DIRECTORATE GENERAL
HUMAN RIGHTS AND RULE OF LAW
DEPARTMENT OF SOCIAL RIGHTS

European Social Charter | Charte sociale européenne

COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

Strasbourg, 05 August 2022 CCS(2022)4

European Committee for Social Cohesion (CCS)

REPORT ON

THE IMPACT OF DIGITALISATION AND IT DEVELOPMENTS ON SOCIAL RIGHTS AND SOCIAL COHESION
(Study completed on 8 February 2022)

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[1] All positions and views expressed in the paper are of the authors.

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Introduction

Digitalisation is an important and widespread innovation in present-day society, communities and institutions. Governments are introducing new digital systems in order to guarantee better communication with citizens, and to increase inclusiveness. Businesses boost their productivity via digital start-ups and digital transformations, changing the overall environment and framework of production and service provision. This includes sectors ranging from health to culture, from education to social protection, from infrastructures to media, and from trade to social entrepreneurship.

Although the digital impact offers people new opportunities, it can also generate new risks. In the area of education, for example, digitalisation gives young people better opportunities with new methods of teaching and learning but, at the same time, brings with it the risks associated with infringements of privacy or cyberbullying, which need more attention.

For the employment market and for the rights related to the right to work, digitalisation also has positive and negative impacts. The new ways of earning a living are unavoidable in many types of employment. Digital work platforms have impacted the labour market. The importance of teleworking and platform working has grown and will also have an impact on social rights.

Digitalisation and new digital solutions, due to their innovative nature, can often be faster than the process of inclusion in society and the necessary adjustments or repositioning of social rights. In many countries, this pace is also faster than the opportunities people have to acquire the necessary digital skills.

Social rights are even more important in the era of digitalisation. A crucial aspect is how to ensure that individuals can access and enjoy their social rights effectively.

From another perspective, the theoretical target of accessing and enjoying social rights in the digital era, has real potential when moving to a real agenda with the goal of socially inclusive digitalisation. Digital technologies can be inclusive in a globally sustainable development scenario with a comprehensive and single framework of socially friendly standards for digitalisation solutions.

One of the consequences of digitalisation is that social services and benefits will be guaranteed in a shorter time period without additional paperwork. This means, that the final goal is that people will be less stressed and that governments can reduce their administrative costs.

Against this background and in view of the importance of digitalisation and IT developments and their impact on social rights and social cohesion, the European Social Cohesion Platform (currently the Committee for Social Cohesion-CCS) has commissioned this report to be prepared by the Council of Europe's short-term consultants, Mr Gaabriel TAVITS and Mr Arman SARGSYAN. The report will be used by the CCS as a reference document in its subsequent activities.

This paper discusses the various aspects of digitalisation and its impact on social rights.

Statement of the problem

This report analyses developments in digitalisation and their social impact. Digital technologies have radically transformed societies and economies over the last 20 years. The information technology (IT) sector, IT access, IT use, IT regulation, and network readiness indexes have all experienced tangible growth and development in European countries. Digitalisation helps to improve efficiency and quality in business and communities. On the other hand, it is currently a rapidly changing and innovation-oriented phenomenon, and the main trends such as big data, artificial intelligence, the Internet of Things, cloud computing, and cybersecurity are forcing the rapid development of digital products, changing work-life balance, education, health, business and governance.

Spanish researchers studying the synergies between digitalisation and social cohesion observed that digital transformations are conditioning and modifying how we live, how we relate to each other, and how we show ourselves to the world, simultaneously producing equality and inequality, and inclusion and exclusion (J. L. Cantabrana, et al., 2015)[2].

Social cohesion in a digital society is heavily dependent on digital skills, digital access, and secure and sustainable digital infrastructures. Solutions bringing digital innovations into the mainstream change societies. It is of vital importance to prevent skills imbalances, inequalities in access, the concentration of data in single hubs, and cybersecurity threats for overall digital sustainability and social cohesion.

As a result of the recent boosts to digitalisation generated by the COVID-19 lockdown policies and measures, employers were “forced” to find innovative solutions using new models of internal and external business sustainability, by means of digital technologies. They faced two main challenges – to keep working during lockdowns with minimal market losses and to maintain the concept of “physical distancing” both for employees and customers. The main solutions to these issues mainly laid in digital transformations and in new digital products. Those transformations are continuing and many of them have been highly effective, with a strong potential to become permanent. Societies, especially in developing countries, where services to citizens had already been partially digital, rapidly pivoted towards e-commerce markets, and governments, and boosted their digital transition towards online service provision. The Organisation for Economic Cooperation and Development (OECD) has also observed the impact of those transformations: “The longer-term effects of the pandemic on digital transformation are only beginning to emerge”[3].

