II
Percentage of people using the Internet, 2014-2022

A.   Comparison by wealth levels   **B.   Comparison by education levels**
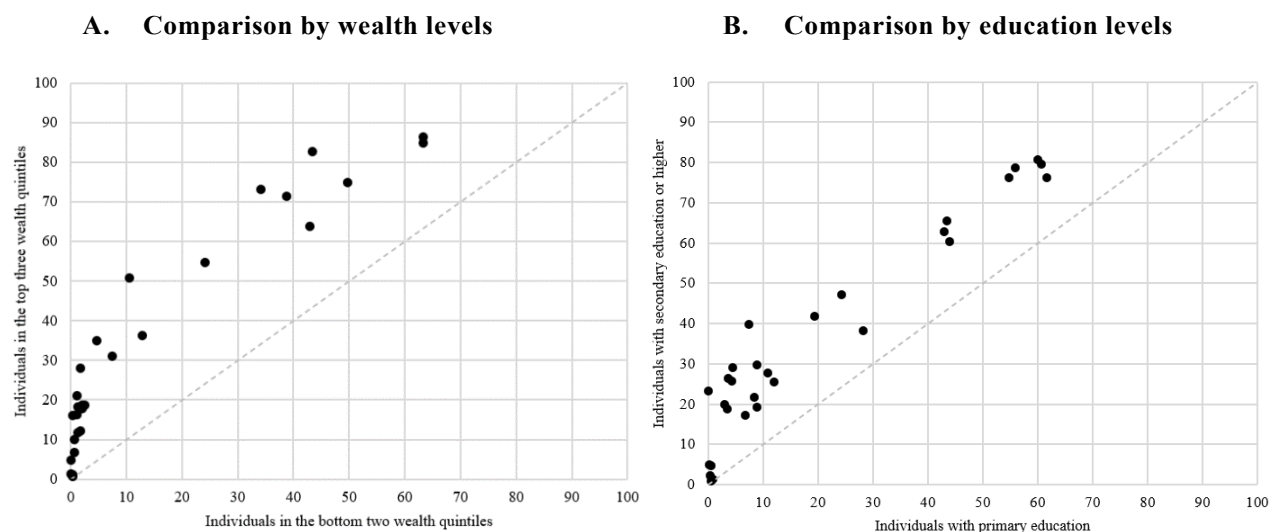
Source: Prepared by the Department of Economic and Social Affairs on the basis of data obtained from Multiple Indicator Cluster Surveys and Demographic and Health Surveys.

Note: Data refer to the proportion of people between 15 and 49 years of age who used the Internet at least once in the past week in 29 countries for which data on Internet use were available. The education and wealth levels refer to those of the head of household. Year refers to the most recent year that data were available for each country between 2014 and 2022.

III.   Leveraging information and digital technologies for social policies

A.   Expanding outreach and enrolment in social services

Mapping of potential beneficiaries

19.   Information and digital technologies play a central role in identifying and reaching the potential beneficiaries of social services and thereby improving access thereto. For example, artificial intelligence can be used to identify populations in remote areas in need of health and education services (see E/C.16/2024/7). Digital tools can also contribute to improving civil registration and vital statistics systems, which are critical for social services, with, for example, the use of mobile phones to update births and deaths registries.

20.   In the absence of an up-to-date census, a growing number of countries are using satellite imagery to support geographic targeting of social protection benefits.[16] In Malawi for instance, as part of its programme for coronavirus disease (COVID-19) urban cash-based intervention, satellite data were used in conjunction with other spatial data sets to identify poor neighbourhoods in need of cash transfers. Furthermore, in Togo, within the framework of its Novissi programme, data on device connectivity and daytime satellite imagery were used for geographic targeting of social services at the canton level.[17]

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[16] Emily Aiken and Tim Ohlenburg, *Novel Digital Data Sources for Social Protection: Opportunities and Challenges* (German Agency for International Cooperation, 2023).

[17] Emily Aiken and others, *Machine Learning and Mobile Phone Data Can Improve the Targeting of Humanitarian Assistance*, NBER Working Paper, No. 29070 (Cambridge, Massachusetts, National Bureau of Economic Research, 2022).

