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|  |  | A/HRC/AC/25/CRP.2 |
|  |  | 5 February 2021English only |

**Human Rights Council**

**Advisory Committee
Twenty-fifth session**

15–19 February 2021

Agenda item 3 (g)

**Requests addressed to the Advisory Committee stemming from**

**Human Rights Council resolutions and currently under**

**consideration by the Committee
New and emerging digital technologies and human rights**

 New and emerging digital technologies and human rights

 Study of the Human Rights Council Advisory Committee[[1]](#footnote-2)\*

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 I. Introduction

1. Pursuant to the adoption by the Human Rights Council resolution “New and emerging digital technologies[[2]](#footnote-3) and human rights” (A/HRC/RES/41/11) at the forty-first session, the Advisory Committee is mandated to prepare a report on the 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 (UN) and recommendations on how human rights opportunities, challenges, and gaps arising from new technologies could be addressed by the Human Rights Council and its special procedures and subsidiary bodies in a holistic, balanced, and pragmatic manner and to present the report to the Council at its forty-seventh session (June 2021). The coronavirus (COVID-19) outbreak, declared as a Public Health Emergency of International Concern by World Health Organization in March 2020, has spread to 216 countries as of 1st of June 2020. The COVID-19 crisis has highlighted positive opportunities for new technologies but also revealed some serious potential human rights implications. Therefore, this report comes at an opportune time and aims to address the heightened need for the international community to establish appropriate guidance for new technologies regarding human rights.

2. The drafting group was established at the twenty-third session (July 2019) of the Advisory Committee, and is currently composed of Buhm-Suk Baek, Milena Costas Trascasas, Iurii Alexandrovich Kolesnikov, José Augusto Lindgren Alves, Xinsheng Liu, Ajai Malhotra, Mona Omar, Javier Palummo, Elizabeth Salmón (Chair) and Dheerujlall Seetulsingh., and Changrok Soh, former member of the Committee, was the Rapporteur until 30 September 2020. This drafting group then elaborated a questionnaire, in accordance with A/HRC/42/15 in which the Council encourages the Committee to consider the views and inputs of relevant stakeholders. The questionnaire was disseminated to different stakeholders including, Member States of the UN, international organizations, relevant special procedures mandate holders and treaty bodies, civil society organizations and businesses with a deadline of 15 October 2019. As of January 2020, more than 100responses were received, including 19 from States, 1 from the European Union, 4 from special procedures mandate holders, 1 from UNICEF, 3 from national human rights institutions, 30 from civil society organizations, and 7 from academic institutions.

 II. New and Emerging Digital Technologies: Conceptual Framework and Datafication Cycle

3. Throughout the report, the term new and emerging digital technologies or new technologies will be used to refer to technological innovations that are transforming the boundaries between virtual, physical, and biological spaces. They include new technologies and techniques of datafication, data distribution, and automated decision-making, such as Artificial Intelligence (AI), the Internet of Things, blockchain, cloud computing, and personalized medicine, among others.

4. In order to discuss the human rights impacts arising from new technologies, it is necessary to clarify several important assumptions guiding this research. First, it is an oversimplification to argue that technologies are inert or neutral objects and that negative consequences are purely the result of humans misusing them. Technologies, not just users, also have human rights consequences by often limiting users’ enjoyment of human rights or by influencing a policy, which may restrict individuals’ liberties. There is a growing body of scholarship in the field of Science and Technology Studies (STS), demonstrating how technical artifacts often embody the values and biases of the organizations or individuals that created them.[[3]](#footnote-4) Moreover, there is also an increasing awareness of how technologies can exercise a subtle but powerful regulatory effect on human societies.[[4]](#footnote-5) As Land and Aronson commented, it is of utmost importance to prevent intentional bias built into the technologies as well as the unintentional results.[[5]](#footnote-6) We cannot underestimate the impact that the misuse of these technologies would produce on democratic processes and the rule of law in the long run, particularly if used for social control purposes.

5. The second assumption of this report is that the impact of technological systems on human rights cannot be understood in isolation. The problem is not being caused by one type of technology but by broad waves of innovation sweeping across many different fields of human knowledge. This process is variously referred to in the popular media as the fourth industrial revolution, convergence, or the digital transformation. Therefore, this report employs the general term “new and emerging digital technologies” or “new technologies” to better capture the multifaceted nature of these changes. This integrated approach is especially important because, as Greenfield reminds us, the genuinely transformative circumstances arise when multiple technical capabilities are delicately woven together.[[6]](#footnote-7)

6. Therefore, a common feature of new technologies is that they are systems that enable and accelerate the synchronization of offline and online spaces. A technical term for this process is the physical-digital-physical loop (PDP), which refers to the flow of data from a real-world object to the Internet and then back again into the real-world.[[7]](#footnote-8) 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 also promises to revolutionize private life, public institutions, warfare, and human rights advocacy.

7. This report refers to these loops as the *datafication cycle* and highlights three distinct stages: 1) datafication 2) distribution 3) decision-making. New technologies are synergistically involved in each step of this cycle. Some illustrative examples are provided below:

i. The first stage of the cycle occurs when real-world objects are translated into digital traces via the Internet, smart phones, the Internet of Things, drones, biometrics, and wearable technology.

ii. The second stage is the distribution and transfer of digital information within organizations and between them and/or the rearrangement of this data in novel ways. This stage may occur through utilization of several technologies, including cloud computing, unstructured datasets, the blockchain, augmented reality, or the Internet of Things.

iii. The third stage is decision-making, which occurs when these digital traces are used to make decisions about people in the real-world, via algorithmic decision-making, automated systems, or human-in-the-loop systems.

8. This report’s use of the term “new and emerging digital technologies” elicited a broad selection of responses, on many different types of systems, including robotics, automation, wireless waves, predictive analytics, and various types of Information and Communication Technology (ICT). These technologies all occupy different stages of the datafication cycle. Moreover, understanding new technologies in a comprehensive manner allows us to develop a better understanding of how the various challenges and opportunities of new technologies are interrelated. Understanding this interrelatedness is essential because our goal is not halting the spread of new technologies but ensuring that these new technologies make significant positive contributions to the promotion and protection of human rights.

There are various salient human rights concerns surrounding new technologies used in warfare, especially regarding drones and autonomous weapons, this report exclusively focuses on technologies used in the civilian sphere because it would be impossible to adequately cover both issues in a single report. Human rights forum in Geneva held discussions regarding remotely controlled weapons from 2012 to 2013, which effectively raised awareness on the issue. Since then, there have been various informal and formal meetings concerning this issue. More international discourse on the emerging technologies in the military domain is called upon.[[8]](#footnote-9)Although some papers are already available on this subject, expert attention should be given in a specific study on the humanitarian side-effects of such technologies used with military purposes, with proper recommendations to States.