[2] J. L. Cantabrana, M. E. Minguell, J. C. Tedesco, Inclusion and Social Cohesion in a Digital Society, RUSC. Universities and Knowledge Society Journal 12(2), DOI:10.7238/rusc.v12i2.2459, April 2015.
[3] OECD Digital Economy Outlook 2020 | OECD publishing Paris, 2020.

This report focuses on the following main directions:

- Current digitalisation trends and their impact.
- Digitalisation, social rights and social cohesion.
- Digitalisation's implications to the labour market.

More specifically, the report offers an overview of digitalisation, and the imbalances with social rights from a social cohesion perspective, explaining what the opportunities and the risks are and where there is still room for improvement. One of the central questions is how the digitalisation trend manifests itself in various European countries, by observing European countries' digitalisation processes and data.

Policy recommendations for making the social dimension more resilient in the digital world are provided at the end of the report.

Chapter 1. Digitalisation trends and consequences

1.1 Digital world: current state and development motion

Digitalisation trends: global view

Digitalisation and information technologies play a crucial role in the modern world and society, not only impacting the economic environment, but also influencing and acting as an engine of social transformation, influencing all spheres of human activity. One of the key aspects of digitalisation – IT and innovation – can significantly increase the flexibility and accessibility to online public services, access to open data, transparency, accountability for communities, impacting entire sectors of the economy and society as a whole. Productivity growth, which may arise as a result of a new technological breakthrough, generates new opportunities and new challenges that affect significantly the parameters of economic development, wealth distribution and the quality of life.

In a general sense, digitalisation is a process of transition to digital technologies, changing business and societal models, and creating new revenue opportunities and values. Within the framework of digitalisation, three concepts, also being discussed in the literature, are digitisation, digitalisation and digital transformation. According to C. Chapco-Wade (C. Chapco-Wade, 2018), digitisation is simply the conversion to digital, whereas digitalisation is the use of digital technologies and digitised data to impact how work gets done, to transform how customers and companies engage and interact, and to create new (digital) revenue streams[4].

It is already apparent that digitalisation improves overall efficiency significantly: reducing operational costs, providing innovative and efficient ways to access information, communication channels and networks. With digital technologies, it is already a reality for businesses to rapidly integrate in world markets, to overcome barriers of scale and expensive

[4] C. Chapco-Wade, Digitization, Digitalisation, and Digital Transformation: What's the Difference?, Medium network, 2018. link - Digitization, Digitalisation, and Digital Transformation: What's the Difference? | by Colleen Chapco-Wade | Medium

infrastructures, to foster innovation. Digitalisation accelerates access to markets, and access to finance, training, recruitment, and public services. It also helps to make better decisions, reduce risks, and implement better crisis management.

According to the Fletcher School at Tufts University researchers (B. Chakravorti, et al., 2020)[5], the drivers of digital evolution are 1) supply conditions, 2) demand conditions, 3) the institutional environment, and 4) innovation and change. Under the supply conditions, the authors see the state of infrastructure development as facilitating digital interactions and transactions. This driver measures the quality and readiness of digital and underlying analogue infrastructure to facilitate access, enable interactions and transactions online, and ensure the fulfilment and delivery of physical and digital goods and services. Under the demand conditions, the question is whether consumers are willing and able to engage in the digital ecosystem. What is the state of the human condition online? What is the state of digital inclusion across race, class, and gender? Do consumers have the means and instruments necessary to plug into the digital economy? Do consumers have the willingness and continued interest to remain actively engaged in the digital economy? The report shows that the economies of Europe rank among the most digitally evolved in the world. Europe's strong digital institutional environment and digital supply conditions scores secure its place at the top of the digital evolution scale, with the Nordic nations of Finland, Sweden, and Norway garnering some of the highest marks for both these drivers. The ranking also shows that European economies are among the most digitally inclusive (when measuring gender, class, and geographical inclusion), with six (Norway, Belgium, Switzerland, Austria, Iceland, and Poland) of the top 10 scorers on digital inclusion based in Europe.