Outreach and awareness-raising of available social services

21. Awareness-raising campaigns, using digital tools, can be better targeted thanks to new sources of data that support direct advertising to eligible groups. For instance, the use of social media to promote digital health through social media is a discrete and low-cost way of reaching people in vulnerable situations and those with stigmatized diseases. Given that misinformation on health issues can be spread on social media alongside accurate content, strategies to combat misinformation and to connect patients directly with health-care providers can mitigate such risks.[18] These tools can also help to raise awareness of the availability of services and how to register for a particular programme.

Registration and enrolment of beneficiaries

22. Digital social registries or beneficiary registries are important tools to support programme enrolment processes. Remote registration can also reduce travel time and transportation costs, which affect rural populations in particular. In many countries, such registries have facilitated the move to universal coverage, as is the case of the Child Money Programme in Mongolia.[19]

23. Interoperability between digital social and beneficiary registries can enhance coordination across services and facilitate registration and enrolment as it allows simultaneous registration for several social protection benefits and minimizes the number of times a person is required to submit documentation to be considered eligible for a programme.

24. Administrative data collected by, for example, tax and social security authorities can provide information about individuals' civil and household status, employment status, income and assets. When different administrative databases are integrated, information from different government sources can be repurposed to support enrolment and eligibility assessments for a service, such as a specific social protection scheme. To remain relevant over time, these administrative databases need to be continuously updated with changes in individuals' circumstances. In Türkiye, the Integrated Social Assistance System, launched in 2010, compiles data from 24 public sector institutions to support its social protection system and currently holds data on almost three quarters of its population.[20]

B. Improving service delivery and outcomes

25. The potential of information and digital technologies, such as videoconferencing tools and online platforms, to enhance the delivery and results of social services in the areas of health care, education and social protection is remarkable. The use of e-learning portals can also facilitate continuous learning and on-the-job training for educators, health workers and administrators, in particular when content is offered in a modular way that allows for the customization of learning paths.

In the area of health care

26. The expansion of telehealth and e-health initiatives have proven to have positive health outcomes, in particular when used as a complement, rather than a replacement,

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[18] Amanda Koh and others, "Digital health promotion: promise and peril", *Health Promotion International*, vol. 36, No. 1 (December 2021).

[19] Madhumitha Hebbar, *Applying the Principles for Digital Development in Social Protection* (German Agency for International Cooperation, 2022).

[20] Emily Aiken and Tim Ohlenburg, *Novel Digital Data Sources for Social Protection*.

to face-to-face services.[21] These initiatives are also increasing access to services and reducing the cost of care and transportation. For persons with disabilities, who are on average older, have a lower income and are less likely to have a regular health-care provider, the reduction in costs as a result of telehealth, including those associated with paid personal assistance services, can increase their access to health-care services, provided that the tools are accessible to persons with disabilities and that patients have adequate connectivity.[22] In the United States of America, during the COVID-19 pandemic, the expanded access to telehealth by the Centers for Medicare and Medicaid Services increased access to health care for people living in poverty.[23] Linguistic minorities can also benefit from being able to find and contact remote physicians.

27. Access to telehealth can also enhance the quality of health-care delivery by, for example, facilitating access to a specialist physician in another area. Provider-to-provider telehealth can offer decision support mechanisms or consultations with other health workers, including for high-complexity procedures such as surgeries. Although provider-to-provider telehealth does not seem to affect patients directly in terms of acceptability or the continuity of treatment, evidence indicates that it has positive impacts on the performance of health workers.

28. The continuity and consistency of patient care can be facilitated by the maintenance of electronic health records. When properly regulated to ensure data privacy and protection and with patient consent, the exchange of health information between different health-care providers can ensure that information on medical history, conditions and treatment is accurate. For example, the International Organization for Migration developed the electronic Personal Health Record (e-PHR) to record the initial health assessments of migrants in both transit and destination countries, as well as their medical treatment thereafter. The record allows medical data to be securely recorded and shared between clinicians and across countries, as migrants and refugees relocate.[24]

29. The use of artificial intelligence in health care is rapidly expanding. The use of wearable technologies, such as wristbands, patches, watches and clothing, can make health care more personalized and preventive. These tools can monitor vital signs, screen for certain conditions, detect symptoms and predict clinical risk and mortality, enabling more preventive and timely health interventions.[25] Artificial intelligence can also improve diagnosis, for example by facilitating early detection using imaging tools (such as X-ray and tomography) or by recognizing speech patterns that can indicate psychotic episodes.