 III. Positive Contributions of New Technologies in Protecting and Promoting Human Rights

9. New technologies have great potential in advancing human rights, but they also create numerous serious challenges. This section will highlight the potential positive contributions of new technologies, and the next section will examine the negative consequences. New technologies have provided access to a wealth of information and improved citizens’ ability to manage, process, and understand this information. Firstly, such endowment of greater communicative power to users significantly expands the capabilities to communicate and share ideas at a global level, contributing to the advancement towards the realization of their rights and liberties. Secondly, these technologies can contribute to the empowerment of individuals by direct augmentation of their capabilities in the real world. Without these technologies it would have been impossible to ensure a balance between physical isolation and economic and social activity during the present Covid-19 Pandemic. These opportunities are expected to benefit everyone, including marginalized groups such as women, children, persons with disabilities, and refugees.

10. Greater communicative power can promote the right to privacy of the users, a fundamental human right, guaranteed under article 12 of the Universal Declaration on Human Rights and Article 17 of the ICCPR. Technologies such as end-to-end encryption, anonymization, and pseudonymization will enhance privacy by protecting the confidentiality of digital communications. Yet, for the privacy benefits of new technologies to be fully realized, the technologies need to comply with privacy and data protection requirements at the level of design as well as implementation.

11. Moreover, new technologies’ enhancement of communications greatly promoted the freedom of expression and association, stated in the article 19 of the Universal Declaration of Human Rights.[[9]](#footnote-10) New technologies have provided various novel social media platforms for the public to express their opinions, which provide user-friendly interfaces and various forms of instant communications. These opportunities created by new technologies allow individuals to coordinate and organize their actions, enabling the free assembly and association of likeminded individuals.[[10]](#footnote-11) One of the major benefits of new technologies lies in its potential to empower individuals and groups in the physical world through new tools such as automation, predictive analytics, and robotics.

i. New technologies can make public services more effective, cheaper, and more participatory, potentially enhancing democratic citizenship by strengthening pluralist debates, facilitating formation of joint positions, and allowing transparent and democratic processes of decision-making.

ii. Civil society can enjoy direct benefits from new technologies, as accessible technologies can provide secure digital space for civil society. Furthermore, the emergence and accessibility of new technologies have strengthened the networking potential of civil society groups and provided opportunities for empowering minority groups seeking to participate in public affairs.

iii. For human rights defenders, these new tools enable better advocacy and more effective promotion and protection of human rights on the ground. Digital spaces are not just powerful platforms for spreading or reporting good practices and empowering individuals, but also effective tools for reporting abuse and mobilizing support. New technologies can contribute to monitoring and preventing the persecution of people, thereby significantly contributing to the right to life.[[11]](#footnote-12) The acquisition of satellite images has also enabled effective documentation of human rights violations.[[12]](#footnote-13) Furthermore, digital tools are used to identify and address human rights violations such as discrimination, harassment and sexual harassment in the workplace.[[13]](#footnote-14)

iv. New technologies can empower victimized groups by effectively addressing their specific needs. Facial recognition may be used to reunifying families and facilitating effective communication among refugees.[[14]](#footnote-15) They can potentially conduct their legal research on asylum laws, seek legal advice, and connect with humanitarian services through Internet services.

v. New technologies are also celebrated for their potential to advance gender equality, by for example, increasing women’s access to education. New technologies provide wider access to educational tools, such as e-learning, which will help women in developing countries to realize their right to education.[[15]](#footnote-16)

vi. New technologies are expected to have powerful impacts in the field of health and welfare. Medical robots, ICT, Virtual Reality (VR) and AI are useful in diagnosis, surgery, rehabilitation, and prosthetics.[[16]](#footnote-17) In this vein, 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, these technologies foster inclusive education for deaf children. Remote telepresence robots, which refer to robots that combined video conferencing with mobile robots, and companion-type robots are utilized to enhance social interaction, especially for those who are living alone or residing in remote or rural areas.[[17]](#footnote-18) Furthermore, virtual visits through new technologies such as VR as well as telemedicine could reduce the inconveniences caused by distance and expand the access to medical service to wider population, preventing potential social exclusion of the individuals.[[18]](#footnote-19) It is expected that technologies such as assistive devices and built-in environmental applications can enhance elders’ standard of living by monitoring vital signs and symptoms that lead to early intervention.[[19]](#footnote-20) Assistive devices may also offer personalized alternative communication solutions, minimize any linguistic or cultural barriers, and even help people build communication skills.[[20]](#footnote-21)

12. Thus, in order for the data collected by new technologies to have meaningful impact on the lives of individuals, technologies should be designed with sound understanding of the international human rights framework and other legal principles.[[21]](#footnote-22) However, not all technologies are initially designed to serve for human rights purposes. Even if popular social media sites or other digital tools are proving their usefulness for documenting human rights abuses, we need to be conscious that there may be potential loopholes.[[22]](#footnote-23) Some social media platforms have been making efforts to prevent gender-based violence online by addressing systemic inequalities.[[23]](#footnote-24) It is necessary that the whole business ecosystem abide by the human rights framework to protect and promote human rights.[[24]](#footnote-25)

 IV. Key Challenges: Potential Violations of Human Rights by New Technologies

13. New technologies have great potential to contribute to the protection and promotion of human rights. Yet, there are two categories of challenges. The first group of challenges include the unintended consequences of datafication cycles, such as the erosion of privacy due to excessive transparency, flaws in security systems, or the exacerbation of discriminatory outcomes at the decision-making level. Conversely, the second group of concerns address the consequences of these technologies and datafication cycles if they work as advertised, but access is not widely shared, thus resulting in uneven empowerment of some individuals or groups. Such monopolization of the benefits may even lead to the emergence of novel capabilities or methods of violating human rights not only by states, but also by non-state armed and criminal groups.[[25]](#footnote-26)

 A. Unintended potential violations

14. The first group of challenges is the unintended consequences created by new technologies, especially privacy violations arising from excessive datafication. Protecting privacy rights including personal and confidential data from accidental or negligent leaks are important. Ensuring privacy of the users is vital as the right to privacy enables individuals to enjoy other basic human rights such as the right to freedom of expression and information, right to practice ones’ beliefs, right of association and assembly, and overall development of an individual. Naturally, infringement of individuals’ privacy hampers the enjoyment of all the abovementioned rights.[[26]](#footnote-27) Therefore, threats to privacy should not be dismissed as the inevitable price for progress because the erosion of this right weakens the entire human rights framework.