It is widely assumed that digitalisation boosts innovation having widespread consequences for humanity, changing how citizens, business and public governance network with one another, and transforming the structure of society and the economy. Countries' economic development, employment and human development are noticeably correlated with the state of their digital economy. Nevertheless, while digitalisation and advanced technologies create new business opportunities, they also raise a number of problems and risks in the areas of privacy, literacy, accessibility and security.

There are several key innovative trends in the digitalisation agenda in European countries and in international markets in general. Artificial intelligence, the Internet of Things, big data, cloud computing, blockchain, 5G, are all directions which are critically innovative and are responsible for the continuous change in social and business life. It is clear that there are synergies between these technologies which, together, comprise the digital infrastructure, serving society, companies and governments. On the other hand, each of these technological solutions is capable of having varying degrees of impact on society.

Artificial intelligence introduces a set of technological solutions that make it possible to simulate human cognitive functions (including self-learning and solutions without predetermined algorithms), obtaining results possibly comparable to those of human intellectual activity. New implementations of artificial intelligence are based on machine learning and the use of big data.

[5] B, Chakravorti, R, Chaturvedi, C, Filipovic, and G, Brewer, Digital in the time of Covid: Trust in the Digital economy and its evolution across 90 economies as the planet paused for a pandemic, The Fletcher School at Tufts University, December 2020, Link - Report

Another aspect that is of great importance in digitalisation is data. During the DIGITALEUROPE Masters of Digital event in 2021, the President of the European Council, Charles Michel, outlined his vision of a Europe where data is both the driver of innovation and the protector of our core European values, stating that the priority should be to build a strong, confident and outward-looking Europe that is a global leader in digital innovation[6].

Big data refers to a series of approaches, tools and methods for processing huge volumes and very diverse structured and unstructured data to obtain human-perceived results. The nature of the immense velocity, volume and variety (VVV) of big data makes this area strategically important, with its continuous innovative, society-sensitive solutions and challenges.

Table 1. Key indicators of selected digital technologies in the world

	Publications (1996-2018)	**Patents (1996-2018)**	**Market size**
Artificial intelligence	403,596	116,600	$16 billion (2017) $191 billion (2024)
Internet of Things	66,467	22,180	$130 billion (2018) $1.5 trillion (2025)
Big data	73,957	6,850	$32 billion (2017) $157 billion (2026)
Blockchain	4,821	2,975	$708 million (2017) $61 billion (2024)
5G	6,828	4,161	$608 million (2018) $277 billion (2025)

Source: data extracted from the Technology and innovation 2021 report, UN conference on trade and development, 2021.

Table 1 shows several key digitalisation technologies with numbers. Artificial intelligence is one of the R&D-intensive directions with noticeably higher intellectual property elements, such as patents and publications. The table also shows that, from the market perspective, big data has a leading position which may also arise from the above-mentioned synergistic effect of artificial intelligence and big data.

[6] Masters of Digital event 2021, DIGITALEUROPE, February 2021. Link - MoD2021_Report_Final.pdf (mastersofdigital.org)

Developments and impacts in figures

Digital transformations increase dependency on digital solutions and environments in all spheres from health to social protection and education. The COVID-19 pandemic has further accelerated digital developments. Ongoing paradigm shifts, such as the increased reliance on e-commerce and remote working, are bound to outlast the pandemic, becoming permanent features of the economy and society.

In 2020, due to the COVID-19 pandemic, the world economy declined by 3.4%[7]. In the member states of the Council of Europe, GDP declined by 4.3% in 2020. At the same time, digitalisation has accelerated around the world. Countries are announcing lockdowns (sometimes several times a year), closing schools and entire industries, and digital sectors – whether distance education, e-commerce or home-based services – are of particular importance and should be boosted all over Europe, and particularly in those countries which have comparatively low levels of economic development and modest digital infrastructures.

The recent World Economic Forum Digital Generation report[8], states that developing economies, with a comparatively lower level of digitalisation are more vulnerable to COVID-19. Respondents who were "more digitalised" tended to be more economically resilient during the pandemic. At the same time, the majority of respondents wanted to further digitalise different aspects of their life.

The frontier technologies readiness index comprises five building blocks: information and communications technology (ICT) deployment, digital skills, R&D activity, industry activity and access to finance[9]. The index was calculated for 158 countries. Based on this index, the countries which are best prepared are the United States, Switzerland and the United Kingdom. Other than the United States, most of the leading countries are European. Based on this report, most assessments of the impact of artificial intelligence and automation on jobs have focused on the more advanced economies. The survey estimates that, over the next 20 years, in Europe between 10% to 20% of jobs could become automated.