30. Health-care apps and portals can use artificial intelligence to improve patient engagement and adherence to treatment, which are often major barriers to achieving better health outcomes. Tracking medication schedules, managing drugs, self-managing chronic diseases and providing targeted communication are some of the

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[21] World Health Organization (WHO), *Recommendations on Digital Interventions for Health System Strengthening* (Geneva, 2019).

[22] Thiru M. Annaswamy, Monica Verduzco-Gutierrez and Lex Frieden, "Telemedicine barriers and challenges for persons with disabilities: COVID-19 and beyond", *Disability Health Journal*, vol. 13, No. 4 (October 2020).

[23] *World Public Sector Report 2023* (United Nations publication, 2023).

[24] Dominik Zenner and others, "Health and illness in migrants and refugees arriving in Europe: analysis of the electronic personal health record system", *Journal of Travel Medicine*, vol. 29, No. 7 (October 2022).

[25] Stefano Canali, Viola Schiaffonati and Andrea Aliverti, "Challenges and recommendations for wearable devices in digital health: data quality, interoperability, health equity, fairness", *PLOS Digital Health*, vol. 1, No. 10 (October 2022).

functions that can ensure a higher quality and the continuity of care.[26] Artificial intelligence and robotics are also transforming assistive technologies for persons with disabilities and for rehabilitation, with smart homes equipped to assist residents and alert caregivers, as well as devices that support independent living and navigation. The affordability of such technologies, in addition to access to technical support, remain critical challenges for expansion.

In the area of education

31. Education is fundamental for building digital literacy, knowledge and skills. Integrating information and digital technologies into education curricula empowers students to navigate a changing job market as well as social, cultural and economic landscapes that are increasingly digital.

32. The benefits that distance learning has for education and that telehealth has for health care are similar in terms of overcoming geographic, linguistic and other barriers. Digital classrooms provide an opportunity for minority students to connect with teachers who speak the same language. Other tools, such as captions, subtitles and translation apps, can assist migrants in learning a new language.[27] For adults in lifelong learning who wish to finish schooling or need reskilling, information and digital technologies can support flexible learning paths that are adjusted to the learner's availability and priorities.

33. Information and digital technologies also facilitate the inclusion of persons with disabilities in education. For example, StorySign, created by Huawei, is an augmented reality application that uses artificial intelligence to help children with a hearing impairment to read by translating text into sign languages, and the Global Digital Library uses Google Assistant to read books aloud to students with a visual impairment.[28]

34. The personalization of learning pathways is one of the possibilities that are opened up by artificial intelligence, which can improve educational outcomes for all students, including those with a disability. Recent evidence in the fields of neuroscience and learning sciences points to the significant variability in the way that students learn. As such, artificial intelligence-powered intelligent tutoring systems can diagnose specific learning difficulties and provide tailored learning plans, in particular for structured subjects such as mathematics or physics. Other uses of artificial intelligence in education, such as augmented and virtual reality tools, have generated interest, although there is still no evidence of their effects on learning outcomes.

35. An affordable way to gain access to quality teaching materials is through open educational resources. These are usually high-quality learning and teaching materials, which have been released under an open licence, allowing no-cost access, reuse, adaptation and redistribution by others. Common types of open educational resources are free reading materials available through, for example, Worldreader, which has provided more than 18 million children with free books.[29]

36. Web 2.0 tools, which enable online collaboration and the sharing of content, can be integrated into educational contexts. Some collaborative authoring tools, such as

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[26] Ahmed Al Kuwaiti and others, "A review of the role of artificial intelligence in healthcare", *Journal of Personalized Medicine*, vol. 13, No. 6 (June 2023).

[27] Francesca Gottschalk and Crystal Weise, *Digital Equity and Inclusion in Education: An Overview of Practice and Policy in OECD Countries*, OECD Education Working Paper, No. 299 (Paris, OECD, 2023).

[28] UNESCO, *Guidelines for ICT in Education Policies and Masterplans*.

[29] Ibid.

the Google Drive suite of documents, spreadsheets and slides, can be used by teachers to share lesson plans. Videoconferencing tools, such as Microsoft Teams, can support synchronous and asynchronous collaboration, chat and meetings. Learning management systems are collaborative tools developed specifically for education. Some systems, such as Moodle, were initially designed to support classroom-based teaching, through the sharing of additional resources and notes and enabling of forum discussion. Many systems have now expanded their functions to enable live lessons, remote assessment, the monitoring of student performance and more.