15. New technologies have spawned products and services that tailor themselves to the particular characteristics and preferences of the individuals they interact with, and these services require unprecedented access to personal information.[[27]](#footnote-28) Thus, concern about the collection and use of personal data has increased. New technologies collect data, track locations, individuals’ whereabouts, personal interactions, habits, consumption, and viewing patterns and then transfer this data to companies and states. In many cases, such collection of information happens without the full knowledge of the data subject, as it is too complicated for average users to understand the data processing algorithms of the digital services. This personal information is often used not only to influence shopping and consumption decisions but also political decisions.[[28]](#footnote-29) Without acquiring fully informed consent to use personal data, these services threaten the privacy of the individuals.[[29]](#footnote-30)

Moreover, private medical and health data uploaded online should be carefully handled.[[30]](#footnote-31) With the rapid spread of COVID-19 around the world, governments have been collecting private health and personal data of their citizens. The Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, A/HRC/44/49, raises concerns that “some efforts to combat the COVID-19 pandemic may be failing to meet the standards of legality, necessity and proportionality.”[[31]](#footnote-32) Considering the gravity of the pandemic situation, the right to privacy may be somewhat compromised, and the governments’ surveillance on individuals’ health may occur, but the important question remains as to what extent should governments have access to personal information.

16. Moreover, there are broader concerns about cybersecurity. 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 being interfered with by outside actors. Poor cybersecurity may lead to severe violations of privacy. For example, smart homes, wearables, and other types of smart devices, which help citizens lead more convenient lives, may create new risks for these individuals if the systems are insecure. Hacking can reveal a person’s identity, threaten their right to a private life, or even show when they are home alone, vulnerable to crimes such as burglary and sexual violence.

17. Business and governance models that rely on the personal data of users are not easily reconciled with the protection of individual’s right to privacy and the minimization of personal data disclosure online. Although many engineers concede to the need for cybersecurity, these new technologies and business models are purposely designed to collect personal data, share it, and then use it to influence consumers’ purchasing decisions. As datafication cycles become more granular, this influence will steadily grow, potentially threatening the autonomy of mental agency of users.[[32]](#footnote-33) Also, it is rightly pointed out that AI systems challenge the right to privacy because they depend on ingesting as much data as possible. A methodology that can invade users’ privacy with AI’s capacity for prediction and inference adds to these concerns.[[33]](#footnote-34)

18. There are also concerns about the quality of information. The digital revolution is radically transforming the traditional media ecosystem anchored on the centralized control of radio and television broadcasts. Information is cheaper and faster, but it is also increasingly difficult to separate it from misinformation. The Internet has profoundly changed the way media contents are produced and experienced. People obtain most of their news and other information online, through social media websites and blogs, investing minimal time and preferably collecting information for free. To some extent, the rise of new actors in the media ecosystem have started to eliminate traditional journalistic filters of accuracy.

Recent research has found that online hate speech is an early warning sign of persecution, which can trigger hate crimes based on the gender, religion, or ethnic origin.[[34]](#footnote-35) Digital media and social networking are intensifying the hate speech and the dissemination of hateful ideas. In response, some social media platforms are taking actions by notifying the users of the statements that can potentially instigate violence.[[35]](#footnote-36) 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.[[36]](#footnote-37)

19. Another major unintended consequence is the potential for discriminatory outcomes from AI decision-making. In theory, automated decision-making could help businesses and public agencies to be more responsive and allow them to 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 the automated decision-making using predictive algorithms in law enforcement agencies and the judiciary has a high possibility of inducing discrimination because of in-built biases against minorities and vulnerable groups.[[37]](#footnote-38) In the case of machine learning, discriminatory data may perpetuate discriminatory patterns and negatively affect individual’s rights especially in the case of health data. A very similar problem is observed in discriminatory hiring practices and for credit-scoring purposes. As public and private organizations seek to use automated tools to provide services cheaper and faster, the rigorous human rights due diligence of these tools is essential.

20. The second category of challenges revolve around the uneven empowerment created by new technologies. Although the empowerment of citizens and vulnerable groups was cited as one of the benefits of new technologies, the reverse is also possible. The recent COVID-19 crisis and physical distancing further raised people’s dependency on the Internet, accelerating the digital divide not only between the developed and developing countries but also within the societies. As the Internet becomes the primary method of communication and access to information, health and human rights risks can have a greater negative impact on the vulnerable populations lacking digital access. The technological empowerment will likely continue to be uneven, aggravating existing inequalities or creating new forms of vulnerability.

 B. Uneven empowerment

21. Automation may have social and economic consequences that are likely to be different for women from men, with significant implications for socio-economic equality and the global gender gap. The jobs that are expected to prosper in coming years will require higher education, intensive use of social and interpretative skills, and at least a basic knowledge of ICT. On the other hand, some jobs are at a risk of being lost to automation. In this vein, new technologies can lead to economic inequality, which will have consequences for individual and communal participation in social, cultural and political life. Moreover, workers in the new emerging industry may initially suffer from lack of protections of conventional employment law, thus exposing themselves to poor working conditions, low pay, and precarity.

22. Furthermore, illegal and arbitrary mass surveillance may occur, involving indiscriminate monitoring of the entire or significant portion of the population.[[38]](#footnote-39) Sometimes this surveillance is conducted without appropriate safeguards, which impinges unreasonably on the privacy and reputation of innocent people and harms the democratic norms of society. The surveillance is often conducted to monitor not only the political opponents but also human rights defenders. In addition, new technologies are enabling companies and governments to increase surveillance in workplaces, which can intimidate workers and obstruct the independent operation of trade unions.

23. Paradoxically, digital spaces are also used to curtail the freedom of expression, access to information, and the right to assembly. Governments enact such restrictions to the rights by shutting down Internet services or selectively blocking access to online resources, censoring media, and persecuting people for expressing their opinions online. A study has found that there have been cases where governments denied citizens of their Internet access, blocked sites, pressured Internet services to lower protections, created backdoors for intelligence services, and even blocked NGO’s online participation.[[39]](#footnote-40) The High Commissioner for Human Rights, Michelle Bachelet, observed in 2018 that “the Internet is increasingly a space of threat for human rights defenders.”[[40]](#footnote-41)

24. One of the most troubling challenges confronting the international community is that new technologies are creating new capabilities for human rights violators. There is also a growing danger that a variety of non-state criminal groups and individual criminals can use these new capabilities to violate human rights. New technologies have also created new and unprecedented criminal challenges such as child pornography, sextortion, copyright infringement, financial extortion, and the dissemination of illegally filmed photos and videos.

