

Ageing in the Digital Era

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Challenging context

The 21st Century is characterized by rapidly expanding digitalisation. Digital technologies can assist in learning new skills, facilitate social interactions, foster independent and autonomous living, and improve the management and delivery of health and social care services for ageing populations. However, not everyone equally benefits. The COVID-19 pandemic has highlighted the unequal access to digital technologies across and within populations. Older persons are more likely to be digitally excluded and to experience barriers accessing goods and services that are increasingly provided online. Digital exclusion reduces opportunities for active and healthy ageing, including social and economic participation. The challenge is not only to empower ageing individuals by providing access to digital technologies and enhancing digital literacy. Age-friendly design and relevance of digital services, as well as ageism-free, ethical and safe digital environments that embrace the diversity of ageing populations need to be ensured.

Suggested strategies

Digital inclusion and empowerment of older persons in the digital era requires policy action to:

- **Ensure equal access to goods and services involving digital technology**, through participatory design and policy initiatives that render online services such as e-Government, e-banking, e-commerce, e-learning and tele-health services available, accessible, affordable and user-friendly, while maintaining continued off-line access.
- **Enhance digital literacy and reduce the digital skills gaps** by providing training to safely and securely navigate digital environments, including intergenerational and peer learning opportunities, as well as measures that tackle ageism, to encourage digital engagement among older persons.
- **Leverage the potential of digital technologies for active and healthy ageing, well-being and empowerment of older persons** including through digital communications that can reduce loneliness and social isolation, and digital technologies that can foster opportunities for independent living in advanced age.
- **Ensure the protection of human rights of older persons in the digital era** by creating ethical, transparent and safe digital environments and services through policies that protect the dignity, autonomy, privacy, as well as free and informed consent to the use of digital technology.

Expected results

A reduction in the digital divide and enhanced digital inclusion of older persons; expanded opportunities to benefit from the advantages of digitalisation with mitigated associated risks.

With good practice examples from:

Austria, Azerbaijan, Belgium, Canada, Czech Republic, Finland, Germany, Ireland, Israel, Italy, Luxembourg, Malta, Romania, Serbia, Slovak Republic, Slovenia, United Kingdom of Great Britain and Northern Ireland, United States of America.

This policy brief addresses **Commitments 1, 2, 6, 7, 8 and 9 of the Regional Implementation Strategy of the Madrid International Plan of Action on Ageing (RIS/MIPAA), Goal 1, 2 and 3 of the 2017 Lisbon Ministerial Declaration, as well as Sustainable Development Goals 3, 4, 5, 10, and 11.**



United Nations

Introduction

The rapid advancement of new digital technology continuously transforms our societies and the world we live in. For most people, including older persons, this means having to embrace technology as a core part of everyday life and to continuously adapt to and integrate new digital technologies into daily routines and living environments. Digital technologies are an extraordinary achievement of humankind and create unprecedented opportunities. Technological advancements are perceived as highly promising in fostering active and healthy ageing: they have been found to be effective tools in combatting social isolation and increasing social participation in later life, promoting physical activity, supporting autonomous and independent living, and improving health and long-term care.¹ Advancing digitalisation also poses challenges to individuals of all ages and societies. The increased pace of digital transformation and automation exacerbates existing inequalities across and within populations and can lead to social and economic exclusion, power imbalances, threats to individuals' privacy and security. There is a 'digital divide', across population groups in the access to, use of, and benefit from digital technology.² Disparities in access and adaptation to digital technology constitute a major concern shared by UNECE countries, affecting ageing populations both at the individual and societal levels.

BOX 1

Digital technologies, Digital literacy, Digital divide, Digital inclusion

Digital technologies is the term used to describe the systems, hardware, and processes used to collect, store, and process data. These can include devices such as smartphones, tablets, and robotics, or services and applications such as the Internet, healthcare applications, e-banking, online shopping, or online gaming.

Digital literacy describes the ability to find, evaluate, create, and communicate information, requiring both cognitive and technical skills. Examples of digital skills in the areas of information, communication, problem solving and software skills include using email applications, using e-government, e-banking, or e-commerce services, and creating and using a social media profile.³

Digital divide refers to the "gap between individuals, households, businesses, and geographic areas at different socioeconomic levels with regard to their opportunities to access information and communication technologies and to their use of the Internet for a wide variety of activities. The digital divide reflects various differences among and within countries".⁴

Digital inclusion means that everyone can contribute to, and benefit from, the digital economy and society by ensuring that digital technologies and the Internet are available, affordable, accessible and that all individuals have the skills and ability to use them. Assistive technologies can promote social inclusion by enabling individuals with cognitive and physical disabilities to perform activities that they would not be able to perform otherwise.

To ensure that individuals of all ages, genders, cultures, socioeconomic backgrounds and geographical locations can benefit from these advantages and positive technological advancements, major political and social efforts are needed. Policy solutions that empower ageing populations to equally participate in a digitalised world, render digital technology more accessible, affordable, and available to persons of all ages, while acknowledging the heterogeneity and diverse needs and interests of older persons are called for. This policy brief puts forward recommendations on how policymakers, service providers, and civil society actors may tackle the digital divide and contribute to building an inclusive and digitally just society.

¹ See for instance Abdi et al, 2018; Baker et al, 2018; Van der Berg et al, 2007; Buyl et al, 2020.

² The digital divide became a mainstream concept after the 1995 United States Department of Commerce report, "Falling through the Net", which raised awareness of unequal opportunities in adoption and access to emerging information and communication technology amongst the American population.

³ See Eurostat definition of digital skills indicators available at https://ec.europa.eu/eurostat/cache/metadata/en/tepsr_sp410_esmsip2.htm.

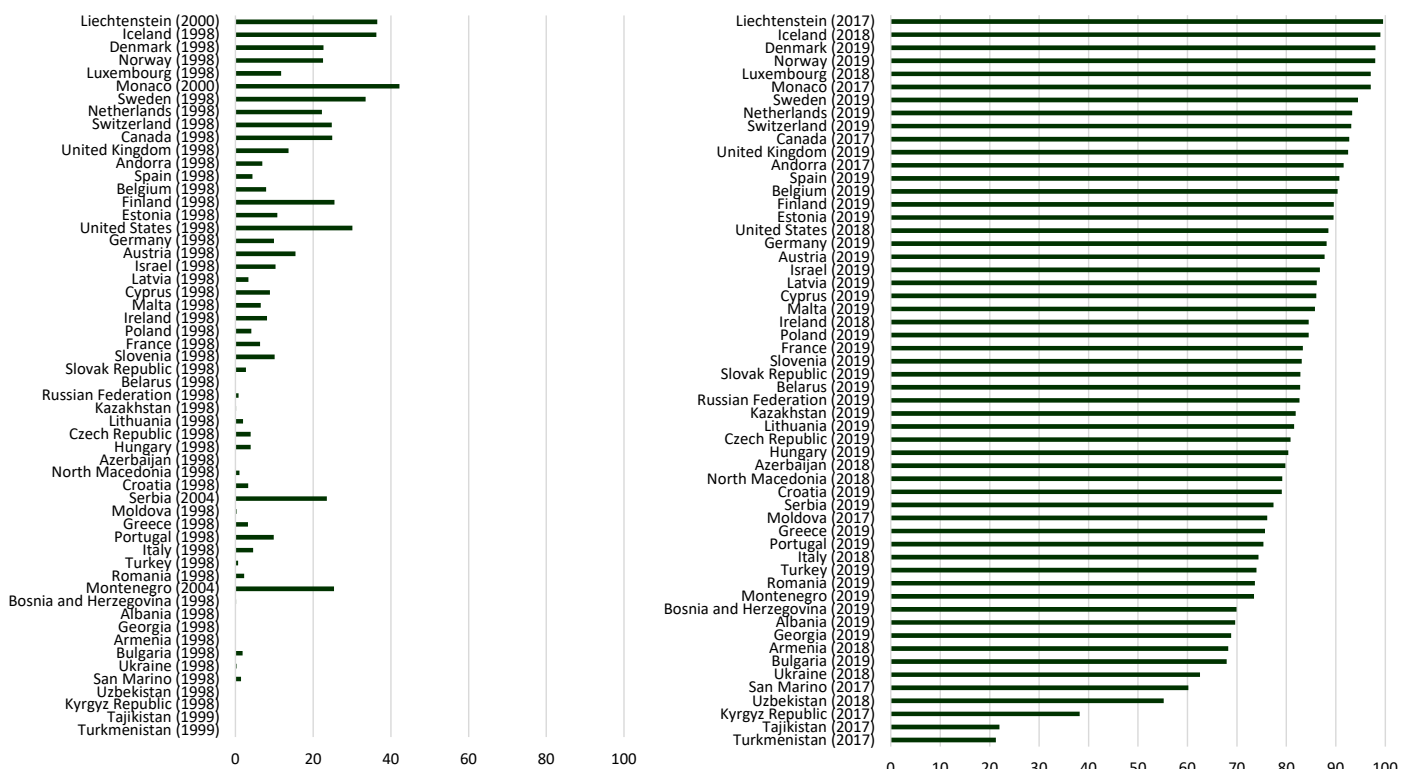
⁴ OECD 2001, p.5.

Inequalities in Internet use: digital divides

Over the past two decades, Internet use has increased across the UNECE region. While only a minority of people used the Internet in the late 1990s, by 2017-2019 a majority of the UNECE region's population connected at least occasionally. As Figure 1 below illustrates, there is a pronounced regional diversity in Internet use. Whereas more than 9 in 10 people in the Nordic countries are digitally connected, there is significantly less Internet engagement in the Western Balkans, Eastern Europe and Central Asia, with only 2 in 10 people in Tajikistan and Turkmenistan indicating in 2017 that they used the Internet during the past three months.