In the area of social protection

37. Digitalizing the delivery of benefits makes the transfer of payments to beneficiaries more efficient. It also reduces administrative and transactional costs and improves the accuracy and control of payments. For beneficiaries, digital payments increase predictability, in terms of when they will receive their benefits, and save time, in particular for those in rural populations who may have previously needed to travel to urban areas to collect benefits in person. Digital payments are also safer because collecting cash in person places beneficiaries at risk of robbery and assault. For women, in particular, digital payments – when designed in a gender-sensitive manner – can support their financial inclusion and autonomy to manage household resources.

38. The case of Morocco underscores the potential of digital innovation for the delivery of benefits in rural areas. As of 2018, 37.5 per cent of the population of Morocco lived in rural areas.[30] Within the context of its national strategy for financial inclusion, the Government has piloted a new mobile payment method for the delivery of the Tayssir conditional cash transfer programme.[31] Prior to the launch of the pilot payment option, Tayssir benefits were disbursed mainly by Al Barid Bank, which offers nationwide geographical coverage through its branches and mobile agencies, which enable bank employees to travel to beneficiaries at their place of residence, including in remote areas. The availability of these multiple payment modalities is an important means of improving the delivery of benefits and mitigating inequalities in access to this programme between urban and rural areas, as well as gender- and age-based inequalities within rural areas.[32]

39. In addition, countries are also increasingly using artificial intelligence to support service delivery within social protection systems. Artificial intelligence can be used on digital platforms to help to improve responses to public queries, for instance, by means of intelligent chatbots, voice-based interactions on helplines and the automatic processing of email queries. In Austria, artificial intelligence is used by the social insurance agency to automatically deliver emails to the relevant departments, with up to 93 per cent accuracy.[33]

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[30] *World Urbanization Prospects: The 2018 Revision* (United Nations publication, 2019).

[31] The Tayssir programme provides cash transfers to families with children between 6 and 15 years of age who are enrolled in schools.

[32] Beatriz Burattini and others, *Digital Innovations in Delivering Social Protection in Rural Areas: Lessons for Public Provisioning During the Post-Pandemic Recovery and Beyond* (Food and Agriculture Organization of the United Nations and International Policy Centre for Inclusive Growth, 2022).

[33] Christina Lowe and others, *Pathways toward Digitalization in Social Protection and Labor (SPL) Service Delivery,* Social Protection and Jobs Discussion Paper, No. 2307 (Washington, D.C., World Bank, 2023).

C. Strengthening administrative processes

40.   Digital management systems can improve the efficiency and effectiveness of social services, from the design and implementation stages to monitoring and evaluation. They encompass a broad range of functions, including the management of human resources, equipment and assets, supply chains, facilities and financing. For example, digital tools can be used to track inventories, provide notification of stock levels, forecast demand and manage the distribution of medicines, vaccines, medical supplies and laboratory consumables, which go out of stock more frequently in rural or hard-to-reach areas.[34]

41.   During the COVID-19 pandemic, several countries adopted electronic systems for disease surveillance and tracking. Over 50 countries worldwide utilized the District Health Information System (known as DHIS2), which is an open-source health-management information platform. The modules allowed countries to monitor transmission, detect new cases, conduct risk assessments and aggregate data to guide preparedness and response decisions. User portals enabled patients to make appointments and download vaccination certificates.[35]

42.   Education management information systems enable the collection and aggregation of data to analyse, monitor and optimize educational systems. This allows for an evidence-based approach to policy and practice. When enhanced with artificial intelligence capabilities, education management information systems can provide timely and quality data on educational activities, beyond data on enrolments or education certification, which are usually provided by administrative statistics.[36] For example, OU Analyse, which is a system launched by the Open University of the United Kingdom of Great Britain and Northern Ireland, predicts student outcomes and identifies students at risk of failing. Moreover, the UniTime project uses an artificial intelligence-powered scheduling system that supports universities in creating timetables for courses, managing rooms and providing students with individual schedules. Other tools, such as educational chatbots, provide support to students during admission and enrolment.[37]

43.   A reliable digital administration and governance system helps to avoid the overlap and fragmentation of social protection schemes by promoting coordination and complementarity across benefits and actors. It also supports the grievances and redressal process, which involves examining and addressing complaints, appeals and queries from programme beneficiaries. Online management platforms for beneficiaries and hotlines can provide a valuable means of filing complaints and queries. From the perspective of programme staff, this can help to shorten the loop for feedback from beneficiaries. From the beneficiaries' perspective, it means faster processing and resolution, as well as improved privacy.

