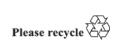**General Assembly**

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Human rights bodies and mechanisms

Possible impacts, opportunities and challenges of new and emerging digital technologies with regard to the promotion and protection of human rights

Report of the Human Rights Council Advisory Committee∗

　　∗　Agreement was reached to publish the present report after the standard publication date owing to circumstances beyond the submitter's control.

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Contents

I. Introduction

1.   Pursuant to Human Rights Council resolution 41/11 on new and emerging digital technologies and human rights,[1] the Advisory Committee has prepared the present report on the possible impacts, opportunities and challenges of new technologies with regard to the promotion and protection of human rights, including mapping of relevant existing initiatives by the United Nations and recommendations on how human rights opportunities, challenges and gaps arising from new technologies could be addressed by the Council and its special procedures and subsidiary bodies in a holistic, inclusive and pragmatic manner. The coronavirus disease (COVID-19) outbreak, which the World Health Organization declared a public health emergency of international concern in March 2020, has affected every country and has revealed some potentially severe human rights implications arising from the use of new technologies. In the present report, the Advisory Committee aims to address the international community's heightened need to establish appropriate guidelines for new technologies and human rights.

2.   The drafting group was established at the twenty-third session of the Advisory Committee, held from 22 to 26 July 2019, and is currently composed of Buhm-Suk Baek (Rapporteur), Milena Costas Trascasas, Iurii Alexandrovich Kolesnikov, José Augusto Lindgren Alves, Xinsheng Liu, Ajai Malhotra, Mona Omar, Javier Palummo, Elizabeth Salmón (Chair), Dheerujlall Seetulsingh and Catherine Van de Heyning.[2] In accordance with Human Rights Council resolution 41/11, a questionnaire was sent to stakeholders, including Member States, international organizations, relevant special procedure mandate holders and treaty bodies, civil society organizations and businesses. As of April 2021, more than 100 responses were received, including 19 from States, 1 from the European Union, 4 from special procedure mandate holders, 1 from the United Nations Children's Fund (UNICEF), 3 from national human rights institutions, 31 from civil society organizations and 8 from academic institutions.

II. Conceptual framework and datafication cycle

3.   Throughout the present report, the term "new technologies" is used to refer to technological innovations that transform the boundaries between virtual, physical and biological spaces. They include new technologies and techniques for datafication (the process of transforming subjects, objects and practices into digital data), data distribution and automated decision-making, such as artificial intelligence, the Internet of things, blockchain technology and cloud computing, among others.

4.   In order to discuss the human rights impacts of new technologies, it is necessary to clarify several essential assumptions. First, it is an oversimplification to argue that technologies are inert or neutral and that any negative consequence of their use is purely the result of human misuse. Technologies, not just their users, affect human rights because they influence policymaking and can restrict individual liberties. A growing body of scholarship in the field of science and technology studies confirms that technical artefacts often embody the values and biases of the organizations or individuals that create them.[3] Moreover, there is also an increasing awareness of how technologies can exercise a subtle but powerful regulatory effect on human societies.[4] It is of utmost importance to prevent intentional bias

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[1] In the present report, "new technologies" is used as a shorthand for "new and emerging digital technologies".

[2] Changrok Soh, former member of the Advisory Committee, was the Rapporteur leading the drafting of the present report until his term ended on 30 September 2020.

[3] Andrew Feenberg, *Transforming Technology: A Critical Theory Revisited* (Oxford, Oxford University Press, 2002), Bruno Latour, *Aramis or the Love of Technology* (Cambridge, Massachusetts, Harvard University Press, 1996) and Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (New York, Crown, 2016).

[4] Lawrence Lessig, *Code: Version 2.0*, 2nd ed. (New York, Basic Books, 2006) and Roger Brownsword, "In the year 2061: from law to technological management", *Law, Innovation and Technology,* vol. 7, No. 1 (2015).

from being built into technologies and the consequent unintentional results.[5] The long-term impact of the misuse of such technologies on democratic processes and the rule of law, particularly if misused for social control purposes, cannot be underestimated.

5. Second, the impact of technological systems on human rights cannot be understood or addressed in isolation. Problems are not caused by one type of technology but by broad waves of innovation sweeping across many areas of human knowledge, a process variously referred to in the popular media as the fourth industrial revolution, convergence or digital transformation. Therefore, in the present report the general term "new technologies" is employed to better capture the multifaceted nature of these changes. An integrated approach is critical because genuinely transformative circumstances arise when multiple technical capabilities are delicately woven together.[6]

6. A common feature of new technologies is that they enable and accelerate the synchronization of offline and online spaces. A technical term for this process is the "physical-digital-physical loop", which refers to the flow of data from the real world to the Internet and then back again into the real world.[7] Businesses are at the forefront of creating these loops because they enable greater flexibility, such as predictive maintenance in smart factories, but the basic practice promises to revolutionize private life, public institutions, warfare and human rights advocacy too.

7. In the present report, the physical-digital-physical loop is referred to as the datafication cycle, which is characterized by three distinct stages: datafication, distribution and decision-making. New technologies are synergistically involved at each stage of the cycle, as illustrated below:

(a) The first stage involves the translation of real-world objects into digital traces through the use of the Internet, smartphones, the Internet of things, drones, biometrics and wearable technology;

(b) The second stage involves the distribution and transfer of digital information within and among organizations and/or the rearrangement of data in novel ways. At this stage, several technologies may be utilized, including cloud computing, unstructured datasets, blockchain technology, augmented reality and the Internet of things;

(c) The third stage involves decision-making, which is what happens when digital traces are used to design policies or take decisions that have an impact on people in the real world through algorithmic decision-making, automated systems or human-in-the-loop systems.

8. The term "new technologies" also refers to a breadth of responses on many different types of systems, including robotics, automation, wireless waves, predictive analytics and various types of information and communications technology (ICT) that are present at different stages of the datafication cycle. Therefore, addressing new technologies in a comprehensive manner makes it possible to better understand how the various challenges and opportunities associated with them are interrelated. Understanding this interrelatedness is essential because the goal is not to halt the spread of new technologies but to provide a basis for ensuring that the benefits of new technologies are promoted while their potential negative impact on human rights is mitigated.

9. Although the focus of the present report is on civilian applications of new technologies, various salient human rights concerns surround their use in armed conflict, especially the use of drones and autonomous weapons. In 2012 and 2013, the Special Rapporteur on extrajudicial, summary or arbitrary executions held discussions on remotely controlled weapons, thereby effectively raising awareness on the subject.[8] Since then, several informal and formal meetings have been held on the issue. Although some papers are already

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[5] Molly K. Land and Jay D. Aronson, eds., *New Technologies for Human Rights Law and Practice* (Cambridge, United Kingdom, Cambridge University Press, 2018).