Figure 1

Share of individuals using the Internet across the UNECE region, the late 1990s and late 2010s
(% of population, use of the Internet during last 3 month)



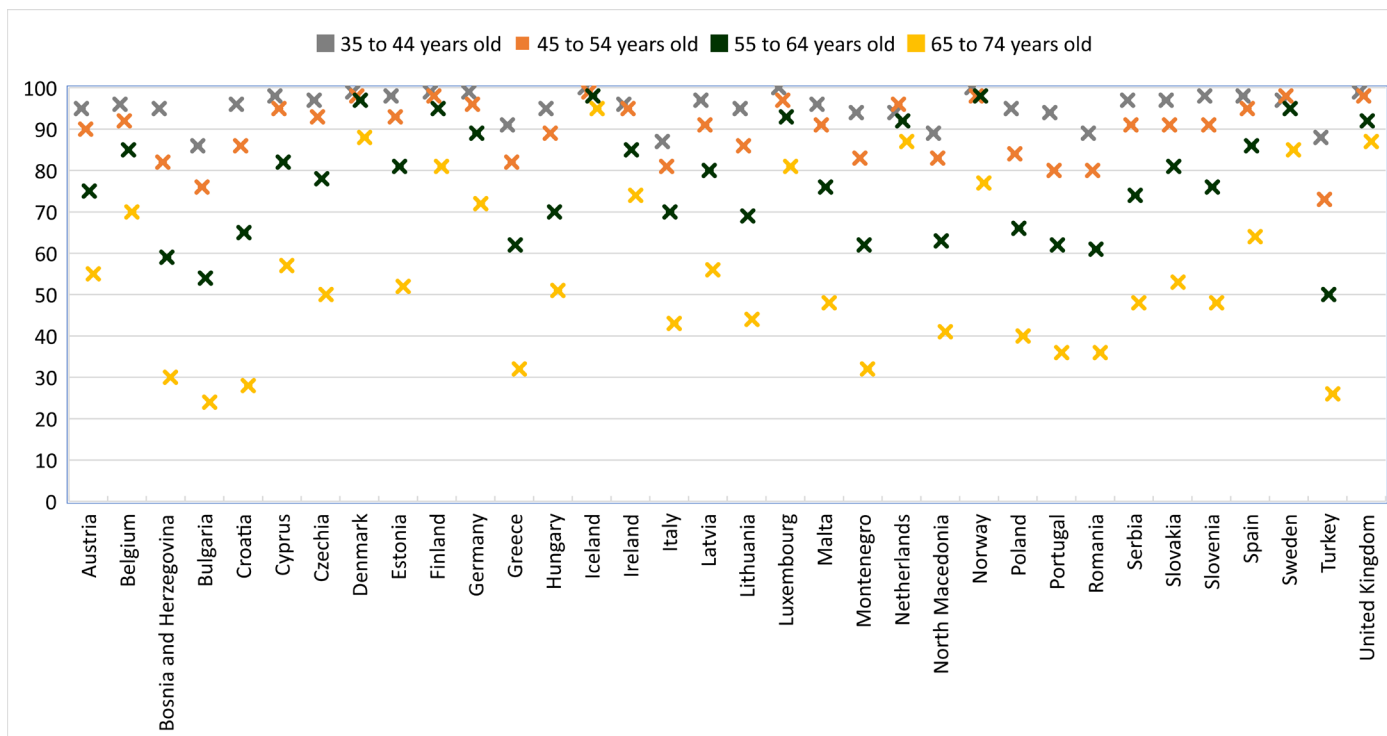
Source: World Development Indicators (2021)

In the literature, a distinction has been made between the so-called 'digital natives' - who were born since 1980, raised and educated in the digital era and 'digital immigrants', who experienced the digital transition during their adult lives.⁵ Comparing Internet use by age groups shows to no surprise that older age groups are less digitally connected. According to findings of the 2019 Fundamental Rights Survey in the European Union,⁶ only one in five survey respondents aged 75 and older at least occasionally engaged in Internet activities, compared to 98 per cent of those aged 16-29 years. As Figure 2 illustrates, frequency of Internet use declines by age.

⁵ Prensky, 2001.

⁶ European Union Agency for Fundamental Rights, 2020.

Figure 2
Internet use on weekly basis by age, selected UNECE countries, 2020
 (% of the respective age group)



Source: Eurostat, ISOC_CI_IFP_FU (2021)

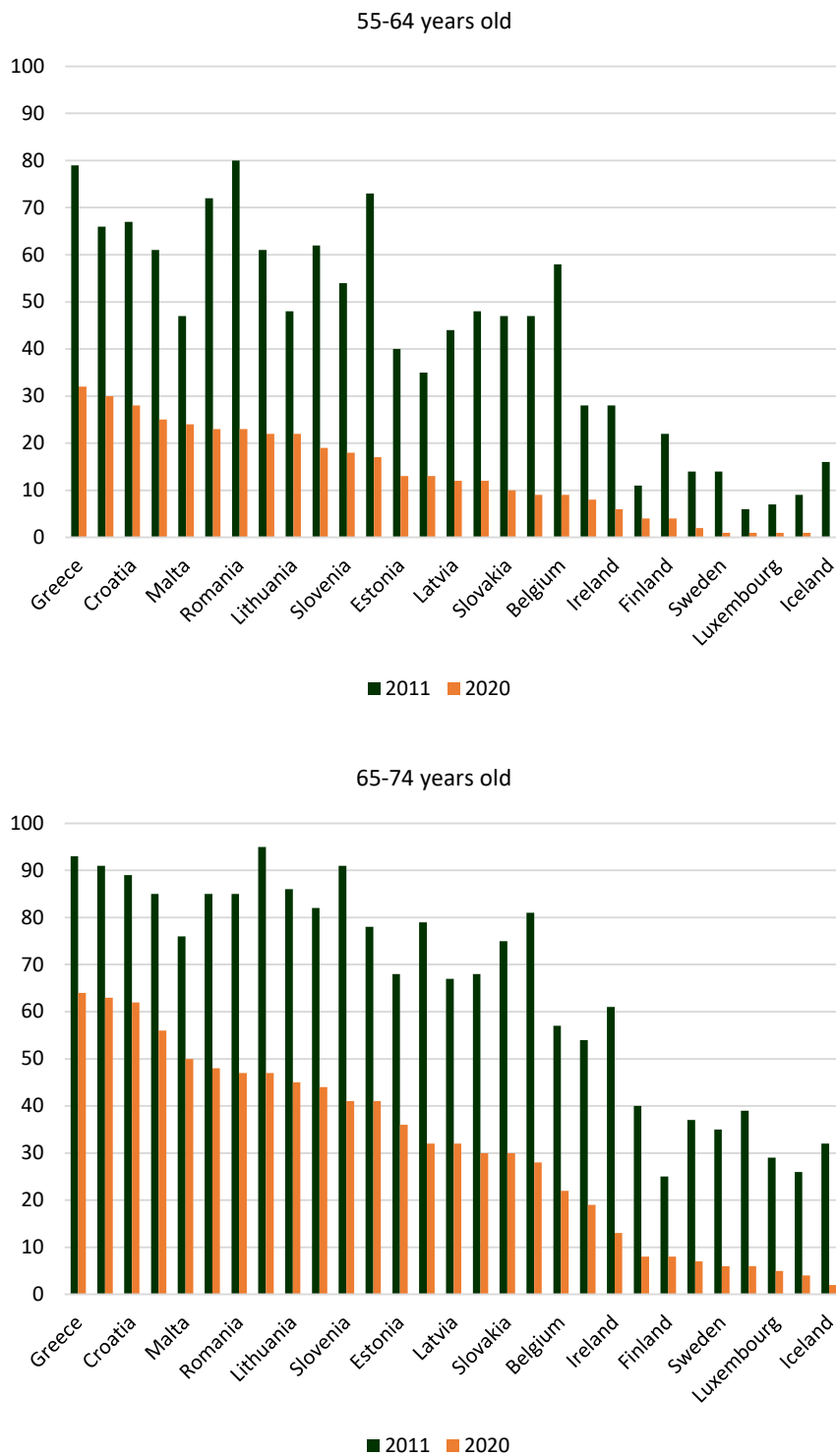
Older persons increasingly adopt and integrate digital technologies in their everyday lives. For instance, in European Union countries 74 per cent of older persons aged between 65 and 74 had never used a computer in 2007, while this was the case for only 44 per cent by 2017.⁷ A survey conducted by the Pew Research Center in the United States in 2019 found that social media use (Facebook) grew noticeably among older age groups. While 21 per cent of persons born in 1945 or earlier had used Facebook in 2012, 37 per cent did so in 2019. Among the ‘baby boomer’ generation (born between 1946 and 1964), Facebook use was reported by 60 per cent of survey respondents in 2019, up from 43 per cent in 2012.⁸

This overall trend towards greater digital inclusion of older age groups does not preclude however significant cross-country and subregional variation. By 2020, only 4 per cent of older persons (aged 65-74) in Norway reported never having used the Internet, compared to 46 per cent in North Macedonia and 71 per cent in Turkey. Data on Internet use among persons aged 55-74 show that over 9 out of 10 older people in Northern Europe (Denmark, Iceland, Netherlands, Norway and Sweden), reported that they had used the Internet in the past three months in 2019 whereas this was the case for less than half of the older population in parts of Southern and Eastern Europe, the Western Balkans, and Central Asia.

⁷ Eurostat 2021.

⁸ Vogels, 2019.

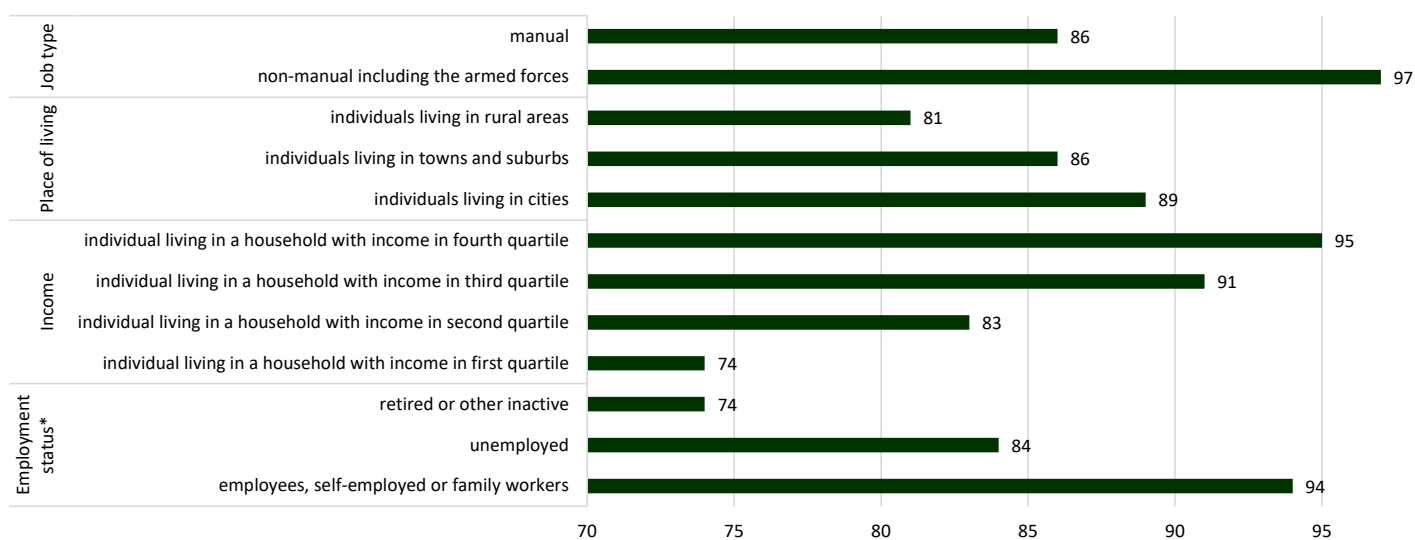
Figure 3
Never used the Internet, selected countries, 2011, 2020
 (% of the population aged 55-64 and 65-74 years old)



Source: Eurostat, ISOC_CI_IFP_FU (2021)

Age, however, is not the only factor explaining digital divides. The cumulative factors of age, gender, socioeconomic background, educational attainment, profession, and geography, among others, play an important role in explaining varying levels of digital technology adoption across and within generations.⁹ Figure 4 illustrates that among the working age population (aged 25-64), there is higher Internet engagement by non-manual workers, urban dwellers, higher income groups and those active in the labour market.