IV. Six ways to ensure digital social policies are efficient, inclusive and rights-based

44.   While the potential of information and digital technologies for social policies is immense, there are also significant risks linked to inappropriate design and implementation. These risks include digital exclusion, reduced effectiveness and data protection and privacy violations, among others. Such risks are compounded for

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[34] WHO, *Recommendations on Digital Interventions for Health System Strengthening*.
[35] *World Public Sector Report 2023*.
[36] UNESCO, *Guidelines for ICT in Education Policies and Masterplans*.
[37] UNESCO, "AI and education: guidance for policymakers", April 2021.

population groups in vulnerable situations. To ensure that the use of digital tools in social policies is efficient, inclusive and rights-based, the following six areas should be considered.

A. Articulate a digital strategy and carry out a cost-benefit analysis for the digitalization of social policies

45. Enthusiasm for the use of information and digital technologies in social policies has often led to the proliferation of short-lived initiatives, implemented without evidence-based consideration of their benefits and potential harms. This short-sightedness is sometimes compounded by "techno-solutionism" or the belief that engrained social problems (such as the lack of qualified teachers or health professionals) can be addressed by technological tools alone.[38]

46. It is important that digital tools are part of a clear and broadly agreed sector-wide or Government-wide digital strategy with well-articulated objectives. Information and digital technologies may not be feasible in some contexts, due to issues such as poor network connectivity, inadequate access to electricity and low digital literacy among workers or users. The best outcomes are often achieved when digital tools are used to enhance or augment – rather than replace – human tasks.[39] Political will is central to supporting efforts towards the digitalization of social services. The integration of different databases and shared access between government agencies to certain data that are currently siloed also require political tact and vision.

47. When considering whether to integrate information and digital technologies into the design and implementation of social policies, Governments should analyse the costs and benefits in relation to efficiency, effectiveness, inclusiveness and security. A cost-benefit analysis of digitalization should also consider its impact on the environment. Information and digital technologies, and artificial intelligence in particular, consume significant amounts of electricity. Digital devices are rarely recycled, thus generating e-waste that pollutes ecological systems. In designing their initiatives, Governments should be mindful of their carbon and e-waste footprints, while adopting measures to mitigate such negative impacts.[40]

B. Allocate adequate financing and sufficient resources

48. Digital interventions require adequate financing, trained staff, leadership and governance, access to key supplies and infrastructure.

49. The costs of digital interventions could include those associated with the purchase of software and the collection, integration and storage of data. In terms of artificial intelligence and automation, substantial investments may be required in digital infrastructure, including mechanisms to ensure data protection and the interoperability of data.[41] While multilateral investments can support the digitalization of social policies, they should similarly be based on a comprehensive analysis of its costs and benefits.

50. There will also be a need to employ new dedicated information technology staff, while upgrading the skills of existing staff and users. Officials from legislative and

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[38] UNESCO, *Guidelines for ICT in Education Policies and Masterplans*.
[39] UNDP, *Human Development Report 2021/2022*.
[40] UNESCO, *Guidelines for ICT in Education Policies and Masterplans*.
[41] German Agency for International Cooperation, "Social protection in a pandemic: trends, challenges and technology", June 2022.

judiciary branches may also require training to regulate and adjudicate on the implementation of digital transformation policies. For certain digital tools, substantial knowledge of computer science and machine learning will be required.

C.   Design with the user

51.   Designing digital solutions without the meaningful involvement of the people who will be using them can lead to serious pitfalls. From the perspective of internal administrators, new management information systems may end up not being used if they are considered unhelpful. For instance, teachers may lack the skills needed to use digital tools effectively to enhance the learning experience in the classroom or health-care staff may resent the additional workload associated with maintaining digital health systems.

52.   The success of digital initiatives is rooted in the user-centred design of tools that are easily understood and operated by both the beneficiaries and the administrators. The needs and requirements of both parties should be considered in the design and implementation of any digital solution. Different considerations often apply, for instance beneficiaries typically prioritize digital solutions that are simple, fast and user-friendly, while administrators may value systems that are secure, robust and enable review and monitoring.

53.   In order to design user-centred digital solutions, it is necessary to understand and integrate the needs of all users, but also to develop agile working methods that enable continuous feedback and improvements of the solution.