[6] Adam Greenfield, *Radical Technologies: The Design of Everyday Life* (New York, Verso, 2017).

[7] Mark Cotteleer and Brenna Sniderman, *Forces of Change: Industry 4.0* (Deloitte Insights, 2017).

[8] A/HRC/23/47. For more information on the issue of autonomous weapons, see www.un.org/en/un-chronicle/role-united-nations-addressing-emerging-technologies-area-lethal-autonomous-weapons.

available on that subject, expert attention should be given to the preparation of a specific study on the effects of new technologies used for military purposes on humanitarian efforts, with proper recommendations to States.

III. Contribution to the protection and promotion of human rights

10.   New technologies have great potential to support the exercise of individual rights and freedoms. First, their augmented communicative power significantly expands users' capacity to communicate and share ideas globally, contributing to the realization of human rights and fundamental freedoms. Second, new technologies can empower individuals by directly augmenting their capabilities in the real world. For example, without new technologies, it would have been impossible to balance physical isolation and maintain economic and social activities during the COVID-19 pandemic. Such opportunities are expected to benefit everyone, including those in vulnerable situations, such as women, children, persons with disabilities and refugees.

11.   The capacity that new technologies have to enhance communications can contribute to the exercise of the rights to freedom of expression and association, protected under articles 19 and 20 of the Universal Declaration of Human Rights. New technologies have led to the creation of social media platforms with user-friendly interfaces and multiple means of instant communication for members of the public to express their opinions and to coordinate and organize their actions, thereby facilitating the free assembly and association of like-minded individuals.[9]

12.   A major benefit of new technologies is their potential to empower individuals and groups in the physical world through new tools such as automation, predictive analytics and robotics. For example:

(a)   New technologies can make public services more effective, cheaper and more participatory and enhance democratic citizenship by strengthening pluralist debates, facilitating joint positions and allowing transparent and democratic decision-making processes;

(b)   Accessible technologies can secure digital space for civil society, which can therefore benefit directly from new technologies. Furthermore, the emergence of accessible new technologies has strengthened civil society groups' networking potential and provided opportunities for empowering minority groups seeking to participate in public affairs;

(c)   While posing new risks and invisible threats for human rights defenders, new technologies also enable better advocacy and more effective promotion and protection of human rights on the ground. Digital spaces are powerful platforms for spreading or reporting on good practices, empowering individuals, reporting abuse and mobilizing support. New technologies can help monitor and prevent the persecution of people, thereby significantly contributing to the protection of the right to life. The acquisition of satellite images has also made it possible to document human rights violations.[10] Furthermore, digital tools are used to identify and address human rights violations such as discrimination and harassment, including sexual harassment, in the workplace;[11]

(d)   New technologies can empower victimized groups by effectively addressing their specific needs. As re-establishing and preserving identities is key to ensuring refugees' protection, the Office of the United Nations High Commissioner for Refugees has developed a new biometric identity management system for better registering and protecting people, verifying their identity and targeting assistance.[12] Facial recognition technologies may also be used to reunify families;[13]

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[9]   A/HRC/41/41.

[10]   Response of the European Union.

[11]   Response of the Advocate of the Principle of Equality of Slovenia.

[12]   See www.unhcr.org/550c304c9.pdf.

[13]   Responses of the European Union and the American University of Paris.

(e) New technologies also have the potential to advance gender equality, for example by increasing women's access to education. New technologies provide broader access to educational tools, such as e-learning, which can help women in developing countries to realize their right to education;[14]

(f) New technologies are expected to have a powerful impact on health and welfare. Medical robots, ICT, virtual reality and artificial intelligence are useful in diagnosis, surgery, rehabilitation and prosthetics.[15] New technologies can foster greater inclusion and participation in all spheres of life by compensating for impairments and health-related challenges. According to the World Federation of the Deaf, new technologies foster inclusive education for deaf children. Remote telepresence robots, which are robots that combine videoconferencing with mobile robots, and companion-type robots enhance social interaction, especially for those living alone or residing in remote or rural areas.[16] Furthermore, virtual visits through new technologies such as virtual reality and telemedicine could reduce the inconveniences caused by distance and expand access to medical services to a bigger spectrum of the population, preventing the potential social exclusion of individuals.[17] It is expected that technologies such as assistive devices and built-in environmental applications will enhance the standard of living of older persons by monitoring vital signs and symptoms that could lead to early interventions.[18] Assistive devices may also offer personalized alternative communication solutions, minimize linguistic or cultural barriers and even help people build communication skills.[19]

13. Thus, for the data collected by new technologies to have a meaningful impact on individuals' lives, technologies should be designed with a sound understanding of the international human rights framework and other legal principles.[20] However, not all technologies are initially designed to protect and promote human rights. Even if popular social media sites or other digital tools prove useful for documenting human rights abuses,[21] we need to be conscious of potential loopholes. The whole business ecosystem should abide by the human rights framework to protect and promote human rights.[22]

IV. Challenges: potential violations of human rights through the use of new technologies

14. While new technologies have great potential to contribute to the protection and promotion of human rights, they also pose significant challenges to human rights.

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[14] Haruna Sekabira and Matin Qaim, "Can mobile phones improve gender equality and nutrition? Panel data evidence from farm households in Uganda", *Food Policy,* vol. 73 (2017).

[15] See, for example, https://ec.europa.eu/digital-single-market/en/content/rgs-reaching-out-brain-recovery-through-serious-gaming and www.i-prognosis.eu.

[16] Stephanie Baisch and others, "Acceptance of social robots by elder people: does psychosocial functioning matter?" *International Journal of Social Robotics*, vol. 9, No. 2 (2017), pp. 293–307.

[17] Christian Siegel and Thomas Ernst Dorner, "Information technologies for active and assisted living: influences to the quality of life of an ageing society", *International Journal of Medical Informatics*, vol. 100 (2017), pp. 32–45.

[18] Tom Sorell and Heather Draper, "Robot carers, ethics, and older people", *Ethics and Information Technology*, vol. 16 (2014), pp. 183–195; www.who.int/disabilities/technology/en; Sebastian T.M. Peek and others, "Factors influencing acceptance of technology for aging in place: a systematic review", *International Journal of Medical Informatics*, vol. 83, No. 4 (2014), pp. 235–248.

[19] Ibid.

[20] Response of eyeWitness to Atrocities.