25. In fact, the interdependent nature of new technologies and data flows in modern societies has equipped individuals with the ability to create high levels of disruption. Disinformation is an example of the unintended consequence of the rapid rise of social media networks and the decline of traditional journalism. In this context, disinformation campaigns are often deliberately used for political purposes.

26. The UN Special Rapporteur to right to privacy pointed out that new technologies have amplified some forms of gender abuse. Although domestic violence and abusive behavior towards women and individuals of diverse gender identity existed prior to the existence of new technologies, cyber-misogyny and other cyber-abuse of individuals of diverse genders are enabled and amplified by new technologies.[[41]](#footnote-42) The Special Rapporteur on violence against women also underlined the online violence against women and girls. [[42]](#footnote-43)

 V. Progress by the International Community and the United Nations

27. This section reviews current progress made by the UN and the international community in understanding and responding to the issues contingent to new technologies and identifying two main categories of best practices. The first category involves safeguards and preventative measures to ensure that new technologies are not being misused. The efforts include domestic law making and preliminary attempts to regulate or create international norms for new technologies. The second category of best practices consists of ongoing efforts made by states, UN bodies, and international organizations to utilize new technologies to protect and promote of human rights.

 A. Best Practices at the National and Regional Level

28. Many respondents suggested that the current rate of innovation is outpacing states’ ability to keep abreast of the latest technological developments and their potential societal impacts. Therefore, it is vital for states to share their innovative legal and policy measures so that the international community can deal with human rights risks arising from new technologies. This section will showcase some of the best practices at the national and regional level.

29. There were cases of the successful implementation of a variety of new legal and policy safeguards for privacy and personal data. For example, the German Federal Government has established a Data Ethics Commission to answer key questions related to the use of algorithms, AI and the handling of data. Likewise, many governments have additionally passed bills to protect the general right to privacy, personal data, correspondence, and other 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.

30. At the regional level, the EU has adopted a General Data Protection Regulation (GDPR) to increase safeguards for data protection. GDPR is a set of data rules for all the companies operating in the EU, and it empowers users by providing them with more control over their personal data. The GDPR helps avoid the current fragmentation arising from different national systems and benefits businesses by creating a single level playing field.

31. There have also been various attempts to safeguard users against other types of digital harm, such as online violence and disinformation. Governments are putting more effort into preventing the dissemination of disinformation particularly regarding COVID-19, as disinformation raises public anxiety and indiscriminate fear. The governments are arduously making efforts in response to the online violence and disinformation, which involve academic research on the issue, public awareness raising, launching new initiatives, and enacting new regulations.

32. Bulgaria has organized an Olympiad for Civic Education where students use new technologies for presenting their civic initiatives. Likewise, the state of Israel has initiated various projects to inform its citizens of their rights and help them realize those rights through digital means. Israel has also implemented a National Plan for Digital Learning called Campus IL - a digital platform that gives citizens a customized learning experience. Portugal, likewise, has established a telehealth system that provides 24/7 professional health care to citizens without them having to go to a physical doctor’s office. It has also replaced paper vaccine records with eVACINAS in order to centralize the management of the national vaccination program. Italy has emphasized its use of “Civic access,” namely citizens’ right to request government agencies to promptly publish online every official document.

33. In the framework of the Declaration on Principles on International Electoral Observation (2005), the EU is leading a concerted effort to draft guidelines for the observation of use of ICT in elections, together with work on defining the responsibility of different actors, including ICT producers and vendors, to ensure that the ICT complies with fundamental principles of transparency, inclusiveness and accountability.

34. In many cases, best practices combine the creation of safeguards with the empowerment of civil society and the private sector. For example, Denmark’s technological diplomacy aims to engage with the tech industry, countries and civil society organizations to raise awareness of human rights risks tied to technology. There has been a heightened need for corporate lawyers to contribute to conduct human rights due diligence by trying to meet the human rights expectations of the corporations. [[43]](#footnote-44) The EU has raised funding for civil society organizations, through the European Instrument for Democracy and Human Rights (EIDHR), thus improving the protection of human rights defenders by engaging in trainings on “cyber-hygiene,” training journalists for the digital age, and promoting ethics in digital media.[[44]](#footnote-45)

 B. Role of the United Nations

35. Even though many states are doing their best to mitigate the challenges created by new technologies and use these new tools to empower their citizens, the transboundary nature of these 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 permits 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 UN, the only body with the global legitimacy and mandate to tackle this complex issue. Recently, the UN system and its human rights mechanisms such as the Human Rights Council, General Assembly, Special Rapporteurs, and the OHCHR have produced numerous reports and resolutions to tackle and mitigate the human rights challenges caused by the digital age.

36. The Secretary General is very much involved in the issues of new technologies and human rights, launching a series of initiatives to position the UN to better address this issue. The Secretary General has implemented the first-ever internal UN system strategy in September 2018 on new technologies with a goal “to define how the UN system will support the use of new technologies to accelerate achievement of the 2030 Sustainable Development Agenda and to facilitate their alignment with the values enshrined in the UN Charter, the Universal Declaration of Human Rights and the norms and standards of International Laws.”[[45]](#footnote-46) The strategy adheres to five principles of global values including fostering transparency, promoting partnership, building capabilities and mandates, and maintaining a learning mindset. These principles are to guide the work of UN as it encounters new issues with new technologies. Based on these principles, the strategy identifies four commitments made by the leaders in the UN system:

i. Deepening the UN’s internal capacities and exposure to new technologies;

ii. Increasing understanding, advocacy and dialogue around new technologies;

iii. Supporting dialogue on normative and cooperation frameworks;

iv. Enhancing UN system support to government capacity development

37. The Secretary General has also established the Executive Office of the Secretary General’s (EOSG) Innovation Lab with the goal to promote and support the innovations, share best practices, and advocate for innovative solutions for SDG acceleration. The lab is currently working on the initiative, global pulse, which aims to build a society where big data and artificial intelligence are used to promote development and peace.[[46]](#footnote-47) The lab is also tasked with building partnerships between the UN and technology companies to exchange thought provoking ideas and to assist and scale up the ongoing initiatives.