D.   Ensure non-discriminatory digital tools

54.   Digital identification and decision-making tools, such as artificial intelligence-based algorithms, have tremendous potential in terms of the delivery of social services. However, they also carry the risk of discrimination and inaccuracy as a result of predetermined systemic bias embedded in decision-making algorithms, data sets and models. This is often due to insufficient diversity in software development teams. In the case of artificial intelligence-based algorithms, a key reason for bias lies in the lack of representation of marginalized groups in data sets used to train machine learning models.

55.   Other causes of bias in digital decision-making tools may include discriminatory assumptions in the data sets or models, such as considering foreign status or other individual characteristics as proxies for fraud risk. Discriminatory assumptions can be compounded by the risk of automation bias, whereby workers may trust an automated system so much that they ignore other sources of information.[42] The unintended consequences could range from undue exclusion from a social protection benefit to an incorrect diagnosis or treatment in a health system.

56.   To limit data-driven and algorithmic bias, programme designers can carry out fairness audits to test for algorithmic bias. Should such audits reveal systemic discrimination against disadvantaged groups, corrective steps can be taken, for instance, by adjusting the digital data sets used to train predictive algorithms by reweighting underrepresented groups or gathering data via non-digital means for groups that have been excluded because of a lack of connectivity.

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[42] Amnesty International, "Briefing: social protection in the digital age - a summary of the human rights risks of digital technologies in social protection systems", March 2024.

E. Ensure that no one is left behind

57. Technology should be designed with inclusivity in mind. This imperative should permeate each stage of the delivery chain, from access and delivery to monitoring and evaluation. Special caution should be taken to ensure that disadvantaged groups are not excluded because of underlying bias or structural inequalities.

58. Consideration should be given to the different levels of connectivity of users when designing online portals and other digital tools. People living in poverty often have restricted access to a high-speed connection and, in low-income countries, mobile phones are mostly used to connect to the Internet. Ensuring that service websites are accessible by mobile connection and do not require a high bandwidth make access more inclusive.

59. Online platforms, hotlines, text and chat options should also be adapted as necessary to include population groups in vulnerable situations, by taking, for example, local languages and accessibility into account. Integrating a disability perspective into the design of tools could have prevented the challenges that many students with disabilities faced while participating in remote learning during the COVID-19 pandemic.

60. Digital access to social programmes should be complemented by non-digital access for beneficiaries who do not have access to digital tools, notably by integrating online and offline options. Digital tools for service delivery should also be complemented by analogue channels, such as hotlines, call centres, in-person service centres and house visits. Governments should also work in collaboration with rural organizations, including farmers associations, persons with disabilities, Indigenous Peoples' groups or women's groups, among others, to support the inclusion of all.[43]

F. Uphold the right to privacy and data protection

61. While the digitalization of social policies has progressed rapidly, especially in low- and middle-income countries, laws to uphold the right to privacy and data protection have not kept up. While some countries have comprehensive legal frameworks governing digital data, such as the General Data Protection Regulation of the European Union, in others, such frameworks are still nascent. As of April 2024, 71 per cent of all countries globally had legislation in place to secure the protection of data and privacy. In least developed countries, however, only 48 per cent of them had legislation in place.[44] Moreover, even when such legislation is in place, it may not be consistently applied.

62. A lack of solid legal and policy frameworks to ensure data privacy and security raises the risk of hacking and the misuse of private and sensitive information. Moreover, risks to data integrity, such is the case when the unauthorized alteration of data occurs, may jeopardize access to and the quality of services provided.

63. From the perspective of the intended beneficiaries, a lack of trust in the ability of government authorities to provide such guarantees may result in them refusing to

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[43] Beatriz Burattini and others, *Social Protection Response to COVID-19 in Rural LAC: The Potential of Digitalisation to Build Back Better*, Research Brief, No. 84 (Brasilia, International Policy Centre for Inclusive Growth, 2022); Lucas Sato and others, *Social Protection Response to COVID-19 in Rural LAC: Protection and Promotion of Employment in the Agricultural Sector*, Research Brief, No. 83 (Brasilia, International Policy Centre for Inclusive Growth, 2022).

[44] See https://unctad.org/page/data-protection-and-privacy-legislation-worldwide.

submit the personal information necessary for enrolment or providing inaccurate information, thereby jeopardizing the quality of the eligibility assessment.

64. Establishing a data governance framework can help to define who is responsible for the data, what data to collect and the mechanisms for governing the framework. Systems should also be designed to ensure that all populations can provide informed consent and that there is security against the unauthorized access to and use and disclosure of data.