[21] Some social media platforms have made efforts to prevent gender-based violence online by addressing systemic inequalities. Nicolas Suzor and others, "Human rights by design: the responsibilities of social media platforms to address gender-based violence online", *Policy and Internet*, vol. 11, No. 1 (2018).

[22] See, for example, the Guiding Principles on Business and Human Rights (A/HRC/37/31, annex).

A. Datafication resulting in a loss of privacy and the need to protect personal data

15.   Violations of the right to privacy may result from excessive datafication by new technologies. Protecting the right to privacy, including in respect of personal and confidential data, from accidental or negligent leaks is essential. Ensuring the privacy of users of new technologies is vital, as doing so enables individuals to enjoy other fundamental human rights, while infringements hamper their enjoyment of human rights.[23] Threats to privacy should not be dismissed as the inevitable price of progress because this would weaken the entire human rights framework.

16.   New technologies have spawned products and services that are tailored to the particular characteristics and preferences of the individuals they interact with. The tailoring of these products and services has created unprecedented access to personal information.[24] Thus, concern about the collection and use of personal data has increased. New technologies collect data about individuals' whereabouts, personal interactions, habits and consumption and viewing patterns that are then transferred to companies and States. In many cases, the collection of such information happens without the full knowledge of the individuals concerned. It is often too complicated for the average user to understand the data processing algorithms of digital services. Nevertheless, personal information is often used to influence not only shopping and consumption decisions but also political decisions. Not acquiring the fully informed consent to use personal data threatens both the privacy and the free and informed decision-making of individuals.[25]

17.   Moreover, private medical and health data uploaded online should be handled carefully.[26] With the rapid spread of COVID-19 worldwide, Governments have collected their citizens' private health and personal data. The Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression has raised concerns that some efforts to combat the COVID-19 pandemic may be failing to meet the standards of legality, necessity and proportionality.[27] Considering the gravity of the pandemic, Governments' surveillance of individuals' health may lead to the right to privacy being somewhat compromised. Still, the critical question of the extent to which Governments should have access to personal information remains.

B. Cybersecurity and integrity

18.   As digital systems become more pervasive and deeply integrated into our economic, social and political lives, there is a pressing need to ensure that they function as designed, without the interference of outside actors. Poor cybersecurity may lead to severe violations of the right to privacy. For example, smart homes and wearables, among other smart devices, that help citizens lead more convenient lives may create new risks for them. Hacking can reveal individuals' identities, threaten their right to privacy and even reveal when they are at home alone, making them vulnerable to burglary and other crimes.

19.   Business and governance models that rely on user data are not easily reconciled with protecting individuals' right to privacy and minimizing the disclosure of personal data online. Although many engineers concede that there is a need for cybersecurity, new technologies and business models are purposely designed to collect, share and use personal data to influence consumers' purchasing decisions. As datafication cycles become more granular, this influence will steadily grow, potentially threatening the autonomy of the mental agency of users. Artificial intelligence systems too challenge the right to privacy because their purpose is to ingest as much data as possible. A methodology that can violate users' right to

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[23] Response of the Special Rapporteur on the right to privacy.
[24] Australian Human Rights Commission, *Human Rights and Technology Issues Paper* (Sydney, 2018), p. 15.
[25] Response of the Ministry of Local Government and Modernization of Norway.
[26] Responses of the Special Rapporteur on the right to privacy and the University of Essex.
[27] A/HRC/44/49.

privacy through the use of artificial intelligence prediction and inference capacities adds to the concerns.[28]

C. Quality and authenticity of information

20.   The digital revolution has radically transformed the traditional media ecosystem, which is anchored in the centralized control of radio and television broadcasts. Information is now shared more cheaply and faster, but it is also increasingly difficult to separate it from misinformation. The Internet has profoundly changed the way media content is produced and experienced. People obtain most of their news and other information online, through social media websites and blogs, and invest in it minimal time and funds. The rise of new actors in the media ecosystem has started to eliminate traditional journalistic filters of accuracy. New technologies have made it ever more challenging to maintain and assess the authenticity of the information. For example, the use of "deep fakes" leads the public to be misinformed and violates individuals' autonomy, as what is real and what is fake becomes very difficult to discern. Moreover, the dissemination of misinformation, false information and so-called fake news by private and public agents against adversaries on the Internet, while fostering a discourse of hatred, has become so common that it tends to be seen as a regular tool by individuals, groups, political parties and Governments.[29]

D. Radicalization, segregation and discrimination

21.   New technologies easily enable the rapid spread of hate speech, resulting in radicalization, segregation and discrimination. Recent research has found that online hate speech is an early warning sign of persecution, which can trigger hate crimes based on gender, religion, ethnic origin or language, among other grounds.[30] Digital media and social networking are intensifying hate speech and the dissemination of hateful ideas. In response, some social media platforms are taking action by identifying statements that could instigate violence. These trends demonstrate the growing difficulty of creating and defending accurate and credible information in a complex world of real-time and multidirectional information flows.

22.   Even when unintended, artificial intelligence decision-making may result in discriminatory outcomes if the decision-making is based on biased algorithms. In theory, automated decision-making could help businesses and public agencies be more responsive and provide tailored services to citizens and consumers. However, in practice, serious questions are raised about the quality of this decision-making. Many respondents agree that automated decision-making using predictive algorithms in law enforcement agencies and the judiciary is highly likely to result in discrimination because of in-built biases against minorities and vulnerable groups.[31] In machine learning, discriminatory data may perpetuate discriminatory patterns and negatively affect individual rights, especially in respect of health data. A very similar problem is observed in discriminatory hiring practices and in credit scoring. As public and private organizations seek to use automated tools to provide cheaper and faster services, rigorous human rights due diligence of these tools is essential.

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[28] New Zealand Human Rights Commission, *Privacy, Data and Technology: Human Rights Challenges in the Digital Age* (May 2018), p. 45.

[29] Since the expression "fake news" is often used to discredit journalists, in less specific parts of the present report more neutral terms – "misinformation" and "disinformation" – have been used, as recommended by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in its handbook for journalism education and training. See UNESCO, *Journalism, Fake News and Disinformation: Handbook for Journalism Education and Training* (Paris, 2018), p. 14.

[30] Response of the European Union. See also the code of conduct on countering illegal hate speech online (https://ec.europa.eu/info/policies/justice-and-fundamental-rights/combatting-discrimination/racism-and-xenophobia/eu-code-conduct-countering-illegal-hate-speech-online_en).

[31] Christopher Knight, "Automated decision-making and judicial review", *Judicial Review*, vol. 25, No. 1 (2020).