Figure 4
Frequency of Internet use according to employment status, job type, income levels and place of living, EU-27, 2020
 (% of the respective group, use of the Internet once a week (including every day))

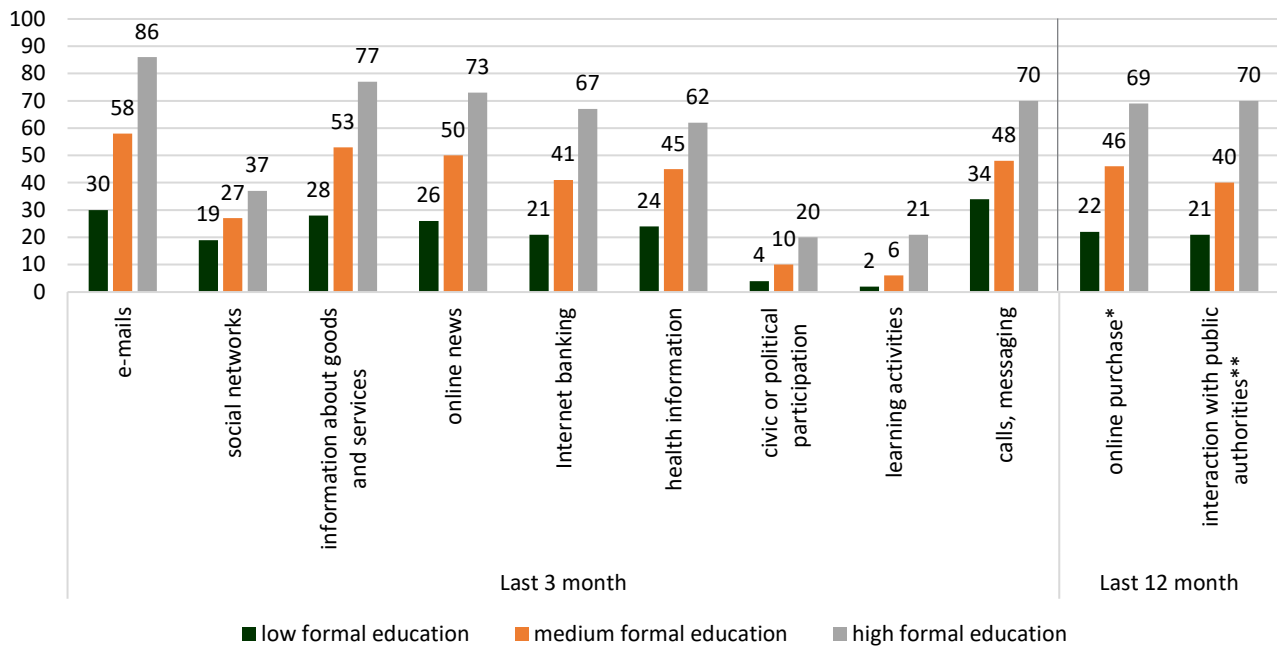


Source: Eurostat, ISOC_CI_IFP_FU (2021)
 Note: data refers to individuals aged 25-64

Older persons with higher education are more active Internet users than those with lower levels of formal education and use the Internet more frequently to access information and services (Figure 5). Education has a stronger influence on Internet use than gender. Men are slightly more likely than women to use the Internet to access information and services, whereas women used digital technologies more frequently than men to communicate via calls, messaging and social media and to access health-related information (Figure 6). Gender differences overall are more pronounced among older age groups and in countries with lower overall levels of digital inclusion (Figure 7).

⁹Fang et al, 2019.

Figure 5
Internet activities by educational groups among individuals aged 55-74, EU-27, 2019
 (% of the respective group)

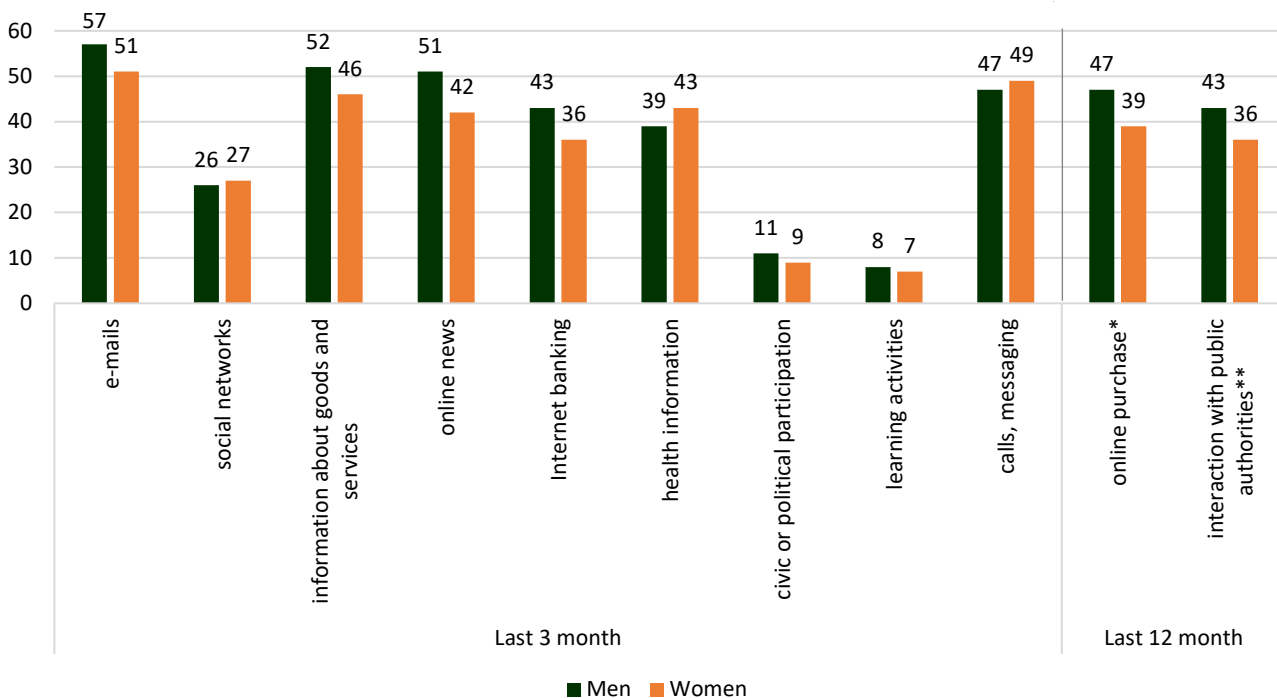


Source: Eurostat, isoc_ci_ac_i , isoc_ciegi_ac, isoc_ec_ib (2021).

* 'online purchase' data are from 2020.

**interaction with public authorities involve any one the three actions: obtaining information from public authorities' web sites, downloading official forms, submitting completed forms.

Figure 6
Internet activities by gender among individuals aged 55-74, EU-27, 2019
 (% of the respective group)



Source: Eurostat, isoc_ci_ac_i , isoc_ciegi_ac, isoc_ec_ib (2021).

* 'online purchase' data are from 2020.

**interaction with public authorities involve any one the three actions: obtaining information from public authorities' web sites, downloading official forms, submitting official forms.

Figure 7
Internet use over 3 months, selected UNECE countries, 2019
 (% of the respective group)



Source: UNECE Statistical Database (2021)
 Note: data on Belarus refers to last 12 month

Barriers to digital technology adoption and use in later life

To understand the barriers to digital technology adoption in later life, it is important to acknowledge the intersection of various factors – cultural, social, economic, psychological, as well as health and disability status that determine whether an older person engages or disengages in using digital technologies. Barriers include, aside from access to digital devices or an Internet connection, lack of adequate skills and experience, lack of self-confidence, motivation and interest, inaccessible design or lack of relevance, and physical or cognitive impairments in later life.

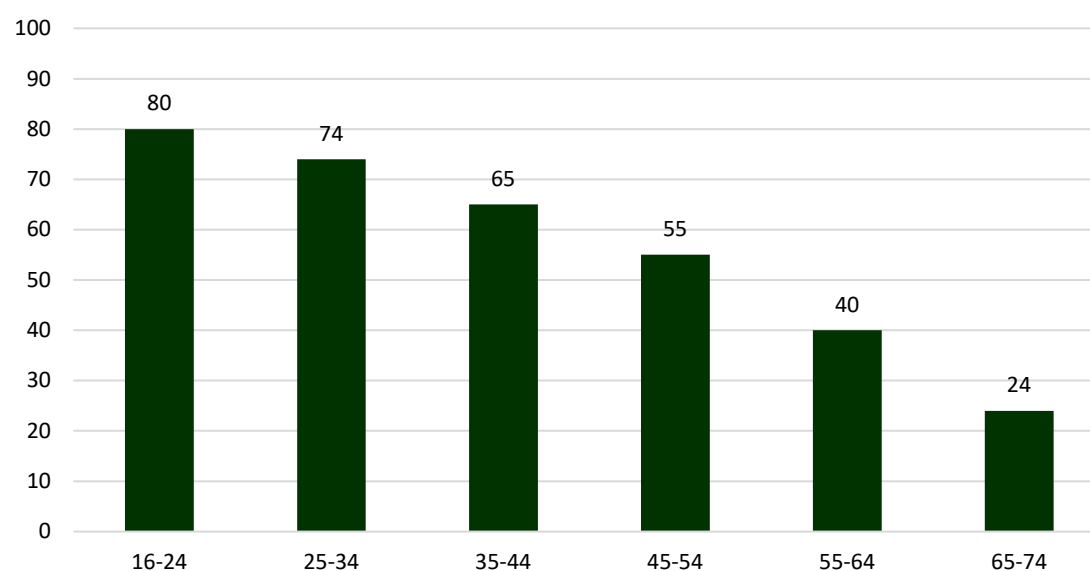
Lacking digital skills

Lacking digital skills is a key barrier to digital technology adoption and use. The European Commission European Pillar of Social Rights Action Plan issued in March 2021 considers basic and above digital skills as a precondition for inclusion and participation in the labour market and society in a digitally transformed Europe and sets the goal for at least 80 percent of the population aged 16-74 to have at least basic digital skills by 2030.