38. The Secretary General has also convened a high-level Panel on ‘Digital Cooperation’ to address the social, ethical, legal and economic impact of new technologies in order to maximize their benefits and minimize their harm, particularly reflecting on how these technologies can accelerate the 2030 Agenda on sustainable development. The Panel of the report titled, ‘The Age of Digital Interdependence’ calls for the UN to facilitate the creation of a mechanism for global digital cooperation. Inspired by the “World we Want” process that helped formulate the SDGs, the initial goal of the high-level panel is to mark 2020 with a “Global Commitment for Digital Cooperation.” The Panel has made five recommendations for an inclusive and interdependent digital world for common digital future:

i. Build an inclusive digital economy and society;

ii. Develop human and institutional capacity;

iii. Protect human rights and human agency;

iv. Promote digital trust, security and stability;

v. Foster global digital cooperation.[[47]](#footnote-48)

39. Meanwhile, the UN Commission on Science and Technology is working on addressing the challenges posed by new technologies and exploring on how to use them to make economies and societies more inclusive and address environmental concerns. The Commission held an inter-sessional panel in November 2019, which continued its deliberations on how to facilitate rapid technological change for all. The discussions included tackling inequalities linked to new technologies such as AI, big data and robotics. The experts also discussed how rapid technological change could be used to improve inclusiveness in terms of income, gender, age, people with special needs or other groups facing specific challenges.

40. The United Nations Development Program (UNDP) has developed a Digital Strategy, which sets out the vision for the evolution of the organization over the next three years to respond to changing digital landscape. There are two important interrelated concepts that shape UNDP’s 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 creating new or improved ways of delivering services and enhancing the quality of what is delivered.[[48]](#footnote-49) Although human rights implications are not mentioned explicitly in the document, there is an example of how the datafication cycle can be integrated into the work of the UN to create better outcomes for people in the field.

41. The United Nations Office of the High Commissioner for Human Rights (OHCHR), in its management plan for 2018-2021 has also briefly highlighted the shifting of its work to better understand and engage human rights dimensions of frontier issues including the digital sphere.[[49]](#footnote-50) Issues related to new technologies were also addressed in the reports of several Special Rapporteurs such as but not limited to the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression (A/74/486; A/73/348; A/HRC/38/35; A/HRC/38/35/Add.5; A/HRC/35/22; A/HRC/32/38; A/HRC/29/32); the Special Rapporteur on the right to privacy (A/HRC/37/62; A/73/45712; A/HRC/34/60); the Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and elated intolerance (A/HRC/38/52; A/HRC/38/53; A/73/305; A/73/312); the Special Rapporteur on violence against women (A/HRC/38/47; A/73/301); Special Rapporteur on the right to education (A/HRC/32/37); Special Rapporteur on the sale of children, child prostitution and child pornography (A/HRC/28/56); Special Rapporteur on the promotion and protection of human rights and fundamental freedoms while countering terrorism (A/69/397); and Report of the Independent Expert (A/HRC/36/48).

42. Abovementioned reports each contain a wealth of information on the risks and benefits of various new technologies and human rights issues. This report would like to contribute by emphasizing the interactions between all kinds of human rights and technological issues. For example, whereas encryption has clear benefits such as promoting freedom of expression and enhancing individual privacy rights, the anonymity conferred by new technologies is also facilitating the dissemination of Neo-Nazi content and the harassment of women.[[50]](#footnote-51) There are also contrasting perspectives on the role of state, with some reports criticizing governments for exercising too much control over digital spaces, as in the case of mass surveillance or Internet shutdowns, but not enough in others, such as in the case of insufficient suppression of extremist content or the lack of regulations of online business activities. Thus, there is a need to integrate these reports into a holistic picture of the complex ways that the datafication cycle is shaping all categories of human rights in the digital era.

43. An important initiative in this issue area is B-Tech. It was launched by OHCHR in an effort “to address the urgent need voiced by the companies, civil society and policy makers 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 Project aims to use the UN Guiding Principles on Business and Human Rights as the lens to help clarify the respective roles and responsibilities of states and the private sector to address the core challenges in the digital technologies space. Through an inclusive, multi-stakeholder process of consultation and research, the B-Tech project will seek to offer:

i. Guidance on practices of responsible businesses conduct during the development, application, sales, and the use of new technologies;

ii. Guidance to policy makers in applying a smart mix of regulation, incentives and public policy tools – providing human rights safeguards and accountability without hampering the potential of new technologies to address social, ecological and other challenges; and

iii. Guidance to develop workable models for remedy and accountability when harm has occurred.[[51]](#footnote-52)

 VI. Gaps in the Current Human Rights Framework

44. Current international human rights framework has potential to paint a better 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 as well as innovative efforts to conceptualize and more comprehensively respond to technological risks.

45. The first type of gaps are conceptual ones. Simply put, new technologies are creating a fundamentally different world that does not line-up exactly with our traditional paradigms. Thus, it is important to ask how human rights treaties, documents, and practices could be better adapted to the digital age. The Special Rapporteur for the Right to Privacy suggested that some of the languages and expressions contained in human rights documents do not reflect the practices of the digital age.[[52]](#footnote-53) Thus, additional research should be conducted to better the understanding of the interconnections of new technologies and social change.[[53]](#footnote-54) It was also pointed out that most international human rights instruments were originally drafted for the offline world and may not reflect the realities of the digital age. To bridge these gaps, it might be practical to amend the existing instruments rather than coming up with entirely new treaties or international agreements.[[54]](#footnote-55)

46. The linkages between technologies and human rights are complex. The engineering community lacks a holistic understanding of human rights, and the human rights community does not have a holistic understanding of the technologies. 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.”[[55]](#footnote-56) 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 strong guidance from the human rights community, the designers of technological systems may end up picking and choosing which rights to protect or not. These decisions would probably be shaped by convenience such as by the difficulty level of coding a specific right’s protection or cost considerations. Such problem can be further complicated by the proliferation of different ethical standards and principles that only offer partial protection from human rights violations.[[56]](#footnote-57)

47. Another conceptual gap is that some types of technological systems or their harms are being disproportionately prioritized by researchers and policymakers. This gap was mentioned in the response of the EU, which argued that certain issue areas are more addressed, but others are relatively neglected. For example, issues such as the impact of new technologies on freedom of expression, online hate speech, or disinformation and privacy issues are well addressed compared to other issues like mass-surveillance.[[57]](#footnote-58) Focusing on a few selected technological applications can lead to the failure to foresee unintended, yet serious consequences.[[58]](#footnote-59)