E. Disempowerment and inequality

23.   Although the empowerment of citizens and vulnerable groups was cited as one of the benefits of new technologies, disempowerment is also possible. The recent COVID-19 crisis and physical distancing measures have made people even more dependent on the Internet, accelerating the digital divide between developed and developing countries and within societies. As the Internet becomes the primary method of communicating and gaining access to information, vulnerable populations lacking digital access are even more at risk of having their health and human rights violated. Technology-fuelled empowerment is likely to continue to be uneven, aggravating existing inequalities and creating new forms of vulnerability.

24.   Automation is likely to have social and economic consequences that are different for women and men, with significant implications for socioeconomic equality and the global gender gap. The kinds of jobs that are expected to prosper in the coming years will require a higher level of education, the intensive use of social and interpretative skills and at least a basic knowledge of ICT. On the other hand, some jobs are at risk of being lost to automation. Furthermore, new technologies can lead to economic inequality, resulting in consequences for individual and communal participation in social, cultural and political life, and workers in the new technologies industry may initially suffer from a lack of protection from conventional employment law, which could expose them to poor working conditions, low pay and precarity.

F. Mass surveillance and overreaching Internet regulation

25.   Illegal and arbitrary forms of mass surveillance involving the indiscriminate monitoring of the entire or a significant portion of the population may emerge.[32] All too often, surveillance is conducted without appropriate safeguards, which impinges unreasonably on the privacy and reputation of innocent people and harms the democratic norms of society. Besides, new technologies enable companies and Governments to increase surveillance in workplaces, which can intimidate workers and obstruct the independent operations of trade unions.

26.   Paradoxically, digital spaces are also used to curtail the rights to freedom of expression, access to information and freedom of peaceful assembly. Governments restrict rights by shutting down Internet services or selectively blocking access to online resources, censoring media outlets and persecuting people for expressing their opinions online. A study has found that some Governments have denied citizens access to the Internet, blocked sites, pressured Internet service providers to lower protections, created backdoors for intelligence services and blocked the online participation of non-governmental organizations.[33] The United Nations High Commissioner for Human Rights observed in 2018 that "the Internet is increasingly a space of threat for human rights defenders".[34]

G. Cyberviolence

27.   New technologies have created novel capabilities for human rights violators.[35] There is a growing danger that various non-State criminal groups and individual criminals will use these new capabilities to violate human rights. New technologies have also created

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[32] See, for example, European Court of Human Rights, *Big Brother Watch and others v. the United Kingdom*, Applications No. 58170/13, No. 62322/14 and No. 24960/15, judgment, 13 September 2018.

[33] Elizabeth Farries, "Spying on dissent: surveillance technologies and protest" (International Network of Civil Liberties Organizations, June 2019).

[34] See www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=23874.

[35] In his strategy on new technologies, published in September 2018, the Secretary-General points out that new technologies hold the potential to generate more inequality and more violence and warns against an increase in cyberattacks not only among States but also from non-State armed and criminal groups and individuals. See www.un.org/en/newtechnologies/.

unprecedented criminal challenges such as sexual exploitation, sextortion and non-consensual distribution of intimate images, copyright infringements, financial extortion, harassment and cyberbullying and the dissemination of illegally taken photographs and video recordings.

28.   The Special Rapporteur on the right to privacy has pointed out that new technologies have amplified some forms of gender abuse.[36] Although domestic violence and abusive behaviour towards women and individuals of diverse gender identities existed before the emergence of new technologies, the frequency and seriousness of cybermisogyny and other forms of cyberabuse have become amplified by new technologies.[37] The Special Rapporteur on violence against women, its causes and consequences, too has underlined that women and girls are being subjected to online violence.[38]

V. Progress by the United Nations and the international community

29.   The United Nations and the international community have made progress in understanding and responding to the issues related to new technologies and identifying two main categories of best practices. The first category involves safeguards and preventive measures to ensure that new technologies are not being misused. These efforts include enacting national laws and making preliminary attempts to regulate and apply existing international laws, including human rights norms, to new technologies. The second category consists of ongoing efforts made by States, United Nations entities and international organizations to utilize new technologies to protect and promote human rights.

A. Best practices at the national and regional levels

30.   Many of the respondents to the questionnaire sent to stakeholders for the preparation of the present report have suggested that the current rate of innovation is outpacing States' ability to keep abreast of the latest technological developments and potential societal impacts. Therefore, States need to share their innovative legal and policy measures so that the international community can deal with human rights risks arising from new technologies.

31.   Some legal and policy safeguards for protecting privacy and personal data have been implemented successfully. For example, the Government of Germany has established a data ethics commission to answer key questions related to algorithms, artificial intelligence and data handling. Many Governments have passed bills to protect the general right to privacy, personal data, correspondence and other forms of communication from abusive and unlawful use. Others have taken measures to protect health data and privacy by enacting new privacy acts or systemizing the data they have gathered.

32.   At the regional level, the European Union has adopted the General Data Protection Regulation to increase safeguards for data protection.[39] The Regulation contains a set of rules applicable to all companies operating in the European Union and empowering users by providing them with more control over their personal data. The Regulation helps to avoid the current fragmentation arising from different national systems and benefits businesses by creating a single level playing field.

33.   Furthermore, attempts have been made to safeguard users against other types of digital harm, such as online violence and disinformation. Governments are putting more effort into

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[36] A/HRC/40/63, paras. 56–61.

[37] Submission of the Eastern European Coalition for LGBT+ Equality to the report on data of the Special Rapporteur on the right to privacy (A/HRC/40/63). See also www.ucl.ac.uk/steapp/research/digital-technologies-policy-laboratory/gender-and-iot.

[38] A/HRC/38/47.

[39] Regulation (EU) of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

preventing the dissemination of disinformation, particularly regarding COVID-19, as disinformation causes public anxiety and indiscriminate fear.

34.   Bulgaria has organized an "Olympiad for civic education" to encourage students to use new technologies for presenting civic initiatives. Israel has initiated various projects to inform its citizens of their rights and realize those rights through digital means. Israel has also implemented a national plan for digital learning that gives citizens a customized learning experience. Likewise, India has launched Digital India, an initiative to provide digital infrastructure, governance services and digital literacy for the empowerment of all its citizens. Portugal has established a tele-health system that provides round-the-clock professional health care to citizens without the need to physically go to a doctor's office. Portugal has also replaced hard-copy vaccine records with an electronic database to centralize the management of the national vaccination programme. Italy has emphasized citizens' right to request that government agencies promptly publish online every official document.