In 2019, this was already the case among youth (aged 16 to 24) in the EU countries, whereas among people aged 45-54 only 55 per cent had basic or above basic overall digital skills, 40 per cent in the age group 55-64 and 24 per cent among those aged 65-74 (Figure 8). Across many other UNECE countries the age gap in digital skills is even more pronounced. There is also significant cross-country variation in digital skills among older persons. While more than half of older persons (65-74) in Norway (51 per cent) and Switzerland (57 per cent) have basic or above digital skills, this is the case for only 3 per cent in North Macedonia and 2 per cent in Turkey.¹⁰

As Figures 4 and 5 illustrated, a person's socioeconomic, educational and professional background are predictors of digital technology usage in later life.¹¹ Older persons today with lower educational levels may have worked in professions with low degrees of digitalization during their working lives, exposing them less to the need to obtain digital skills and adopt digital technology use in their everyday lives.

Figure 8
Share of individuals who have basic or above basic overall digital skills by age groups, EU-27, 2019
(% of respective age group)



Source: Eurostat, isoc_sk_dskl_i, 2019, % of population

Ageism

Ageism can be a barrier to digital technology adoption and use.¹² Stereotypes and prejudice about older persons' ability and willingness to use digital technologies are widespread, often disregarding their diversity of skills and experiences. Depictions of older people as technophobic, incapable, or uninterested in technological advancements are omnipresent and widely accepted in cartoons, the media, birthday cards, advertisements and everyday social interactions. Over the life course, older persons may adopt negative narratives about "the older technology user", and internalise age stereotypes.¹³

¹⁰ Eurostat data on Individual's level of digital skills 2019. isoc_sk_dskl_i accessed in May 2021.

¹¹ Helsper and Reisdorf, 2013.

¹² Köttl and Mannheim, 2021.

¹³ Levy, 2009.

This is problematic as internalised ageist assumptions about older people in the context of digital technology use have been found to significantly impact older persons' willingness to engage in digital technology and can impede users' actual digital performance.¹⁴ At the same time, low digital technology engagement is associated with more negative self-perceptions of ageing over time.¹⁵ Disempowering social environments may amplify psychological barriers known to hinder digital technology use in older age, such as low self-efficacy and self-esteem, internalized ageism, and a lack of time, motivation, or interest.¹⁶ This can develop into a vicious cycle where ageism can discourage users from adopting digital technology, and the lack of digital skills can in turn result in exacerbating existing ageist stereotypes.

Design

Unfriendly design of digital technology or lacking relevance for older persons may be a barrier to use. Designs of interfaces often do not address the needs of the diverse users and may fail to meet the criteria for accessibility and inclusivity. This can negatively affect older persons, in particular those with physical or cognitive disabilities. Design processes often take place without the input of all end-users, creating pre-conceived judgements as to who is expected to use a specific digital technology. When digital technology is designed to specifically target older individuals or persons with a disability, it often reflects designers' implicit stereotypes about 'the older technology user'.¹⁷ Sometimes, despite knowledge of the possible functions of technological devices such as heart rate monitors in smartphones, older individuals may not be completely confident in knowing how to take full advantage of such functions. Digital technology design for older persons is often over-proportionally targeted on health care technologies and rarely focused on digital technology for leisure, reflecting the health paradigm and societal assumptions about the needs of older persons. If older persons feel that digital technologies and services provided are not relevant to their interests and needs, they may be less interested in using them. Older persons whose friends, spouses, children and grandchildren involve them in digital communications, providing purpose and support in their use, may be more likely to adopt digital technologies in their everyday lives.

Physical and cognitive impairments

Physical and cognitive impairments in later life can hinder older persons from using digital technologies or cause their disengagement even if they had regularly used digital technologies before. Impaired vision or hearing, for example, can be barriers to using and benefiting from Information and Communication Technologies. Difficulties in use can increase frustrations and discourage engagement if adequate support is lacking. Cognitive impairments, such as dementia, can make it difficult for older persons to orient themselves in digital environments or to keep abreast of rapidly changing technologies. If tailored interventions take account of these individual circumstances and needs, for example in the case of dementia, digital skills can be learned and provide benefits, for example by enabling social connections with family members through video calling¹⁸ or stimulating memory training through virtual reality experiences.

Towards digital inclusion and empowerment of older persons

International policy dialogue on the promises and risks of digitalisation underlines the importance of ensuring that the benefits of digital technology can be enjoyed by all while mitigating associated risks. Digital inclusion, capacity-building and the protection of human rights in the digital era have been highlighted as key areas for action in the United Nations Roadmap for Digital Cooperation issued in 2020.

¹⁴ Choi et al, 2020.

¹⁵ Köttl et al, 2020.

¹⁶ Zambianchi and Carelli, 2018; Fang et al, 2019; McDonough, 2016. ¹⁷ Fisher et al, 2020.

¹⁸ See for example the project DemenTalent in the Netherlands: <https://unece.org/fileadmin/DAM/pau/age/Policy-Seminar/Ruud-Dirkse-Policy-Seminar-on-Ageing.pdf>.

BOX 2**United Nations Roadmap for Digital Cooperation, 2020**

In June 2020, the Secretary-General of the United Nations published a Roadmap for Digital Cooperation outlining 8 key areas for action:

1. Achieving universal connectivity by 2030
2. Promoting digital public goods to create a more equitable world
3. Ensuring digital inclusion for all, including the most vulnerable
4. Strengthening digital capacity building
5. Ensuring the protection of human rights in the digital era
6. Supporting global cooperation on artificial intelligence
7. Promoting trust and security in the digital environment
8. Building a more effective architecture for digital cooperation

<https://www.un.org/en/content/digital-cooperation-roadmap/>

Across the UNECE region, a large majority of countries have developed national strategies for digitalisation. These commonly address the need for broadband infrastructure (including broadband access) and access to technological devices, as well as encouraging lifelong learning so that everyone, younger and older, can learn the skills required to safely and securely manoeuvre digital environments. Many strategies also identify the possibility for development and improvement in business, banking, healthcare, and governance if digital technology is adopted and embraced by wider society.

Few strategies however explicitly address the specific needs of older persons in relation to adopting digital technology, and the benefits they may reap as a result of becoming more digitally literate and active. The National Digital Strategy for Ireland included an awareness-raising and motivation campaign describing some of the key benefits of engagement with the Internet for older persons via short video clips, covering communication through social media, email, or video-calling sites, as well as online transactions.¹⁹ Slovenia, Spain and Romania identified the need to ensure adequate resources and tools to help older persons learn how to use digital technology. In Romania, public libraries began to provide free E-Skills training to older persons and other 'hard-to-reach' citizens as part of the 'Biblionet' programme. Israel's national digital programme highlights ways in which technology can be used to narrow economic inequality and social disparities, for instance through remote learning in rural or isolated areas, providing greater opportunities for disadvantaged populations. Other UNECE countries, including the Czech Republic and the Slovak Republic, have developed specific strategies to improve digital literacy and encourage older persons to adopt digital technology in their daily lives.

This policy brief puts the focus on four key areas for enhancing digital inclusion of older persons: (1) ensuring access to goods and services that involve digital technology, (2) enhancing digital literacy among older persons, (3) leveraging the potential of digital technologies for active and healthy ageing and the well-being and empowerment of older persons, and (4) ensuring the protection of human rights of older persons. These are discussed in turn in the following sections.

¹⁹ Doing more with Digital, National Digital Strategy for Ireland, 2013. <https://assets.gov.ie/27518/7081ceec170e34c39b75cbec799401b82.pdf>

Ensuring access to goods and services that involve digital technology

Information and everyday services such as communication, health and social care, banking, education, transport, shopping and entertainment increasingly move online as societies advance digitalisation. Most interactions with public authorities in the UNECE countries have also been moved online as part of an e-Government development effort. Presently, however, on average less than one out of three older men and women have been using the Internet for this purpose in EU countries and even less in countries where Internet use by older persons is relatively low in general. Efforts to enhance digital inclusion need to ensure that people of different abilities are able to access and benefit from them.

Universal connectivity: ensure that everyone can access the Internet

Over the past 20 years, Internet connectivity has increased significantly but developed unequally across the UNECE region. Although broadband Internet access is by now widely available across Europe and North America, Internet use is still significantly lower in the Eastern part of the region and in particular in Central Asia (see Figure 1). Developing high-speed Internet infrastructure and broadening geographical coverage of Internet access therefore remains a priority for digital strategies in the UNECE region to achieve the goal of universal connectivity. It is important to bear in mind that national averages in connectivity mask inequalities in access for certain population groups, for instance care home residents or other institutionalised populations.

In the United Kingdom, research by the Care Quality Commission found that 7000 care homes in England were without adequate Internet connection in 2020 and that only a third of the care home sector was fully digital. With the importance of digital connection becoming imminent during the COVID-19 pandemic, NHSX and NHS Digital worked with telecommunications companies to publish a series of easily accessible offers to help care homes and care providers get connected to the Internet or to upgrade their existing internet connectivity.²⁰ Achieving universal connectivity in care institutions contributes to facilitating administrative processes, and access to (tele-) health and other services, but also enables residents to benefit from the advantages of digital inclusion. It is a precondition for initiatives that seek to enable care home residents to learn digital skills and to stay in touch with friends and relatives, which has been particularly pertinent during periods of physical distancing and isolation during the COVID-19 pandemic.

Financial support to facilitate access to digital technologies, devices and the Internet

The cost of broadband Internet connections, smartphones, computers, software but also assistive devices can be prohibitive access barriers for individuals lacking the necessary means. Measures to support low-income households with the costs of broadband connections make an important contribution to ensuring equal access and digital inclusion irrespective of socioeconomic background. The COVID-19 pandemic has put further emphasis on the importance of being digitally connected to be able to access essential information and services as well maintaining social connections during lockdowns and physical distancing. Several countries have introduced financial subsidies for those struggling to afford Internet connections to reduce digital exclusion. In the United States, for example, an Emergency Broadband Benefit Programme (EBBP) was introduced in 2021 by the Federal Communications Commission to help households struggling to pay for Internet service and devices during the pandemic by providing discounts.²¹

In Belgium, the French Community Commission of the Brussels region (Commission communautaire française de la Région Bruxelles-Capitale) awarded a one-off-grant of EUR 900,000 to 165 associations working with vulnerable populations for the purchase of digital devices to help tackle the digital divide that became more evident during the pandemic.²²

²⁰ <https://www.digitalsocialcare.co.uk/offers-from-internet-providers-to-get-care-homes-connected-during-covid-19/>, accessed on 25 May 2021. NHSX is a joint unit of the National Health Service England and the Department of Health and Social Care, supporting local NHS and care organisations to digitise their services, connect the health and social care systems through technology and transform the way patients' care is delivered at home, in the community and in hospital. <https://www.nhsx.nhs.uk/about-us/who-we-are/>; NHS Digital design, develop and operate the national IT and data services to use data to improve health and care <https://digital.nhs.uk/about-nhs-digital>.