48. The second category of gaps consists of operational issues. This category focuses on how new technologies are causing practical challenges for states, international organizations, and institutions as they seek to protect and promote human rights. As the new 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.[[59]](#footnote-60)

49. Another operational gap is the growing disparity between the complex human rights issues created by the new technologies and the lack of resources for the human rights mechanisms, which are being asked to do more with less. A holistic and balanced approach, which requires tracing the interdependency of human rights in complex technological systems and identifying the ways that various stakeholders are affected in each stage of datafication cycle, is going to require more research and greater coordination from existing human rights mechanisms, special rapporteurs, and independent experts. Unfortunately, these mechanisms currently lack adequate resourcing.[[60]](#footnote-61) Regarding this issue of keeping up with new technologies, human rights defenders, such as lawyers, activists, and members of civil society need to keep pace with technological changes in their advocacy efforts. The lack of involvement of legal scholars in the issue of technological threats to privacy raises concerns. In this line, legal scholars should be encouraged to engage in more interdisciplinary research and work in greater cooperation with the private sector.[[61]](#footnote-62)

50. These 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 the UN member states begin to independently develop policies on new technologies. To minimize this gap, international consultation between states and international organizations is required to identify the overlaps and gaps in these regulatory efforts.[[62]](#footnote-63)

51. Moreover, the growing role of the private sector is another crucial gap. Many of these new technologies, including AI, VR, or blockchain, do not impact peoples’ lives in isolation but do so by functioning as the 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 UN Guiding Principles on Business and Human Rights, there is still room for improvement. In fact, some of these innovative business models are purposely designed to exploit legal grey areas. In this sense, these gaps are being wilfully widened by new technologies. Hence, there is a compelling need for an international governance system for digital labor platforms, which include more robust requirements for these digital platforms to respect the basic human rights of their workers.[[63]](#footnote-64)

52. 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 correctly pointed out by the UN Special Rapporteur on the Right to Privacy, the role of private sector is especially critical in the privacy sphere. Identity verification, once the sole domain of governments, has been increasingly carried out by private sector actors, such as major social media platforms, allowing the businesses to collect vast amount of personal information. Today, private corporations hold more personal information and data about citizens than the governments. In other words, the growing importance of private companies in the operation of datafication cycles is making their human rights responsibilities greater than ever before.

53. A final issue that potentially complicates the protection of human rights is that these new technologies are economically as well as strategically important. For example, AI has clear military potential in areas such as pattern recognition and weapon targeting and is already used in a variety of security applications. Likewise, private sector estimates that AI can generate between USD $77 billion and USD $3.9 trillion in revenue by 2023.[[64]](#footnote-65) This means that attempts to integrate human rights approaches into technological development may face pushback when security or profitability is threatened. It is potentially possible that the competitive pressures can lead to disincentivizing businesses from human rights scrutiny on the business models.[[65]](#footnote-66) Likewise, the International Trade Union Confederation (ITUC) has identified an absence of adequate regulations and policies in the workplace, as well as government measures that are either absent or contradict obligations with regards to fundamental human rights.

 VII. Recommendations

54. The existing human rights framework and monitoring mechanisms were created in a period when technological innovation was less disruptive. Today there are a number of new challenges created by new technologies that need to be addressed. Most respondents agreed that a holistic and balanced approach to the issue is preferable. Such approach requires more coordination, better use of resources, faster and more effective actions, and consequently better results. One of the respondents stated that a holistic approach should embrace “digital security, psycho-social well-being, and organizational security processes”[[66]](#footnote-67), leading to a better overall awareness of new technologies.[[67]](#footnote-68) Likewise, a holistic analysis and a comprehensive approach have been underscored as ways to tackle the new human rights challenges.[[68]](#footnote-69)

55. This report argues that the holistic human rights approach to new technologies needs to include three pillars: 1) holistic understanding of new technologies; 2) holistic approach to human rights 3) holistic governance and regulatory efforts.

56. Holistic understanding of technology requires an awareness of the complexity and interdependency of new technologies as well as an understanding of the ways they modify, shape, and magnify human agency. It requires looking at the whole datafication cycle, not just an individual technology. In this regard, a holistic approach should carefully trace the interconnections between different types of innovations and their overall human rights consequences. Thus, the human rights community needs to find new ways to encourage participation from diverse bodies, not only limited to the OHCHR, UN human rights bodies, and the independent experts, but also technology experts and the private sector to build new principles that can accommodate the holistic approach. Moreover, we need to understand the human rights implications of each stage of a technology’s development, including its design, manufacture, implementation, and even disposal. For example, algorithms can create negative human rights outcomes because of faulty design, discriminatory training inputs, or their subsequent misuse by business or governance models. Many respondents mentioned the importance of a human rights-based approach when it comes to designing, developing, and deploying algorithms.[[69]](#footnote-70)

57. Knowledge gaps are the key challenge because technologies are rapidly changing while the laws or regulations targeting the technologies are becoming obsolete.[[70]](#footnote-71) Also, poor understandings of how new technologies operate may result in suboptimal and ineffective regulations. Avoiding these gaps requires more research on the interrelatedness of new technologies and their complex impacts on human rights. In this same vein, there is a strong call for greater involvement of technical experts in the work of UN human rights mechanisms. Combining human rights expertise with technological expertise cannot happen without a commitment to invest in human resources and forge new partnerships.

58. Another key recommendation for the first pillar is that we should create technology neutral regulations that focus on the *effects* of new technologies rather than attempting to regulate specific systems such as smart phones or drones, which are rapidly changing in capabilities and appearances. [[71]](#footnote-72) This report suggests that 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 we be able to mitigate its harms and capture its benefits. The real focus should not be on individual technologies but the human rights effects of the datafication cycle itself.

59. Holistic approach to human rights in the context of new technologiesrequires the difficult task of translating human rights norms into practical standards that are comprehensible for businesses and engineers. If the first pillar requires human rights experts learning about technologies, the second pillar requires teaching engineers about human rights. This is essential because many of the critical decisions that will affect users’ human rights are made on the drawing boards by technical experts at the early stages of a technology’s development. Once a technology or business model becomes widely implemented, it may be too late to solve the problems associated with it. Design processes need to consider the rights of women, persons with disability, children and other vulnerable groups.