35.   Mindful of the framework provided by the Declaration of Principles for International Election Observation, the European Union is leading a concerted effort to draft guidelines for the use of ICT in elections. As well as defining the responsibilities of different actors, including ICT producers and vendors, the European Union is also ensuring that ICT complies with the fundamental principles of transparency, inclusiveness and accountability.

36.   In many cases, best practices combine the creation of safeguards with the empowerment of civil society and the private sector. For example, the technological diplomacy approach of Denmark aims to engage with the tech industry, countries and civil society organizations to raise awareness of the human rights risks tied to technology. There has been a heightened need for corporate lawyers to contribute to human rights due diligence.[40] The European Union has raised funding for civil society organizations through the European Instrument for Democracy and Human Rights, thus improving the protection of human rights defenders through training on cyberhygiene, training journalists for the digital age and promoting ethics in digital media.[41]

B.   Role of the United Nations

37.   The transboundary nature of new technologies and the business models they enable means that national approaches alone are not enough. The divergence of regulatory models may result in a race-to-the-bottom effect, which allows technological harms to flourish in some jurisdictions while undermining countermeasures in others. Therefore, there is a growing need for a comprehensive approach spearheaded by the United Nations to deal with these complex issues. Recently, the General Assembly, the Human Rights Council, some Special Rapporteurs and the Office of the United Nations High Commissioner for Human Rights (OHCHR) have produced numerous reports and adopted resolutions to tackle and mitigate the human rights challenges caused by the digital age.

38.   The Secretary-General is very much involved in new technologies and human rights and has launched a series of initiatives to enable the United Nations to address this issue better. In 2018, the Secretary-General launched his strategy on new technologies.[42] The strategy adheres to five principles: protecting and promoting global values, fostering inclusion and transparency, working in partnership, building on existing capabilities and mandates and maintaining a learning mindset. These principles are to guide the work of the United Nations as it encounters new issues with new technologies. The strategy also identifies four commitments: to strengthen the internal capacities of the United Nations to engage with new technologies; to increase outreach and engagement on new technologies; to promote

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[40] See www.business-humanrights.org/en/civil-society-and-corporate-lawyers-should-work-together-on-human-rights-due-diligence/.

[41] In 2018, the European Union launched a global call in the framework of the European Instrument for Democracy and Human Rights for the disbursement of 5 million euros to civil society organizations using new technologies to promote democratic participation. The European Union has also financed projects to study how civil society groups can adapt to shrinking civil spaces by working with innovative solutions, including digital tools.

[42] See footnote 35 above.

dialogue on normative and cooperation frameworks; and to increase support to Member States.

39.   The Secretary-General has also established an innovation lab within his Executive Office to promote and support innovation, share best practices and advocate for innovative solutions to accelerate implementation of the Sustainable Development Goals. The lab has led to the establishment of the Global Pulse platform, which is aimed at building a society where big data and artificial intelligence promote development and peace.[43] The lab has also been tasked with building partnerships between the United Nations and technology companies to exchange thought-provoking ideas and scale up existing initiatives.

40.   The Secretary-General has established the High-level Panel on Digital Cooperation to address the social, ethical, legal and economic impacts of new technologies so as to maximize their benefits and minimize their harm and, in particular, to reflect on how new technologies can accelerate the implementation of the 2030 Agenda for Sustainable Development. In its report on the age of digital interdependence,[44] the High-level Panel called for the United Nations to create global digital cooperation mechanisms. Inspired by the process that had led to the Sustainable Development Goals, the High-level Panel proposed making a "global commitment for digital cooperation" in 2020, as one way of marking the seventy-fifth anniversary of the United Nations. Moreover, the High-level Panel made five recommendations for achieving an inclusive and interdependent digital world for a common digital future:

(a)   Build an inclusive digital economy and society;

(b)   Develop human and institutional capacity;

(c)   Protect human rights and human agency;

(d)   Promote digital trust, security and stability;

(e)   Foster global digital cooperation.[45]

41.   The General Assembly has repeatedly recognized that scientific and technological developments could have both civilian and military applications and that science and technology can be used for purposes that are inconsistent with the objectives of maintaining international stability and security. Like other scientific and technological advancements, ICTs positively transform the human experience while also creating profound and unique challenges. Thus, States should ensure the responsible development and use of ICTs so that their citizens can reap the full benefits of these innovations. The crucial contribution to achieving the goal mentioned above is made by the General Assembly resolutions on countering the use of ICTs for criminal purposes.[46] With a view to making the United Nations negotiation process on security in the use of ICTs more democratic, inclusive and transparent, in 2018 the General Assembly decided to convene an open-ended working group acting on a consensus basis.[47]

42.   Meanwhile, the Commission on Science and Technology for Development has been working to address the challenges posed by new technologies and exploring how to use them to make economies and societies more inclusive and address environmental concerns. The Commission held an intersessional panel discussion in November 2019, at which it continued its deliberations on facilitating rapid technological change for all. Among the topics discussed was the issue of tackling inequalities linked to new technologies such as artificial intelligence, big data and robotics. The expert participants also discussed how rapid technological change could improve inclusiveness in terms of income, gender, age, people with special needs and other groups facing specific challenges.

43.   The United Nations Development Programme (UNDP) has developed a digital strategy that sets out its vision for responding to a changing digital landscape. Two important

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[43]   See www.unglobalpulse.org/.

[44]   See www.un.org/en/pdfs/DigitalCooperation-report-for%20web.pdf.

[45]   Ibid., p. 5.

[46]   General Assembly resolutions 74/247 and 75/240.

[47]   General Assembly resolution 73/27.

interrelated concepts shape the UNDP Digital Strategy: digitization and digitalization. Digitization refers to the process of converting physical information into digital formats. Digitalization is the use of new technologies to change an organization's business model, including by creating new or improved ways of delivering services and enhancing their quality.[48] Although human rights implications are not mentioned explicitly in the document, one example is how the datafication cycle can be integrated into the work of the United Nations to create better outcomes for rights holders.