²¹ <https://leadingage.org/cast/new-policy-could-help-older-adults-afford-internet>, accessed 25 May 2021.

²² Information provided by the National Focal Point on Ageing from Belgium.

Design for all: ensure age-friendly digital technology

Technology designs often do not sufficiently cater for the diversity of needs of end-users, affecting for example older people, children, women or persons with disabilities. Usability, usefulness, functionality, acceptability and accessibility are decisive when populations are expected to adopt a new device or service.²³ A number of international and regional instruments call for improved digital accessibility. They include the United Nations Convention on the Rights of Persons with Disabilities and the European Accessibility Act.

BOX 3

Key instruments fostering digital accessibility

United Nations Convention on the Rights of Persons with Disabilities, 2006

The United Nations Convention on the Rights of Persons with Disabilities (UN CRPD) seeks to ensure that people with disabilities enjoy the same human rights as other members of society and have access to equal opportunities. Several of its articles pertain to the human rights implications of digitalisation:

Article 9 on Accessibility requires countries to identify and eliminate obstacles and barriers and ensure that persons with disabilities can access, among other things, information and communications technologies.

Article 21 on Freedom of expression and opinion, and access to information requires State Parties to take all appropriate measures to provide information in accessible formats and technologies appropriate to different kinds of disability, and to urge private entities, that provide services to the public, including through the Internet, and the mass media to provide information and services in accessible formats.

Article 22 on Respect for privacy requires State Parties to ensure persons with disabilities are not subjected to arbitrary or illegal interference with their privacy, family, home, correspondence or communication. The privacy of their personal, health and rehabilitation information are to be protected like that of others.

Article 25 on Health calls upon State Parties to “require health professionals to provide care of the same quality to persons with disabilities as to others, including on the basis of free and informed consent by, inter alia, raising awareness of the human rights, dignity, autonomy and needs of persons with disabilities through training and the promulgation of ethical standards for public and private health care”

<https://www.ohchr.org/EN/HRBodies/CRPD/Pages/ConventionRightsPersonsWithDisabilities.aspx#21>.

European Web Accessibility Directive, 2016

The European Web Accessibility Directive was adopted by EU Member States in 2016 with the goal of making all public sector organizations more accessible online. The Directive requires websites and mobile applications of public sector bodies to meet specific technical accessibility standards including an accessibility statement for each website and mobile application, a feedback mechanism enabling users to flag accessibility problems or request information published in a non-accessible format and regular monitoring of public sector websites and apps and reporting on the results.

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016L2102>.

European Accessibility Act, 2019

The European Accessibility Act reflects the obligations related to the UN CRPD and the Web Accessibility Directive and was developed to facilitate trade between EU Member States in accessible goods and services. It covers everyday digital products and services with potentially diverging accessibility requirements across EU countries, e.g., computers, automated teller machines (ATMs), ticketing and check-in machines, smartphones, banking services, e-books, e-commerce. To avoid and minimize social exclusion from important everyday technologies, countries need to ensure that despite constantly developing technological features or interfaces, the option to use non-digital services is maintained.

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0882>.

²³ Fang et al, 2019.

These instruments have guided the development of national legislation for digital accessibility across the UNECE region, benefitting older technology users, persons with disabilities as well as the general population. Involving older persons in the design process of digital goods and services, can ensure that these are not only user friendly but also relevant to their needs and interests.

Encourage participatory design and co-design of digital technology

Full user involvement has been found to enhance the likelihood that a designed technology will eventually be accepted and used. It promotes a positive sense of participation and ownership in older persons and improves the quality of the design.²⁴ As usability problems can be identified and resolved before a system is launched, development time is significantly reduced.²⁵ Importantly, user involvement can also help to highlight and counter stereotypes about older persons.²⁶

A multitude of options, methods, and instruments to integrate users into the innovation process exist. Approaches include co-design/co-creation and participatory design.²⁷ In participatory design, end-users take part in all stages of the design process as well as in the implementation of the product or device; the development of a product is hence fully based on end-users' needs and intentions. Co-creation processes allow end-users to directly impact on the development of technologies to ensure barrier-free use from the start. Ideally end-users are involved throughout the whole design process, starting with the users' needs and ending with an evaluation of whether the applied methods have improved the results.

Including older or persons with disabilities merely to legitimize a specific technology or involving older adults without acknowledging and implementing their feedback is counterproductive and should be avoided. Technology design targeting older persons with and without disabilities should also carefully refrain from the interventionist rationale of presenting technology as the solution to "problems of ageing".²⁸ Aside from overly focusing on technologies supporting health care and independent living, the design of digital artefacts and services for leisure and social interaction should be equally promoted.

Czech Republic: Virtual Reality (VR) in activating older persons

Virtual reality can serve as a an activation tool which could break down prejudices of older people towards new technologies. A VR experience can positively affect their self-expression and self-confidence, motivate them, stimulate their curiosity and to strengthen their well-being. A new project by the Faculty of Theology, University of South Bohemia, the Czech Institute of Informatics, Robotics, and Cybernetics and the Association for Virtual and Augmented Reality, in collaboration with the Ministry of Labour and Social Affairs of the Czech Republic (2019-2022) works with nursing home residents to create VR software - a set of virtual experiences providing a naturally stimulating environment. Older persons in nursing homes were consulted about environments they appreciated and as a result of the research Czech forests, travelling in the Czech Republic and abroad and a centre of a Czech town or village were selected to inspire the creation of virtual environments. The project will provide instructions on using this new technology and practical examples of using experiences in a virtual environment for employees in nursing homes. Worksheets for activity coordinators in nursing homes and informal carers provide instructions on how to work with virtual reality experiences, for example in group or individual memory training. A first version of the software will be tested in nursing homes to provide feedback from older persons and activity coordinators, and subsequently will help to adapt the software to their requirements and make it more user friendly.

Source: Information provided by National Focal Point on Ageing from the Czech Republic.

²⁴Fischer et al, 2020.

²⁵Harte et al, 2017.

²⁶Frennert and Östlund, 2014.

²⁷Kushniruk and Nøhr, 2016; Harder et al, 2013; Merkel and Kucharski, 2019.

²⁸Peine and Neven, 2020.

Providing tailored support in using everyday services that move online

In addition to ensuring accessibility in the design of the digital products and services, tailored support may be needed to enhance older people's ability and confidence in using them. This is particularly pertinent with regard to essential everyday services, such as e-banking, e-Government, and e-commerce as well as e-learning.

e-banking: supporting older persons in making financial transactions online

Financial services are increasingly provided online, offering bank customers the convenience of accessing their bank accounts and making financial transfers from home. According to 2020 data from the EU-27, 57 per cent of people in the age group 45 to 54 used the Internet for online banking, compared to less than a third (31 per cent) of persons between 65 and 74 years old. Older men are more likely to use online banking than women (see Figure 6). To support older customers in using digital services, financial institutions can (and do) provide targeted support services. This good practice can be encouraged through government measures. In Canada, a new Code of Conduct that came into effect in 2021 has established key principles to guide banks in the delivery of banking services to meet the needs of older persons. The mobile bank branch example from Slovenia described below combines support with digital services facilitated in person by a banking adviser.

Support to older persons with online banking services in Canada and Slovenia

Code of Conduct for the Delivery of Banking Services to Seniors, Canada

Having identified a lack of engagement between the banking sector and older persons, the Minister of Finance, Minister of Seniors, and Financial Consumer Agency of Canada (FCAC) adopted in 2019 the 'Code of Conduct for the Delivery of Banking Services to Seniors'. The Code establishes seven key principles to help guide banks and improve delivery of personal banking services to persons aged over 60 years. The seven key principles include: appropriate policies, procedures and processes to support the code; effective communication; appropriate training for bank employees and representatives; mitigation of potential financial harm to seniors; branch closures; and public disclosure of steps taken to support the code's principles. As part of the Code, each bank is also required to appoint a 'Seniors Champion' who works to promote the interests of older persons. It is intended that implementation of this strategy will help make older persons more comfortable accessing information and using online banking services.

Slovenia – NLB Mobile Branch Bank&Go

In order to encourage older persons to begin using digital banking services, a mobile banking vehicle with facilities including an ATM machine, an office, and a waiting room was developed in Slovenia. The mobile banking vehicle will visit up to 40 destinations every two weeks, providing advice and demonstrating how older persons can utilise their mobile phones (and other digital devices) to perform online banking services. Services available on the mobile banking branch include opening a bank account and banking package; making cashless payments; withdrawing or depositing cash and paying bills using an ATM; ordering a payment; applying for a loan; making a savings or deposit account and other investments; advice about life and non-life insurance; and teaching customers how to utilise digital services. This initiative combines face-to-face contact with a banking advisor with digital technology in a bid to help older persons become less wary or worried about using digital services.

Source: Information provided by National Focal Points on Ageing from Canada and Slovenia.

e-Government: facilitating access to government-provided information and services

Governments increasingly provide information and services of relevance for older persons online. The most recent United Nations E-Government Survey 2020 found that the number of countries providing web-based information and services specifically targeting digitally excluded population groups has grown by around 11 per cent since 2018. The greatest boost has been documented in the supplies of online services for older persons and migrants (14 per cent increase) as well as for women (11 per cent increase). E-Government services include the provision of information on retirement, housing facilities, application processes for long-term care programmes, and options for care and support at home.²⁹

²⁹ United Nations, Department of Economic and Social Affairs, 2020, p.27.

While the online availability of government information and services can facilitate access, some older persons have difficulty in navigating electronic government portals. 2020 data for the European Union (EU-27) indicates that only a third (34 per cent) of persons aged 65 to 74 used the Internet for interactions with public authorities in the past year compared to 61 per cent of persons between 45 and 54. Older individuals (55-74 years) with low levels of formal education engage the least with e-Government services: only 16 per cent used the Internet to obtain information from public authorities web sites, 10 per cent downloaded official forms and 15 per cent submitted completed forms. This compares to 62 per cent of older persons (55-74 years) with high levels of formal education who obtained information from public authorities websites in the past year, 49 per cent downloaded official forms and 54 per cent submitted completed forms in the past year.³⁰ To facilitate access to government-provided information and services, the Serbian Red Cross developed a step-by-step guide for selected e-Government services and provides coaching for older persons.

Support to older persons in using e-Government services, Red Cross Serbia

As part of the 'Stronger and Connected' project, volunteers of the Red Cross in Serbia provide coaching and support for older persons via telephone, Skype, or other digital means. A step-by-step guide for the use of selected e-services, developed in a previous project, is used to assist older persons in using the e-Government portal for the administration of personal documents, scheduling of appointments, medical drugs search, and review of court cases at the Portal of Serbian Courts as well as several popular e-banking applications in Serbia. Additionally, the coaching includes information and assistance in identifying and using trusted and reliable sources of information on the COVID-19 epidemic and the protection measures. Coaching is adapted to the needs and preferences of the older beneficiaries.