60. A key challenge identified by respondents, however, is that businesses and technical experts are confronted by numerous alternative ethical guidelines or voluntary codes of conduct. Therefore, the UN needs to pierce together this clutter of competing ethical standards by creating a comprehensive manual or guide on how human rights norms can be applied to new technologies, especially as embedded in governance and business models. Ideally, guidance would be specific and tailored for each stage of the datafication cycle. Explicit and binding standards for human rights compliant e-government may also be necessary. [[72]](#footnote-73)

61. Second, this comprehensive framework needs 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. There are many benefits associated with new technologies, which means that the UN needs to also focus on promoting these tools, especially in the context of developing countries or the empowerment of vulnerable populations. While misuses of the personal information is a great concern for these populations, being excluded from the datafication cycle can also deprive them of access to information and even their basic human rights, especially in cases of the un-banked, stateless people, or refugees. Thus, there is an important opportunity to integrate a human rights-based approach to development with a strong human rights approach to new technologies in accordance with the 2030 Agenda for Sustainable Development and Sustainable Development Goals.

62. Finally, we should not privilege a few types of human rights issues at the expense of others but need to encompass the full spectrum of human rights. Many current discussions tend to be siloed, with privacy discussions separate from discussions of other human rights or discussions of the negative impacts of new technologies separate from celebrations of their positive human rights benefits. These discussions need to be better integrated, both conceptually and in practice. Human rights due diligence processes for new technologies need to be expanded and explicitly include all human rights. They should also focus on empowerment, not just the mitigation of harm. Ultimately, a more comprehensive human rights framework for new technologies is needed as a corrective to the current proliferation of ethical principles and voluntary codes of conduct that only cover a limited range of human rights.

63. Holistic governance and regulatory effortsby states, international organizations, human rights mechanisms, and the private sector are required. Comprehensive solutions to the arising issues are needed as they are cross-cutting and global in scope. Moreover, we need coordination 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 role of non-state actors, especially businesses. It is vital to carefully include the voices of all implicated users of these technologies, especially marginalized populations that are particularly susceptible to new governance and business models.

64. There is a need for a multi-stakeholder approach to shape the comprehensive human rights approach to new technologies. This approach will require the expansion of existing mechanisms for information sharing with the private sector. In particular, the EU voiced its appreciation of the Advisory Council’s efforts at worldwide consultation. EU is of the opinion that this process will be helpful in identifying the principal actors and best practices in mitigating the risks of new technologies and that multilateral discussions can shape comprehensive policies. We have to enhance competence in regulations and frameworks for data sharing. There is also a growing need for closer relationships between law and technology experts.[[73]](#footnote-74) Many respondents concurred that a variety of stakeholders, including 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 influences.[[74]](#footnote-75)

65. Governments need to reinforce citizens’ digital skills through effective 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 the governments to build effective governance models that can protect and promote human rights.

66. 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.[[75]](#footnote-76) 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.[[76]](#footnote-77) Governments must continue to encourage and support companies as they strive to meet their responsibility in accordance with the Guiding Principles on Business and Human Rights and the practice of human rights monitoring mechanism. Moreover, governments should facilitate the conduct of human rights due diligence by companies.[[77]](#footnote-78)

67. It is also vital to include non-experts in the discussions regarding new technologies. Users should take an active role in the design and development process of new technologies and must be included in the decision-making processes when these technologies are to be implemented by public institutions.

68. The ways we implement and design international human rights mechanisms need to accommodate new technological realities. This recommendation parallels the concern that some of the language in human rights treaties may not reflect digital realities. [[78]](#footnote-79) There should be a concerted effort to make these texts technologically neutral, and they should be interpreted to reflect the realities of contemporary societies, especially the growing importance of online spaces.

69. UN human rights mechanisms would benefit from the creation of a regular information-sharing mechanism so that the work of key stakeholders on the issue is better coordinated. Multi-stakeholder participation is important to reflect the opinions of experts and users from various fields into building a holistic approach.

70. A systematic review of human rights and new technologies in the context of the UN could be performed by experts in the Human Rights Council and the OHCHR to ensure that there are no gaps or overlaps in the existing work.[[79]](#footnote-80)

71. It is advised to hold further discussions on the formation of panel of experts to come up with holistic and balanced approach in response to arising human rights issues associated with new technologies. A separate fund may be allocated to facilitate further future research.

 VIII. Conclusion

72. Accelerating development and proliferation of new technologies seem inevitable, but their impacts on human rights can be effectively shaped through the joint efforts of multi-stakeholders. New technologies have restructured societies and transformed nearly every aspect of modern life, especially through the creation of datafication cycles that translate real-world objects into digital traces, distribute collected digital information, and facilitate the use of this information to make decisions. Datafication cycles can potentially contribute by making ground-breaking advances in human condition. In this sense, we need to view new technology as an intervening variable, rather than an independent variable, which can impose sweeping impacts on all types of human rights.

73. However, these new technologies are simultaneously giving rise to profound new challenges and causing 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 have greater responsibility to ensure that this datafication is serving the people’s needs and promoting their basic human rights. In this light, it is encouraging that the UN, states, businesses, and academia have shown deep interest in the issues associated with new technologies.

74. This report has identified conceptual as well as operational gaps in the existing human rights framework. These gaps can be best tackled through a holistic approach consisting of three pillars: 1) holistic understanding of technology; 2) holistic approach to human rights; and 3) holistic governance and regulatory efforts. Although much of the literature on new technologies suggest that we are on the precipice of profound transformations in what it means to be human, this report is optimistic that a holistic and inclusive approach to the issue can reduce gaps in the existing human rights system and will result in more coordination, better use of resources and consequently and more effective actions.