44.   In its management plan for 2018–2021, OHCHR has identified the digital space and emerging technologies as a "frontier issue" and briefly highlighted its aim to better understand the digital space and engage in its human rights dimensions.[49] Issues related to new technologies have also been addressed by several special procedures of the Human Rights Council, including the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression,[50] the Special Rapporteur on the right to privacy,[51] the Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance,[52] the Special Rapporteur on violence against women, its causes and consequences,[53] the Special Rapporteur on the right to education,[54] the Special Rapporteur on the sale of children, child prostitution and child pornography,[55] the Special Rapporteur on the promotion and protection of human rights and fundamental freedoms while countering terrorism,[56] the Special Rapporteur on extreme poverty and human rights[57] and the Independent Expert on the enjoyment of all human rights by older persons.[58]

45.   The reports of the above-mentioned special procedures contain a wealth of information on the risks and benefits of new technologies and their impact on human rights. The present report contributes to the discussion by emphasizing the interactions between all kinds of human rights and technological issues. For example, while encryption promotes freedom of expression and enhances individuals' right to privacy,[59] the anonymity conferred by new technologies facilitates the dissemination of neo-Nazi content and the harassment of women.[60] There are also contrasting perspectives on the role of the State. While some criticize Governments for exercising too much control over digital spaces, as in cases of mass surveillance and Internet shutdowns, others argue that Governments do not exercise enough control, allowing extremist content and insufficiently regulating online business activities. Many Governments have been openly using the digital space to disseminate anti-democratic ideas and promote practices that lead to violations of human rights. Thus, the findings contained in the reports of special procedures need to be integrated into a holistic picture of the complex ways that the datafication cycle shapes all categories of human rights in the digital era.

46.   B-Tech is a project launched by OHCHR to address the urgent need voiced by companies, civil society representatives and policymakers to find principled and pragmatic ways to prevent and address human rights harms connected with the development of new technologies and their use by corporate, government and non-government actors, including individual users. B-Tech uses the Guiding Principles on Business and Human Rights to help clarify the duties of States and the responsibilities of technology companies so as to ensure that the deployment of digital technologies benefits all humanity, effectively guards against

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[48] See https://digitalstrategy.undp.org/assets/UNDP-digital-strategy-2019.pdf.

[49] See www.ohchr.org/Documents/Publications/OMP_II.pdf, p. 43.

[50] A/74/486, A/73/348, A/HRC/38/35 and Add.5, A/HRC/35/22, A/HRC/32/38 and A/HRC/29/32.

[51] A/HRC/37/62, A/73/438 and A/HRC/34/60.

[52] A/HRC/38/52, A/HRC/38/53, A/73/305 and Corr.1 and A/73/312.

[53] A/HRC/38/47 and A/73/301.

[54] A/HRC/32/37.

[55] A/HRC/28/56.

[56] A/69/397.

[57] A/74/493.

[58] A/HRC/36/48.

[59] A/HRC/29/32, para. 56.

[60] On the importance of encryption, see A/HRC/38/35/Add.5. On the role of anonymity in facilitating extremist content, see A/73/312, para. 4. Also, on anonymity and sexual harassment, see A/HRC/38/47, para. 9.

the risk of harm to people and helps drive progress in implementing all the Sustainable Development Goals. Through an inclusive and dynamic multi-stakeholder process based on dialogue, consultation and research, B-Tech offers guidance:

(a)   On practices for responsible business conduct during the development, application, sale and use of new technologies;

(b)   To policymakers in applying a smart mix of regulation, incentives and public policy tools to provide human rights safeguards and accountability without hampering the potential of new technologies to address social, ecological and other challenges;

(c)   For the development of workable models for providing remedy and ensuring accountability when harm has occurred.

47.   Part of the project's output has been the development of a series of foundational papers restating, explaining and clarifying the implications of the Guiding Principles on Business and Human Rights for technology companies and States. Papers have been developed on each of the project's four strategic focus areas: human rights risks in business models; human rights due diligence and end-use; access to remedy; and the role of the State in advancing a smart mix of measures. The project also looks at the systemic and potentially transformative role of investors in shaping the behaviour of technology companies. A briefing paper providing investors with high-level analysis and guidance on how to apply the framework provided by the Guiding Principles to their investments in the tech sector has been issued.[61]

VI.   Gaps in the current human rights framework

48.   The current international human rights framework has the potential to paint a brighter future for humanity. However, new technologies and business models are putting this framework under unprecedented strain and exposing gaps – conceptual as well as operational – in ongoing responses. Tackling these challenges will require a new commitment to provide more resources to human rights bodies and innovative efforts to conceptualize and comprehensively respond to technological risks. [62]

49.   The first type of gap is conceptual. Simply put, new technologies are creating a fundamentally different world that does not line up exactly with our traditional paradigms. Thus, it is essential to ask how human rights treaties, documents and practices could be better adapted to the digital age. The Special Rapporteur on the right to privacy has suggested that some of the languages and expressions in human rights documents do not reflect the practices of the digital age.[63] Thus, additional research should be conducted to better understand the interconnections of new technologies and social change. It has also been pointed out that most international human rights instruments were initially drafted for the offline world and may not reflect the realities of the digital age. While the adoption of new treaties or international agreements or the amendment of existing ones seems not to be advisable at this stage, new ways and mechanisms that make the best use of these new technologies for advancing the human rights cause should be explored.

50.   The relationship between technologies and human rights is complex. The engineering community lacks an understanding of human rights and the human rights community does not have an understanding of technologies. A new technological system may improve the enjoyment of one type of human rights but simultaneously imperil the enjoyment of others, paradoxically resulting in a trade-off between different human rights.[64] Therefore, there is a pressing need for human rights scholars to operationalize a comprehensive human rights framework that can be easily applied to the design, implementation and use of new technologies. Without firm guidance from the human rights community, the designers of

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[61]   See www.ohchr.org/Documents/Issues/Business/B-Tech/B-Tech-Briefing-Investment.pdf.

[62]   See, for example, Committee on the Rights of the Child, general comment No. 25 (2021). In that general comment, the Committee emphasized the importance of protecting children from the risk of harm that exists in the digital environment, but also considered the importance of the digital environment as a means on realizing the full range of their rights.

[63]   Response of the Special Rapporteur on the right to privacy.

[64]   Response of the University of Essex.

technological systems may end up picking and choosing which rights to protect. These decisions would probably be shaped by convenience, such as the difficulty level of coding a specific right's protection, or cost considerations. The problem could be further complicated by the proliferation of different ethical standards and principles that only offer partial protection from human rights violations.

51.   Another conceptual gap is that researchers and policymakers are disproportionately prioritizing some types of technological systems or focusing on their harms. This gap was mentioned by the European Union, which argued that some issues garnered attention while others were relatively neglected. For example, issues such as the impact of new technologies on freedom of expression, online hate speech and disinformation and privacy issues are well addressed compared to other problems like disempowerment and inequality, which are under-researched.