Source: Information provided by the Red Cross in Serbia.

e-commerce: using the Internet to purchase goods and services

Online shopping and deliveries of everyday goods and services, including the purchase of food, clothing, medication, tickets for public transports, and entertainment is becoming more common practice and, during the COVID-19 pandemic, has become more heavily relied upon. However, many older persons do not yet have the habit of shopping online. In 2020, only one in four among the EU-27 population aged 65 to 74 indicated to have made an online purchase in the past three months and only one in three indicated to have done so in the past year.³¹

This indicates that a majority of older persons do not yet benefit from the opportunities online shopping can provide especially for those with physical impairments who may have difficulties travelling to shops and carrying goods home and could benefit from online purchases and delivery services. Social service providers and NGOs, such as Age UK, offer support with online shopping, by placing orders on behalf of older persons who do not have Internet access, and arranging for home deliveries.³²

e-learning: digital inclusion as a precondition to access learning opportunities

According to a report from the PEW Research Center, technology assets such as smartphones or home broadband are strongly linked to a person's ability to engage in personal or professional online learning.³³ Lifelong learning opportunities in the 21st century, and in the situations such as the COVID-19 pandemic, are increasingly dependent on digital literacy and access to digital devices and the Internet. Digital literacy is thus a precondition for being able to access other learning opportunities.

Maintain offline access to goods and services

Given the multitude of reasons for digital exclusion discussed, it is essential to maintain offline access to goods and services at all times. There is a growing practice of charging additional fees for offline services, for example for banking transactions or the purchase of tickets in public transport, which represents a penalty fee for those unable, or unwilling, to access services online.

³⁰ Eurostat dataset on 'E-government activities of individuals via websites', isoc_ciegi_ac.

³¹ Eurostat, 2020. isoc_ec_ib20 database, accessed 8 June 2021.

³² <https://www.ageuk.org.uk/services/in-your-area/shopping/>, accessed on 25 May 2021.

³³ Horrigan, 2016

This can be especially problematic for those population groups who are digitally excluded because they cannot afford digital equipment and Internet subscriptions and contributes to creating barriers to social participation, exacerbating existing inequities. Service providers should be encouraged to provide offline access to services without additional costs to the end-user and to provide offline assistance in using their online services.

Enhancing digital literacy to reduce the digital skills gap

The reasons for the digital divide go beyond questions of access in terms of availability and affordability discussed earlier (which in the literature has been referred to as the “first level of digital divide” of “haves” and “have nots”) to questions of disparities in computer and Internet use and benefits derived from it.³⁴ The second level of the digital divide derives from disparities in skills, competence and ability to use the Internet and ever-changing digital innovations and Internet security requirements. Digital literacy is one of the major enablers for successful adoption of digital technologies and ability to benefit from goods and services provided online.

Learning to safely use digital technology needs to start early on and skills need to be maintained and updated throughout life. It is essential to success in school, as well as to personal and professional growth during adulthood and in later life. A life-course approach is necessary to ensure that all age groups can acquire digital skills and keep up to date with rapid technological developments. Widespread ageist notions assume that learning stops in later life, and that older individuals are not capable of learning to use new digital technology. Current evidence shows that cognitive and personal growth is attainable at every age, as long as individual learning needs are adequately addressed and diversity in abilities recognized.³⁵ Digital literacy programmes can empower older persons, foster social participation, and increase autonomy and independence in later life. Tailored peer- or intergenerational training initiatives targeted at older persons have proven to be effective in enhancing their digital literacy.³⁶

An action plan for the Digital Literacy Strategy 2015-2020 of the Czech Republic focuses on providing access to digital technology for people at risk of digital exclusion and encourages intergenerational education programmes to improve digital literacy. Measures include improving access to public networks in digital centres such as libraries and lifelong learning centres and to create learning centres for digital education in public spaces such as schools, libraries and museums.³⁷ A new project in the Slovak Republic planned as part of a major digital reform intends to analyse, test and increase digital skills among older persons in 2023-2026 with plans to provide free-of-charge basic digital skills training to nine thousand older persons. As part of the project, more digitally literate older persons, “digital champions”, will be enlisted to train people in care homes and community centres.³⁸

Tackle ageism and change the narrative about older technology users

Negative stereotypes and prejudice against older technology users and self-induced ageism discouraging older persons from engagement with digital technologies can act as a barrier to obtaining digital skills, actively using the Internet and reaping the benefits digitalisation can offer. To tackle this barrier to digital inclusion, governments and civil society organizations across the UNECE region are working to change the narrative surrounding older technology users, and to eradicate ageist notions. This is important not only to engage older generations in adopting technologies in their everyday lives and developing their digital skills, but also to sensitize developers and service providers to the diversity of needs and preferences among older persons to ensure that products and services developed are relevant.

³⁴ <https://www.emeraldgrouppublishing.com/news-and-press-releases/evolving-digital-divide-first-third-level>

³⁵ Leanos et al, 2020.

³⁶ Lee and Kim, 2018.

³⁷ Information provided by the National Focal Point on Ageing from the Czech Republic.

³⁸ Information provided by the National Focal Point on Ageing from the Slovak Republic.

The media and advertising can play a role in changing the narrative and social discourses. By involving individuals of all ages when advertising technology products or by portraying older people as competent users, the media can contribute to promoting inclusive and ageism-free digital environments. Awareness-raising campaigns and initiatives can attempt to change social perceptions. The German National Association of Senior Citizen' Organizations (BAGSO), for example, organized a competition stimulating the creation of cartoons that deal with various influences of digital technology on the lives of older people. It reached 241 participants, aged between 11 and 85, who submitted 396 entries from Austria, Denmark, France, Germany, Slovakia, Sweden, Switzerland, and Syria. The project encouraged people to consider the importance of older persons' active use of digital technologies.³⁹

Digital skills training for older persons in Austria, Finland and Germany

“Technology in Brief” – Tablets and Smartphones, Austria

“Technology in Brief” is an educational programme for older persons, seeking to convey technical skills when it comes to using a computer, the Internet, social media, digital cameras, mobile phones and tablets. Among others, video-communication and social media interactions are the most requested skills older persons wish to obtain. Dedicated courses need flexible learning contents, which are adapted to the needs and the previous knowledge of older persons and a special commitment of the young trainers. The project follows three basic principles: intergenerationality, regional structure and low costs for participants. Young trainers provide low threshold courses for smartphones and tablets for older persons close to home. The development of course materials adapted for the needs of older persons and the establishment of a hotline are further parts of this project.

Collaborative Work with digital Media, Austria

The aim of this initiative is to promote access to digital media for older people and increasing their digital skills to ensure digital inclusion and participation opportunities. To achieve this goal it provides low-cost, age-appropriate and gender-sensitive training courses close to home on how to use new technologies and media and to increase digital skills so that older people can use modern technologies to manage their everyday lives and participate in social life. The project promotes the inclusion and connection of older persons through awareness-raising measures and the design of learning processes by organizing an autonomous learning network, conducting group and individual coaching sessions in a “Digi-Café” and conducting development workshops with a focus on podcast and video, as well as multiplier work and information.

“SeniorSurf” activities, Finland

SeniorSurf activities provide support for digital guidance activities intended for older persons, produce instructional and supporting materials and collect these materials on the SeniorSurf.fi website. Digital guidance refers to tuition organised by non-profit organizations and provided mainly by older volunteer (peer tutors).

Service Centre for Digitalisation and Education for Older People, Germany

The Service Centre provides information and guidance, via phone, online, and presentations, to assist older persons in learning how to use technology. The Centre connects with institutions and offers over 1000 courses and seminars aimed at providing advice on education and digitalisation in older age. Older people can search for activities in their neighbourhoods. The website www.wissensdurstig.de also provides useful information for education providers and good practice examples. The Service Centre is hosted by BAGSO and funded by the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth.

“Digital Angel” project, Germany

With the project “Digital Angel” (*Digitaler Engel*), the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth supports the active participation of people over the age of 60 in social life and enables them to lead self-determined lives in an increasingly digitalised society. The project is a low-threshold advisory service and follows an outreach approach. Through personal contact, the “Digital Angel” teaches older people how to use digital services and devices safely in their everyday lives, for example safe online shopping or social interaction.

Source: Information provided by National Focal Points on Ageing from Austria, Finland, and Germany, and BAGSO.

³⁹ <https://www.bagso.de/themen/karikaturenwettbewerb/> (in German language).

Intergenerational contact and learning have been highlighted as effective measures to enhance older adults' digital technology adoption, and to combat ageism.⁴⁰ Intergenerational technology training programmes may target both older and younger people, increasing confidence among older persons to use technology as well as increasing gerontological literacy among younger people to tackle age stereotypes.⁴¹ Intergenerational interventions that aim to deconstruct age stereotypes in the context of digital learning may include facts on ageing, experiential learning, and positive exposure.⁴²

Safely and securely navigate digital environments

Internet security is an important aspect of digital literacy to enable older persons to safely and securely use digital technologies and the Internet. Digital training programmes for older persons should cover aspects of Internet security such as recognizing and avoiding online scams, choosing strong passwords, protecting computers and devices from viruses through anti-virus and anti-spy software and keeping operating systems up-to-date, protecting one's wireless network. Other aspects include protecting one's privacy on social media and safely effecting transactions when shopping or banking online.

Older persons teaching their peers in safely and securely using digital technology, Luxembourg

The "Silver Surfer" project in Luxembourg enlists older volunteers, specifically trained in Internet security, to instruct other older persons to safely and securely use digital technology. As well as helping increase digital literacy amongst older adults, it also encourages active participation of older persons in society. The project provides training to senior citizens as "Silver Surfers" based on the "seniors for seniors" method and makes them act as multipliers. It promotes volunteering among older persons and encourages lifelong learning as senior citizens get a base training, which is then supplemented with regularly additional trainings about specific topics; it supports active participation of older persons in society and valorises their contribution and competences. The Silver Surfer project has been run since 2014 by the Ministry of Family Affairs, Integration and the Greater Region in Luxembourg and BEE SECURE, a governmental service specialized in Internet security.

Source: Information provided by National Focal Point on Ageing from Luxembourg.

Leverage the potential of digital technologies for active and healthy ageing

Robotics, smart living applications, artificial intelligence and big data have received growing attention as cost-effective and efficient solutions for health care and enabling independent living in later life. Service delivery tools, assistive devices, built-in monitoring applications or interactive communication tools are taking over medical or caregiving tasks and operate increasingly autonomously. Robotics for instance, are progressively deployed to monitor the behaviour and health of older persons, assist in everyday activities and support social interactions.⁴³

Digital technologies can promote active and healthy ageing and support societies in catering for growing care needs of ageing populations. As emphasized in the Madrid International Plan of Action on Ageing in 2002, technology can enhance access to health, for example through telemedicine, and support rehabilitation. In addition, assistive technology and supportive environments can prevent disability in older age and reduce costs.⁴⁴ Digitalisation thus holds important promises for societies with ageing populations as well as for older persons themselves.