1. \* Reproduced as received, in the language of submission only. [↑](#footnote-ref-2)
2. “New and emerging digital technologies” will be referred to as “new technologies” throughout this report. [↑](#footnote-ref-3)
3. Please see Andrew Feenberg, Transforming Technology a Critical Theory Revisited (Oxford: Oxford University Press, 2002); Bruno Latour, Aramis, or the Love of Technology, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1996); Cathy O’Neil, Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy (New York, NY: Crown, 2016). [↑](#footnote-ref-4)
4. Lawrence Lessig, Code, Version 2.0 (New York, NY: Basic Books, 2006); Roger Brownsword, “In the Year 2061: From Law to Technological Management,” Law, Innovation and Technology 7, no. 1 (January 2, 2015): 1–51, https://doi.org/10.1080/17579961.2015.1052642. [↑](#footnote-ref-5)
5. Molly K. Land and Jay D. Aronson, eds., New Technologies for Human Rights Law and Practice (Cambridge, UK: Cambridge University Press, 2018), 9. [↑](#footnote-ref-6)
6. Adam Greenfield, Radical Technologies: The Design of Everyday Life, EPUB (New York, NY: Verso, 2017), chap. 10 para. 2. [↑](#footnote-ref-7)
7. Mark Cotteleer and Brenna Sniderman, Forces of Change: Industry 4.0 (Deloitte University Press, 2017), 3, <https://www2.deloitte.com/insights/us/en/focus/industry-4-0/overview.html>. [↑](#footnote-ref-8)
8. For more information on the issue of autonomous weapons, see https://www.un.org/en/un-chronicle/role-united-nations-addressing-emerging-technologies-area-lethal-autonomous-weapons. [↑](#footnote-ref-9)
9. UN General Assembly, "Universal Declaration of Human Rights," 217 (III) A (Paris, 1948), <http://www.un.org/en/universal-declaration-human-rights/> (accessed July 20, 2020). [↑](#footnote-ref-10)
10. United Nations, General Assembly, *Report of the rights to freedom of peaceful assembly and association: The Digital Age,* A/HRC/41/41, available from <https://undocs.org/A/HRC/41/41>. [↑](#footnote-ref-11)
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12. Response of the EU. [↑](#footnote-ref-13)
13. Response of the Advocate of the Principle of Equality of the Republic of Slovenia. [↑](#footnote-ref-14)
14. Responses of the EU and American University of Paris. [↑](#footnote-ref-15)
15. Sekabira Haruna and Matin Qaim, “Can Mobile Phones Improve Gender Equality and Nutrition? Panel Data Evidence from Farm Households in Uganda,” ScienceDirect (Elsevier, December 2017), <https://doi.org/10.1016/j.foodpol.2017.10.004>. [↑](#footnote-ref-16)
16. See for examples <https://ec.europa.eu/digital-single-market/en/content/rgs-reaching-out-brain-recovery-through-serious-gaming> and <http://www.i-prognosis.eu>. [↑](#footnote-ref-17)
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19. Sorell, T., & Draper, H. (2014). Robot carers, ethics, and older people. *Ethics Inf Technol, 16*, 183-195 and World Health Organisation. Assistive devices and technologies [Internet]. 2015; Peek STM, Wouters EJM, van Hoof J, Luijkx KG, Boeije HR, Vrijhoef HJM. Factors influencing acceptance of technology for aging in place: a systematic review. Int J Med Inform [Internet]. 2014 Apr;83(4):235–48. [↑](#footnote-ref-20)
20. Ibid. [↑](#footnote-ref-21)
21. Response of eyeWitness to Atrocities. [↑](#footnote-ref-22)
22. Syrian Civil War atrocity videos were taken down by YouTube because they violated the site’s terms of use. See <https://www.nytimes.com/2017/08/22/world/middleeast/syria-youtube-videos-isis.html>. [↑](#footnote-ref-23)
23. Nicolas Suzor et al., “Human Rights by Design: The Responsibilities of Social Media Platforms to Address Gender‐Based Violence Online,” Wiley Online Library (John Wiley & Sons, Ltd, September 29, 2018). [↑](#footnote-ref-24)
24. The United Nations Guiding Principles on Business and Human Rights highlights the state’s responsibility to secure human rights and the corporate’s responsibility to respect human rights. [↑](#footnote-ref-25)
25. The UN Secretary General’s Strategy on New Technologies, published in September 2018, raises concern on how new technologies may endow such criminal groups with unprecedented capabilities. [↑](#footnote-ref-26)
26. Response of United Nations Special Rapporteur to right to privacy. [↑](#footnote-ref-27)
27. “Human Rights and Technology Issues Paper (2018): Australian Human Rights Commission.” The Australian Human Rights Commission, humanrights.gov.au/our-work/rights-and-freedoms/publications/human-rights-and-technology-issues-paper-2018. [↑](#footnote-ref-28)
28. For more information on how such personal information can be used politically, please refer to the following report. Available at: <https://ico.org.uk/media/2259369/democracy-disrupted-110718.pdf>. [↑](#footnote-ref-29)
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37. Christopher Knight, “Automated Decision-Making and Judicial Review,” *Judicial Review*, 2020, pp. 1-7, <https://doi.org/10.1080/10854681.2020.1732740>. [↑](#footnote-ref-38)
38. For more information, please refer to the case of European Court of Human Rights, [Big Brother Watch and others v. UK](file:///C%3A/Users/haejo/Google%20Drive/%E1%84%80%E1%85%A1%E1%86%BC%E1%84%92%E1%85%A8%E1%84%8C%E1%85%A9-%E1%84%8B%E1%85%B5%E1%86%AB%E1%84%80%E1%85%AF%E1%86%AB/New%20Tech%20Report/September%20Feedback/Big%20Brother%20Watch%20and%20others%20v.%20UK) (2018). Available at<http://hudoc.echr.coe.int/eng?i=001-186048>. [↑](#footnote-ref-39)
39. Elizabeth Farries et al., “Spying on Dissent” (INCLO, June 2019), <https://www.inclo.net/pdf/spying-on-dissent-Report_EN.pdf>. [↑](#footnote-ref-40)
40. Michelle Bachelet, “Human Rights in a New Era,” OHCHR (OHCHR, November 14, 2018), <https://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=23874>. [↑](#footnote-ref-41)
41. Eastern European Coalition for LGBT+ Equality’s submission, ‘Gender Perspectives on Privacy in Eastern Partnership Countries and Russia’, 2018; UCL and Privacy International, ‘Gender and IoT’.

 For more information see <https://www.amnesty.org.au/australia-poll-reveals-alarming-impact-online-abuse-women/>. [↑](#footnote-ref-42)
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43. “Civil Society and Corporate Lawyers Should Work Together on Human Rights Due Diligence,” Business &amp; Human Rights Resource Centre, 2018, <https://www.business-humanrights.org/en/civil-society-and-corporate-lawyers-should-work-together-on-human-rights-due-diligence>. [↑](#footnote-ref-44)
44. The EU launched in 2018 an EIDHR Global Call of 5 million euros for civil society organizations which aims to use new technologies to promote democratic participation. The EU has also financed projects such as “Supporting Democracy” to study how civil society groups can adapt to shrinking civil spaces by working with innovative solutions, including digital tools. [↑](#footnote-ref-45)
45. For more information on the UN Secretary General’s Strategy on New Technologies, please see <https://www.un.org/en/newtechnologies/images/pdf/SGs-Strategy-on-New-Technologies.pdf>. [↑](#footnote-ref-46)
46. Please see <https://www.unglobalpulse.org/>. [↑](#footnote-ref-47)
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