52.   The second type of gap is operational. This category focuses on how new technologies are causing practical challenges for States, international organizations and institutions seeking to protect and promote human rights. As technical capabilities expand, international organizations and States are required to update their regulations and laws. Due to the inevitable existence of gaps between the enactment of regulations and the development of new technologies, Governments need to expect voluntary compliance by the private sector in the short term because social consensus and consultations need to precede the enactment of regulations.[65]

53.   Another operational gap is the growing disparity between the complex human rights issues created by the new technologies and the lack of adequate resources for the human rights mechanisms, which are being asked to do more with less.[66] Human rights defenders too need to keep pace with technological changes in their advocacy efforts.

54.   Operational gaps often involve broader questions of international governance. New technologies are global and transnational in scope, but regulatory efforts tend to remain national or regional. Thus, there is the possibility of overlaps as international institutions and States begin to develop policies on new technologies independently. Conversely, because new technologies are not dependent on a physical structure or location, it is difficult and often impossible to delineate national boundaries in cyberspace. Although private actors and States may affect the rights and freedoms of individuals in other countries, victims may not find themselves with appropriate protection or an effective remedy as their own State is unable to regulate cyberspace or hold perpetrators accountable due to a lack of jurisdiction. In order to minimize this gap and identify overlaps and gaps in regulatory efforts, international consultations between States and international organizations are required.[67]

55.   Moreover, the private sector's growing prominence and its role in protecting human rights is another crucial gap. Many new technologies, including artificial intelligence, virtual reality or blockchain technology, do not affect peoples' lives in isolation but do so by functioning as integral parts of business models. Although considerable progress has been made in raising the awareness of the private sector of its human rights obligations through the Guiding Principles on Business and Human Rights, there is still room for improvement. Some innovative business models are purposely designed to exploit legal grey areas. In this sense, the gaps are being wilfully widened by new technologies. There is, for example, a compelling need for an international governance system for digital labour platforms, which include more robust requirements to respect workers' rights.[68] Likewise, the International Trade Union Confederation has pointed out that regulations and policies in the workplace are inadequate and that government measures are either absent or contradict obligations with regards to fundamental human rights.

56.   Indeed, it is impossible to understate the role of the private sector. It is the source of many new human rights challenges as well as many possible solutions. As has been correctly pointed out by the Special Rapporteur on the right to privacy, the private sector's role is

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[65]   Response of the Republic of Korea. See also A/HRC/43/29.
[66]   Response of the Special Rapporteur on the right to privacy.
[67]   Response of the European Union.
[68]   Response of the Oxford Internet Institute.

especially critical in the privacy sphere.[69] Once the sole domain of Governments, identity verification has been increasingly carried out by private sector actors such as major social media platforms, allowing businesses to collect a vast amount of personal information. Today, private corporations hold more personal information and data about citizens than Governments do. In other words, the growing importance of private companies in datafication cycles is making their human rights responsibilities greater than ever before.

57.   A final issue that potentially complicates the protection of human rights is that new technologies are economically and strategically necessary. For example, artificial intelligence has clear military potential in pattern recognition and weapon targeting and is already used in various security applications. Likewise, the private sector estimates that artificial intelligence could generate between $77 billion and $3.9 trillion in revenue by 2023.[70] This means that attempts to integrate the human rights approach into technological development may face pushback when security or profitability is threatened. It is possible that the competitive pressures can lead to disincentivizing businesses from human rights scrutiny on their business models.[71]

VII.   Follow-up

58.   Today, a number of new challenges created by new technologies need to be addressed given the existing human rights framework and by monitoring mechanisms. Most respondents agreed that a holistic and balanced approach to the issue is preferable. Such an approach requires more coordination, better use of resources, faster and more effective action and consequently better results. One respondent stated that any new approach should embrace digital security, psychosocial well-being and organizational security processes, leading to a better overall awareness of new technologies.[72] Likewise, a comprehensive approach has been underscored as a way to tackle new human rights challenges.[73] In the present report, the Advisory Committee maintains that a holistic human rights approach to new technologies needs to be based on the three pillars: a holistic understanding of technology, a holistic approach to human rights and holistic governance and regulatory efforts.

Holistic understanding of technology

59.   A holistic understanding of technology requires an awareness of the complexity and interdependency of new technologies and an understanding of how they modify, shape and magnify human agency. It requires looking at the whole datafication cycle, not just an individual technology. In this regard, the interconnections between different types of innovations and their overall human rights consequences should be carefully traced. Thus, the human rights community needs to find new ways and adequate forums to exchange with technology experts and the private sector in the process of building new principles accommodating this approach. Moreover, it is critical to understand the human rights implications of each stage of a technology's development, including its design, manufacture, implementation and disposal. For example, algorithms can create adverse human rights outcomes because of faulty design, discriminatory training inputs or subsequent misuse by business or governance models. Respondents mentioned the importance of a human rights-based approach to designing, developing and deploying algorithms.[74]

60.   As already mentioned, gaps in knowledge are a key challenge because while technologies are rapidly changing, applicable laws and regulations become obsolete.[75] Also,

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[69] A/HRC/40/63.

[70] Louis Columbus, "Roundup of machine learning forecasts and market estimates for 2019", *Forbes* (27 March 2019).

[71] See www.ohchr.org/EN/Issues/Business/Pages/B-TechProject.aspx.

[72] Response of Bulgaria.

[73] Response of the European Union.

[74] Responses of the University of Essex, the Danish Institute for Human Rights and the Australian Human Rights Commission.

[75] Responses of the Special Rapporteur on the right to privacy, the European Union and the Republic of Korea.

a poor understanding of how new technologies work may result in suboptimal and ineffective regulations. Thus, there is a strong call for greater involvement of technical experts in the work of United Nations human rights mechanisms. Combining human rights expertise with technological expertise cannot happen without a commitment to investing in human resources and forging new partnerships.

61. Another key recommendation for the first pillar is to create technology-neutral regulations that focus on the effects of new technologies rather than attempting to regulate specific systems such as smartphones or drones, which are rapidly changing in capability and appearance. [76] The datafication cycle offers a useful way of conceptualizing the interrelatedness of new technologies and understanding the ways they intersect with business and governance models. Only by understanding the digital ecosystem at the system level will it be possible to mitigate harms and capture benefits. The real focus should not be on individual technologies but on the impact on human rights of the datafication cycle. For example, issues such as the need to gain users' consent for their data to be processed have to be duly considered to prevent human rights violations.[77]

Holistic approach to human rights

62. A holistic approach to human rights in the context of new technologies requires translating human rights norms into practical standards that are understandable to businesses and engineers. If the first pillar requires human rights experts learning about technologies, the second pillar requires teaching engineers about human rights. It is essential because many critical decisions that affect users' human rights are made on the drawing boards of technical experts at the early stages of a technology's development. Once a technology or business model has become widely implemented, it may be too late to solve any problems. Design processes need to consider universal human rights, including economic, social and cultural rights, as well as the rights of women, persons with disabilities, children and other vulnerable groups.