Reduce loneliness and enhance connections through digital communications

Digital technology and communications can help reduce loneliness and social isolation in later life providing the possibility to stay in touch with friends and family as well as service providers when personal visits are not possible. Since loneliness is a risk factor for physical and mental health, the possibility of digital technology as a medium to tackle loneliness has been widely explored over the past years.

⁴⁰ Burnes et al, 2019 ; López Seguí et al., 2019.

⁴¹ Brown et al, 2018.

⁴² Levy, 2018.

⁴³ Human Rights Council, 2017.

⁴⁴ United Nations, Department of Economic and Social Affairs, 2002.

Technology-based interventions, such as general information and communication technologies, video games, robotics, personal reminder information and social management systems, peer support chat rooms, social network sites, telecare and 3D virtual environments, have been found to reduce social isolation and loneliness.⁴⁵ Easily accessible websites that facilitate face-to-face exchange, for example websites where people self-organize volunteering activities, can promote social participation.

During the COVID-19 pandemic when confinement and physical distancing measures have exacerbated feeling of loneliness and social isolation for people of all ages, the role of digital communication has received further policy attention. The pandemic has stimulated innovative measures to maintain social connections and prevent social isolation with the help of technology across many UNECE member States.⁴⁶

Enhancing social interaction and well-being through digital communications

Training on IT and mental well-being, Malta

In view of the social challenges brought about by the COVID-19 pandemic, a new IT training programme has started in Malta in 2021, with a particular focus on mental health and well-being. It aims to provide training on the basic use of tablet devices to older persons living in the community and in residential care homes to facilitate social interaction and provide access to applications and support groups that encourage mental health and well-being. The programme consists of 4 sessions of around 2 hours each, delivered in residential homes for older persons and in Active Ageing Centres. They cover getting oriented to using a tablet device; opening a profile on social media and addressing safety issues on social media, sending and accepting friend requests, using mobile data and connecting to Wi-Fi. Participants further learn about mental health and how to take care of their mental well-being, especially related to online presence and technology use. At the end of the programme, a champion will be identified from each group to continue supporting the participants with any difficulties they encounter.

Promoting the well-being of older persons through Active Ageing, Azerbaijan

In the framework of a joint project of the Ministry of Labour and Social Protection of the Population of the Republic of Azerbaijan and UNFPA Azerbaijan, a series of activities have been implemented to help older people overcome loneliness and social exclusion; ensure active participation and access to public goods and services; as well as empowering older people through digital literacy trainings. Activities include computer courses on basic digital skills to access online information and services, such as making online payments, and providing older persons with necessary IT equipment and Internet access. The project further includes the establishment of an on-line library of audiobooks for older people with visual impairments (engaging well-known retired news moderators for recording the audiobooks which will be made available on CDs and smartphone applications).

A series of online video spots and meetings were organised during the COVID-19 pandemic to inform older persons how to protect themselves against the Coronavirus, and to maintain mental health during periods of confinement. Online sessions covered topics considering the interests and needs of older persons, including healthy life, nutrition, physical and mental health, as well as architecture, art and craft, and culinary topics presented by experts. Special sessions were organized with doctors (ophthalmologist, cardiologist, and endocrinologist), and group-sessions/ consultations with psychologists. Physical exercise sessions were organized via Zoom. The project also included a series of encouraging and motivating video spots, co-produced with older people, aimed at maintaining high spirits and provide emotional support. In the short videos older people recited poems by famous poets, filming themselves using digital technology.

Together Program with Uniper in Israel

In order to tackle isolation among older persons during the pandemic, the Government of Israel has installed 450 Uniper devices. The Uniper technology is a TV-based and mobile-based solution for care delivery and social engagement, including live and interactive health and wellness content, HIPAA compliant video telehealth, remote assessments, family communication, and peer-led groups. This end-to-end solution transforms a TV or mobile device into an interactive connectivity hub providing older persons with access to services and opportunities for social interaction from the comfort of their home.

Source: Information provided by National Focal Points on Ageing from Malta, Azerbaijan and Israel.

⁴⁵ Khosravi et al, 2016.

⁴⁶ see also UNECE Policy Brief on Ageing No. 25 on Older Persons in Emergency Situations (UNECE 2020a), Box on “Digital Inclusion of older persons in Belgium, France, Israel, Portugal and Slovenia”, p.14.

Even though digital technology can support social interactions when face-to-face contact is not possible, digital technology cannot, and should not, fully substitute human interaction. Human contact is especially important for older people experiencing social isolation and loneliness. If a person lacks digital skills or access to digital technology, they are excluded when everyday services or leisure activities migrate online without leaving options for in-person participation. During the COVID-19 pandemic, religious ceremonies and services, sports classes, or medical services were often held or provided online only, leading to social exclusion of technology-alienated persons and greater perceived loneliness.

Foster healthy ageing and independent living through digital technology

Digital technology and assistive devices can support older people in accessing health information and services, managing their own health and maintaining their independence with the support of assistive technology. Digital technology such as motion sensors and safety systems can support independent living for older persons experiencing physical and cognitive impairments and can be used in home adaptations allowing older persons to safely and securely stay in their own homes and assistive devices can support older persons wishing to live independently at home.⁴⁷

Digital technology to foster health management and independent living in Ireland

The BConnect service by the Irish organization ALONE provides technology and services to support older people to better manage their health and remain living at home for longer. The BConnect service includes comprehensive assessments with older people to identify areas of support including where technology may be able to provide it. ALONE can then provide tailored packages of technology solutions, including: information resources, such as Wi-Fi and tablets, to avail of Internet services, and communication devices, to support contact with carers, family and friends; e-Health devices, such as smartwatches, blood pressure monitors and ECG's to enable the older person to maintain their own health at home; Smart home devices, such as motion sensors, door sensors and smart doorbells, to ensure the safety of vulnerable older people; and portable emergency alarms with GPS capabilities, to provide additional safety and security measures for older people.

These devices can be connected with family members' or other trusted carers' smartphones, enabling better care and better outcomes for the older person and their carers. Information provided can include: smartphone alerts, based on activity in the home or front door activity, alerts from emergency alarms activated by the user, and communication pathways from the carers' smartphone direct to the older person without any interaction. ALONE provide training and support to ensure the older person benefits from the devices optimally. ALONE has carried out over 200 installations and completed over 4 pilot projects displaying the benefits of technology to older people, their families, health care facilities and Approved Housing Bodies. ALONE is working as a living lab with the HSE Digital Transformation Team, and as such are training their network of Support Coordinators to prescribe technology for health, welfare and social issues.

Source: Information provided by ALONE. <https://alone.ie/what-we-do/bconnect/>

⁴⁷ United Nations Economic Commission for Europe, 2018; United Nations Economic Commission for Europe, 2020b.

Digital technology to foster access to health information and services in Canada and Italy

Virtual Hospice providing information and support to people living with advanced illness in Canada

The Canadian Virtual Hospice (CVH) is a comprehensive online portal for information and support on advanced illness, palliative care, and grief. It serves the information and support needs of people living with advanced illness, families and caregivers, health providers, researchers, and educators. CVH operates several websites, including: VirtualHospice.ca, PortailPalliatif.ca, MyGrief.ca, LivingMyCulture.ca, LivingOutLoud.life, VivreAFond.ca, Methadone4Pain.ca, KidsGrief.ca, and DeuilDesEnfants.ca. VirtualHospice.ca is an interactive and bilingual website providing information and support to Canadians about life-limiting illness, loss and grief. Its “Ask a Professional” feature made it an e-health pioneer by linking Canadians directly with health experts online. The site receives visitors from over 150 countries. While CVH includes content for all ages, several resources are specific to ageing and/or frailty, including publications such as the Palliative Approach for Advanced Frailty in Long Term Care pamphlet, clinical tools (e.g., Advance Care Planning Evaluation in Elderly Patients) and videos (e.g., Coping and the experience of LGBT aging). CVH is an award-winning one-stop resource with a fourteen-year history of offering comprehensive on-line information and support on palliative care and grief. It is viewed as a leader in this field, has leveraged partnerships and engaged stakeholders to develop web-based offerings, and has grown to offer resources on seven on-line platforms and social media channels serving 1.6 million users annually.

Telemedicine innovations enabling remote access to information and health services in Italy

In Trentino, TreC_Televisita telemedicine examinations (first access and check-up) which complement face-to-face services provided in the traditional way have been included in the classification of specialist outpatient services. TreC_Televisita allows physicians to take care and manage their patients remotely, facilitating health services during the Covid-19 emergency, but also for patients who live far from medical clinics or have reduced mobility. Another innovation is the TreCovid19 application that provides a unique and certified source of information about all the aspects related to the Covid-19 outbreak. The application aims to provide reliable information in a bid against the spread of fake news and high levels of anxiety among older persons who may live in a situation of continuous alert due to over exposure to updates related to the pandemic. The application also provides older people affected by Covid-19 who are at home, in voluntary isolation or quarantined, with the possibility to keep in touch with health-care professionals. (<http://mhealth-hub.org/mhealth-solutions-against-covid-19>).

Source: Information provided by the National Focal Points on Ageing from Canada and Italy.

Protect the human rights and dignity of older persons in the digital era

Acknowledging the various opportunities related to digital technology advancements in health care or social care, including robots and artificial intelligence, experts warn of the risks for unethical use and human rights violations. Constant human rights-based evaluations of advantages and risks related to the use of digital technologies are therefore called for.⁴⁸ In 2017, the United Nations Independent Expert on the enjoyment of all human rights by older persons called for reflection and action to protect the human rights of older persons, including their right to dignity, autonomy, privacy and informed consent. The following sections draw on her report and recommendations.⁴⁹

Dignity and autonomy

It is important to respect older persons’ dignity and autonomy in the context of digital technologies. The implementation of digital technology, such as the use of robotics in health and social care, should never lead to disempowering practices, such as neglect of older persons’ needs and preferences. Robotics or assistive technology must not restrict the full potential of older persons by fostering and maintaining a culture of dependency. Considering that a human touch is an important component within caring activities, sole reliance on technology may be experienced as dehumanizing and negatively affect one’s sense of identity and perception of being in control of life.⁵⁰ To avoid discriminatory practice induced by auditing machine decisions and biased algorithms, human rights-based impact assessments of the use of digital technologies in health and social care can help reveal and tackle human rights concerns.

⁴⁸Australian Human Rights Commission, 2018.

⁴⁹Human Rights Council, 2017.

⁵⁰Ibid. Para 47.