65. States have the responsibility to ensure transparency with respect to the use of information and digital technologies by clearly communicating to beneficiaries the types of data being analysed and how they are used in decision-making and service delivery, in a manner that is easy to understand and accessible. This also includes providing information about how a system functions (including the identity of the organization conducting the analysis), the criteria used as part of the decision-making process, the services and benefits provided and the appeals procedures in place.[45]

66. Multilateral cooperation can facilitate the exchange of good practices, while international frameworks on information and digital technologies may support Member States in developing policies and standards at the national level. In September 2024, the Summit of the Future will be an opportunity to develop a global digital compact that will set out the principles, objectives and actions for advancing an open, free, secure and human-centred digital future, which is anchored in universal human rights and enables the attainment of the Sustainable Development Goals.

V. Conclusion and recommendations

67. **Information and digital technologies can serve as a key instrument for accelerating progress towards implementing the objectives of the Copenhagen Declaration on Social Development and the Programme of Action of the World Summit for Social Development and achieving the 2030 Agenda. Social protection, health care and education can be made more efficient, effective and inclusive, provided that Governments take the necessary steps to ensure that digital transformation is implemented in an evidence-based, rights-based, people-centred, transparent and inclusive manner.**

68. **Digital divides, however, limit the potential contribution of digital transformation to the implementation of the above-mentioned objectives and achievement of the 2030 Agenda. The reliance on remote education during the COVID-19 pandemic widened educational gaps. Where information on and the registration and application process for social protection benefits are online, large groups of people without an Internet connection and digital skills are excluded. Furthermore, digital health care has resulted in people living in poverty and those who need it the most being left behind.[46] Unless consistent measures are taken to ensure meaningful connectivity for all, the digitalization of social policies will result in increased inequalities that leave more people behind.**

69. **Action is needed at the national, regional and international levels to bridge digital divides and to fully connect people living in poverty and in developing countries. Upcoming forums, such as the Summit of the Future, the Fourth International Conference on Financing for Development and the Second World Summit on Social Development, provide opportunities for enhancing**

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[45] Amnesty International, "Briefing: social protection in the digital age".

[46] WHO, *Equity within Digital Health Technology within the WHO European Region: A Scoping Review* (Copenhagen, 2022).

international cooperation for a digital transformation that is inclusive and supports the achievement of the Sustainable Development Goals for everyone, everywhere.

70. **Member States may therefore wish to consider the following recommendations:**

(a) **Articulate a digital strategy for integrating information and digital technologies into the design and implementation of social policies and anchor it in the principles of inclusivity, equality and social justice and consider the benefits, harms, acceptability, feasibility, use of resources, environmental impact and equity of the social policies; carry out an analysis of the costs and benefits of the digitalization of social policies in relation to efficiency, effectiveness, inclusiveness and security and the impact on the environment;**

(b) **Allocate adequate financing and sufficient resources for integrating information and digital technologies into social policies, including for investments in digital infrastructure and the training of staff;**

(c) **Prioritize the user-centered design of digital tools for social policies in line with the needs of both the beneficiaries and administrators and incorporate diverse perspectives and expertise at all stages, from design to evaluation;**

(d) **Ensure that information and digital technologies in social policies are non-discriminatory and inclusive, with a special focus on preventing underlying bias or structural inequalities, including by ensuring that algorithmic machine learning models are fair and inclusive;**

(e) **Close digital divides and promote digital inclusion by promoting universal and meaningful digital connectivity and addressing the challenges of coverage, affordability, awareness, relevance and digital skills, with a particular emphasis on connecting people living in poverty and bridging the gender digital divide, and also by ensuring the inclusive and universal design of information and digital technologies for social policies and delivering a hybrid service by complementing digital access to social programmes with non-digital means to ensure that no one is left behind;**

(f) **Uphold the right to privacy and data protection by establishing a data governance framework with clear guidelines that is backed by a strong legal framework for data-sharing and provide transparency in the use of information and digital technologies by communicating, in a clear, easy-to-understand and accessible manner to all potential beneficiaries, the types of data being used in the decision-making process and service delivery;**

(g) **Promote international cooperation and partnerships on digital transformation for social policies, including by supporting low- and middle-income countries in bridging digital divides, developing regulatory frameworks on information and digital technologies and strengthening multilateral investment in the digitalization of social policies.**

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