63. A key challenge identified by respondents is that businesses and technical experts are confronted by numerous alternative ethical guidelines and voluntary codes of conduct. Therefore, the United Nations needs to create a comprehensive manual or guide on how human rights norms can be applied to new technologies. Ideally, guidance would be specific and tailored to each stage of the datafication cycle. Explicit and binding standards for human rights-compliant e-government may also be necessary.[78]

64. At the same time, it is necessary to balance the human rights opportunities and the risks associated with new technologies because too much focus on the mitigation of harm could hamper innovation. As mentioned above, there are many benefits associated with new technologies. This means that the United Nations needs to also focus on promoting these tools, especially in developing countries and for the empowerment of vulnerable populations. While misuses of personal information are a significant concern, being excluded from the datafication cycle can also deprive people in developing countries and vulnerable groups of access to information and even of their basic human rights, especially in the cases of the "unbanked", stateless people and refugees. Thus, there is an important opportunity to integrate a rights-based approach to development with a solid human rights approach to new technologies in accordance with the 2030 Agenda for Sustainable Development.

65. Finally, a few types of human rights issues should not be privileged at the expense of others; efforts must be made to encompass the full spectrum of human rights. Many current discussions tend to take place in silos, with discussions on the right to privacy remaining separate from discussions on other human rights and discussions on the negative impact of new technologies remaining separate from celebrations of the ways in which they benefit human rights. Discussions need to be better integrated, both conceptually and in practice. Human rights due diligence processes for new technologies need to be expanded and made to explicitly include all human rights. They should also focus on empowerment, not just the

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[76] Response of Georgia.
[77] Response of the European Union.
[78] Response of the Danish Institute for Human Rights.

mitigation of harm. Ultimately, a more comprehensive human rights framework for new technologies is needed to correct the current proliferation of ethical principles and voluntary codes of conduct that cover only a limited range of human rights.

Holistic governance and regulatory efforts

66.   Holistic governance and regulatory efforts by States, international organizations, human rights mechanisms and the private sector are required. Moreover, these efforts need to be coordinated to avoid the risk of a trade-off between human rights, the proliferation of alternative regulatory and ethical standards, or governance gaps resulting from the growing prominence of non-State actors, especially businesses. It is vital to carefully include the voices of all users of new technologies, especially marginalized populations, which are particularly likely to be subjected to new governance and business models.

67.   There is a need for a multi-stakeholder approach that expands the scope of existing mechanisms for sharing information with the private sector. This process will be helpful in identifying principal actors and best practices for mitigating the risks posed by new technologies and shaping comprehensive policies in that regard. Competence on regulations and frameworks for data sharing needs to be strengthened. There is also a growing need for closer relationships between legal and technology experts.[79] Many respondents concurred that various stakeholders, including in the tech industry, should be brought into the equation to find adequate solutions. All actors need to show a level of responsibility proportional to their influence.[80]

68.   Governments need to reinforce citizens' digital skills through practical and inclusive lifelong learning to improve citizens' technological skills and bridge gaps in digital skills proficiency. Moreover, governments and regional mechanisms need to engage in specialized research and educational activities to teach users how to empower themselves with these technologies. It is the duty of individual governments to build effective governance models that can protect and promote human rights.

69.   It is urgently required of the private sector to act responsibly in mitigating the risks of negative impact on human rights that these new technologies may cause.[81] Private companies have an obligation to stay up to date with the human rights standards pertaining to the use of new technologies and subject their activities to human rights impact assessments. [82] Governments must continue to encourage and support companies as they strive to meet their responsibilities in accordance with the Guiding Principles on Business and Human Rights and the practices of human rights monitoring mechanisms. Moreover, Governments should facilitate the conduct of human rights due diligence by companies.[83]

70.   United Nations human rights mechanisms would benefit from creating a regular information-sharing mechanism so that the work of key stakeholders on the issue is better coordinated. Multi-stakeholder participation is vital to reflect experts' and users' opinions from various fields in the process of building a comprehensive approach.

71.   A systematic review of human rights and new technologies in the United Nations context could be performed by experts of the Human Rights Council mechanisms and OHCHR to ensure that there are no gaps or overlaps in the current framework.[84] In the same vein, additional discussions should be held on the possibility of establishing a panel of experts charged with developing a holistic and balanced approach to the issue of human rights and new technologies.

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[79] Response of Norway.
[80] Responses of Denmark, Georgia and Greece.
[81] Responses of the Office of the Victorian Information Commissioner (Australia), Georgia, Germany and the European Union.
[82] Responses of AGE Platform Europe and the Advocate of the Principle of Equality of Slovenia.
[83] Responses of Australia (Office of the Victorian Information Commissioner), Germany, the European Union and BT Group Corporate Affairs.
[84] Response of Denmark.

VIII. Conclusion

72.   The accelerating speed at which new technologies are developed and proliferate seems inevitable, but the impact of new technologies on human rights can be effectively shaped through the joint efforts of multiple stakeholders. New technologies have restructured societies and transformed nearly every aspect of modern life, primarily by creating datafication cycles that translate real-world objects into digital traces, distribute collected digital information and facilitate the use of information to make decisions. Datafication cycles can contribute to making ground-breaking advances in the human condition. In this sense, new technologies are causing sweeping impacts on all types of human rights but should be seen as an intervening variable rather than an independent variable.

73.   At the same time, however, new technologies are giving rise to profound new challenges and unforeseen human rights issues. Throughout human history, major economic and technological shifts have always created unprecedented suffering and victimization. It is up to us to break this precedent. As new technologies continue to unfold and evolve, we now have an even greater responsibility to ensure that datafication serves the people's needs without jeopardizing their human rights. It is encouraging that the United Nations, States, businesses and academic entities have shown a keen interest in addressing various issues associated with new technologies.

74.   In the present report, the Advisory Committee has identified conceptual and operational gaps in the existing human rights framework. These gaps can best be tackled by adopting an approach based on three pillars: a holistic understanding of technology, a holistic approach to human rights and holistic governance and regulatory efforts. Although much of the literature on new technologies suggests that we are on the precipice of profound transformations in our understanding of what it means to be human, the Committee is optimistic that a holistic and balanced approach to the issue can contribute to furthering a common understanding of human rights implications on new technologies and to reducing gaps in the existing human rights framework. This will, in turn, result in improved coordination, better use of resources and, consequently, more effective actions.