Technology designers, service providers, procurers and civil society should be involved in the development of concrete guidelines that ensure a human rights-based approach from planning stages to implementation of technology.⁵¹ Medical technologies have to be both affordable, accessible and available to everyone without discrimination. Acknowledging that today, assistive technological products are primarily targeted at high-income markets, regional and international cooperation and access to science, technology, innovation and knowledge-sharing across regions should be promoted.⁵²

Privacy

The right to privacy is recognized in international human rights law and Article 22(2) of the Convention on the Rights of Persons with Disabilities, emphasising that the privacy of personal, health and rehabilitation information of persons with disabilities must be protected on an equal basis with others by States Parties. Despite the existence of clear legal instruments, actors in everyday life settings, such as in residential care homes, can be challenged to manage the balancing act between privacy, safety and autonomy when it comes to digital technology usage. On the one hand, digital technologies have the power to increase levels of privacy. For example, some older persons with care needs may for reasons of personal intimacy prefer a machine instead of a human caregiver to perform intimate tasks, such as bathing or dressing.⁵³ On the other hand, data that has been collected through older persons' use of assistive technology and robotics is considered particularly sensitive as it reflects a person's health status, life choices, routines, political, philosophical and religious views or sexual habits.⁵⁴ As some invisible and unobtrusive monitoring technology or smart living technology could unknowingly or unwantedly surveil and collect data about an older person, it is crucial that users are able to fully understand the extent of monitoring, data processing, gathering purpose, data storage, and data sharing.⁵⁵

Participation in decision-making

To ensure the protection of the human rights of older persons in the digital age, it is important to involve them and their representatives in decision-making and to gather information on the impact of digitalisation on older persons, including the most vulnerable. The Commission of the Eighth Government Report on Older People in Germany for example, stated that opportunities and risks involved in the development and use of a new digital technology always have to be weighted from the very beginning before being deployed for use in everyday life, medical settings and care.⁵⁶ Potential end-users should already be sufficiently involved in initial development stages to best develop and optimise the digital technology. Designers and engineers who cooperate with end-users from the start may be more likely to discuss and detect ethical concerns. The direct interaction can also help overcome a deficit-centred picture of older age. Aside from these aspects, involvement of end-users promotes more user friendly and barrier-free technology designs, complying with a more ethical and rights-based approach. Structural barriers that hinder the involvement of older users should be addressed to facilitate the active participation of older persons in research, development and policymaking.

Organizations that promote the digital and technological inclusion of older persons such as the VALLIs Technology for the Elderly Centre in Finland can play an important role in this regard. The centre has been established to strengthen the inclusion of older people in a digital and technological society. It aims to make the voice of older people heard in support for decision-making and development by ensuring that the needs of older users are considered in the societal debate, influencing attitudes, tackling age discrimination. The centre produces information about the experiences, needs and motivation of older people in relation to technology and digitalisation. It assembles and distributes information, acts as a nationwide independent expert and participates in the preparation of social decision-making.⁵⁷

⁵¹ Human Rights Council, 2017. Para 95.

⁵² Ibid. Para 64.

⁵³ Ibid. Para 55.

⁵⁴ Sorell and Draper, 2014.

⁵⁵ Human Rights Council, 2017. Para 51.

⁵⁶ Office for the Government Reports on Older People and German Centre of Gerontology, 2020

⁵⁷ Information provided by the National Focal Point on Ageing from Finland.

In October 2020, the Council of the European Union, under German Presidency, adopted conclusions on “human rights, participation, and well-being of older persons in the era of digitalization”, providing guidance on future policy development at European Union and national level. The Council closed with a call to digitalize public services, especially health, social, and long-term care services in a bid to make them more accessible to every member of society, while maintaining non-digital services. Attention was also called to the need for respect of older persons’ rights and needs, including older persons with disabilities.⁵⁸

Free and informed consent to using digital technologies

Digitalisation and the increased use of assistive technologies in health and social care further raises important questions pertaining to people’s right to free and informed consent, including by the most vulnerable. How can older persons’ privacy, dignity, and liberty be protected? Who decides on whether a certain technology should be used by an older person? Does the use of the technology foster mobility, companionship, social interaction? Who designs technologies and are these technologies equally accessible to all who need them? Can users themselves control the technology and is there an option to opt out?⁵⁹

Article 25 of the Convention on the Rights of Persons with Disabilities pronounces the right to free and informed consent, including the right to refuse a certain form of support, such as a robot or other technical devices. Simple and clear information on implications and use about a new technology has to be provided to older persons, while risks and benefits should be presented in a non-persuasive, undeceiving manner prior to taking an older persons’ consent. Individual personal circumstances and cognitive abilities should always be considered when asking for consent. Moreover, consent should be obtained in advance before each intervention. Family members or others should not be eligible to consent to a technology or intervention on the behalf of an older person unless authorized by the older person to do so. Users should at all times remain in control of what kind of information will be collected, but also how it will be processed and who will get access to the data. At last, technologies should not be withdrawn without explicit user-consent as some individuals may have integrated a technology well into their daily routines.⁶⁰

In order to enable older persons and their caregivers to weigh the benefits and risks of technology use, targeted trainings providing relevant information and promoting the skilled use of the technology and enhancing digital literacy are needed.⁶¹

Informing about the risks and benefits associated with use of Artificial Intelligence, Germany

A new project on Artificial Intelligence (AI) aims at the transfer of state-of-the-art artificial intelligence into the daily lives of older people. It makes use of existing local structures and media to provide for a low-barrier access to artificial intelligence. People can test devices, get advice and information. As part of the project, 16 “Internet experience locations” throughout Germany are equipped with artificial intelligence technology and multipliers are trained. Information and learning offers are created that shed light on the benefits and risks in equal measure. The aim is to provide older people with a balanced view on the use of artificial intelligence and enable them to make confident decisions about whether and how they want to use AI-based technologies in their own everyday life.

The project has been developed by BAGSO, the German National Association of Senior Citizens’ Organisations and funded by the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ).

Source: Information provided by BAGSO.

⁵⁸ Council of the European Union, 2020 <https://data.consilium.europa.eu/doc/document/ST-11717-2020-REV-2/en/pdf>.

⁵⁹ Bennett, 2019.

⁶⁰ Human Rights Council, 2017. Para 33.

⁶¹ Ibid. Para 98.

Conclusions

The digital divide and related inequalities are not cast in stone and immutable. To address them, policy strategies aimed at enhancing digital inclusion and empowerment of older persons need to cover a wide spectrum of action areas that were discussed in this policy brief and are summarized in Box 4. In some countries, well-established practices to enhance digital inclusion of older persons are in place that can be adapted or replicated in others. The practices presented in this policy brief illustrate ways in which the UNECE region may reach greater digital justice across all populations, ensuring equal access to everyday technology and online services, including e-Government, e-commerce, and e-health. Offline access to essential goods and services needs to be maintained for people who chose not to or cannot use digital technologies and the Internet. Investments in digital literacy training, including peer or intergenerational training programmes targeted at older persons are key in enhancing the skilled use of digital technologies and foster digital literacy. To a certain extent, digital technology initiatives can also help overcome loneliness and social isolation in later life, promote active and healthy ageing and independent living. Yet, one should not forget that technology will never replace the quality of direct human contact or human touch.

Older persons with and without disabilities should be involved in the design of digital technologies to meet their actual needs and ensure barrier-free use, but also to overcome designers' potential stereotypical assumptions about ageing. Participatory or co-design approaches ideally involve end-users throughout the whole design process, from needs-assessment to testing and implementing a specific technology, while respecting the heterogeneity of end-users.

To ensure personal safety, cybersecurity, data protection and privacy, a rights-based approach is a must. The right to free and informed consent as well as the right to dignity and privacy need to be respected at all times. UNECE member States should facilitate the active participation of older persons in research, development and policymaking with regard to digitalisation. Older persons' valuable life experiences and diverse perspectives are crucial to minimize the digital divide and contribute to a world for all ages.

BOX 4

Digital inclusion of older persons: action areas

- Universal connectivity – Ensure that all have access to the Internet
- Affordability - Ensure equal access to digital technologies, devices and the Internet
- Digital skills – Enhance digital literacy to reduce the digital skills gap
- Access to services – Ensure access to everyday services that move online
- Combat ageism - Tackle stereotypes and prejudice against older technology users
- Design for all – Foster digital accessibility
- Relevance – Leverage digital technologies for the well-being and participation of older persons
- Human rights – Protect human rights and ensure secure, safe and ethical digital environments
- Choice – Ensure autonomy and ability to choose whether to use digital technologies
- Backup - Maintain continued offline access to goods and services

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Checklist: Ageing in the digital era

Main areas	Areas of implementation	Key elements
Access to goods and services	Universal connectivity	<ul style="list-style-type: none"> • Internet access for all older persons, including those living in long-term-care institutions • Financial assistance to those who cannot afford digital technologies and broadband connections
	Affordability	
	Design for all	<ul style="list-style-type: none"> • Accessibility regulations • Involvement of older persons in the design and development of digital technology and services to ensure they meet their needs and interests
	Support for use of digital services	<ul style="list-style-type: none"> • Tailored support to older user of digital services such as e-banking, e-Government, e-learning • Guidance to service providers to make online services more age-friendly
	Offline access to goods and services	<ul style="list-style-type: none"> • Maintain offline access to essential information, goods and services • Avoid financial penalty for offline access to services
Digital literacy	Digital skills	<ul style="list-style-type: none"> • Intergenerational training • Peer-to-peer training • Internet security training
	Ageism	<ul style="list-style-type: none"> • Avoid ageist stereotypes against older technology users • Promote intergenerational digital training and contact • Tailor programmes to enhance self-confidence of older persons in using digital technologies
Benefits of digital technology	Loneliness and social isolation	<ul style="list-style-type: none"> • Facilitate social connections and participation by older persons via digital communication
	Opportunities for healthy ageing and independent living	<ul style="list-style-type: none"> • Promote access to e-health services • Facilitate health management through the use of digital devices and services • Facilitate independent living through use of digital technologies and assistive devices
Human rights	Dignity and autonomy	<ul style="list-style-type: none"> • Avoid disempowering practices such as neglect of older persons' needs and preferences • Human rights-based impact assessments of digital technologies in health and social care • Guidelines on human-rights based approach to digital technology design, development and use involving technology designers, services providers, procurers and civil society • Access to medical technologies for all
	Privacy	<ul style="list-style-type: none"> • Ensure data protection and ethical use of data collected through the use of digital technology • Transparency on monitoring, data processing, gathering purpose, data storage and sharing
	Participation in decision-making	<ul style="list-style-type: none"> • Involve older persons and their representatives in decision-making processes about digital technology use • Monitor impact of digitalisation on older persons, including on the most vulnerable
	Free and informed consent	<ul style="list-style-type: none"> • Enable older persons to weigh risks and advantages of technology use through tailored information and training • Older persons should remain in control of what kind of information is collected, how it will be processed and who will get access to it