From the business perspective, digitalisation in EU countries is assessed in the Digitalisation in Europe 2020-2021 report. The European Union, on average, falls short of the United States. There are, however, several EU countries that outperform the United States. European firms implement the Internet of Things technologies less often and lag behind in the construction sector in particular, which drags down the digital intensity score. In addition, EU firms tend more often to perceive digital infrastructure as a major obstacle to investment. The top performing EU countries, in selected areas of digitalisation, are: Denmark for digital intensity, and investment in software and data; France for investments in organisation and business process improvements; Finland for the use of a formal strategic business monitoring system, Germany for digital outlook; and the Netherlands for digital infrastructure. The report shows that the digital transformation may also come with downsides for employment. Certain specific digital technologies must be examined because some are expected to induce job losses. For example, the introduction of advanced robotics in recent years has contributed to net job creation so far. But, looking ahead, many firms expect automation using robots to lead to a reduction in employment. This is particularly true of firms in Central and Eastern Europe. In

[7] GDP growth (annual %) | Data (worldbank.org)
[8] ASEAN digital generation report: pathway to inclusive digital transformation and recovery insight report, October 2021. Link - WEF_ASEAN_Digital_Generation_2021.pdf (weforum.org)
[9] Technology and Innovation report 2021. Catching technological waves Innovation with equity, UN Conference on Trade and Development, 2021. Link - Technology and Innovation Report 2021 (unctad.org)

contrast, the employment effects of other digital technologies, such as platforms or big data/artificial data, are expected to be more neutral[10].

Connectivity is one of the essential requirements for a smooth digital transformation. The Global State of Digital 2021 report[11] shows that, as of October 2021, more than two-thirds (5.29 billion) of the world's population currently uses a mobile phone, an increase of almost 100 million over the previous 12 months. There are currently 4.88 billion Internet users around the world, which equates to almost 62% of the world's population and this number had increased by more than 220 million over the previous 12 months. Accordingly, social media users increased by more than 400 million. These increases are at a noticeably faster rate than global population growth (1%).

In the OECD countries, communications subscriptions continue to grow rapidly: in the past eight years, the share of high-speed fibre in all fixed broadband subscriptions in the OECD has more than doubled and has risen to at least 50% in nine OECD countries[12].

Using the World Bank statistical databases, the digital skills index figures have been analysed for Council of Europe member states and EU countries. The digital skills index shows to what extent the active population possesses sufficient digital skills (1 = not at all; 7 = to a great extent). The results are as follows (table 2).

Table 2: Digital skills in European countries and the world.

Area	Digital skills index (0-7)		
	Average	Standard Deviation	Maximum
Council of Europe member states	⇧ 4.699	⇩ 0.591	5.832
EU countries	⇧ 4.749	⇩ 0.524	5.832
World	⇩ 4.229	⇧ 0.752	5.832

Source: data calculated from the World Bank TCdata360 statistical database (link - GCI 4.0: Digital skills among population - TCdata360 (worldbank.org)). Structured tables from the databases are shown in the Appendix to the current report.

[10] Digitalisation in Europe 2020-2021: Evidence from the EIB Investment Survey, European Investment Bank, July 2021. Link - Digitalisation in Europe 2020-2021: Evidence from the EIB Investment Survey

[11] Simon Kemp, The Global State of Digital 2021, A comprehensive look at the state of the internet, mobile devices, social media, and ecommerce from Hootsuite and We Are Social, Hootsuite, October 2021. Link: Digital Trends 2021 (hootsuite.com)

[12] OECD Digital Economy Outlook 2020, Nov 2020, OECD. Link - OECD Digital Economy Outlook 2020 | OECD iLibrary (oecd-ilibrary.org)

The table shows that, in EU countries, the average digital skills index is slightly higher than in the Council of Europe member states and is tangibly higher than the world average. Accordingly, the deviation from the average is lower in European countries, which means that levels of digital skills in European countries are not as dispersed as in the world as a whole. The highest digital skills index in the world is in Finland, at 5.83. The five Council of Europe member states countries with the lowest digital skills are Bosnia and Herzegovina, Croatia, Georgia, Hungary and Turkey.

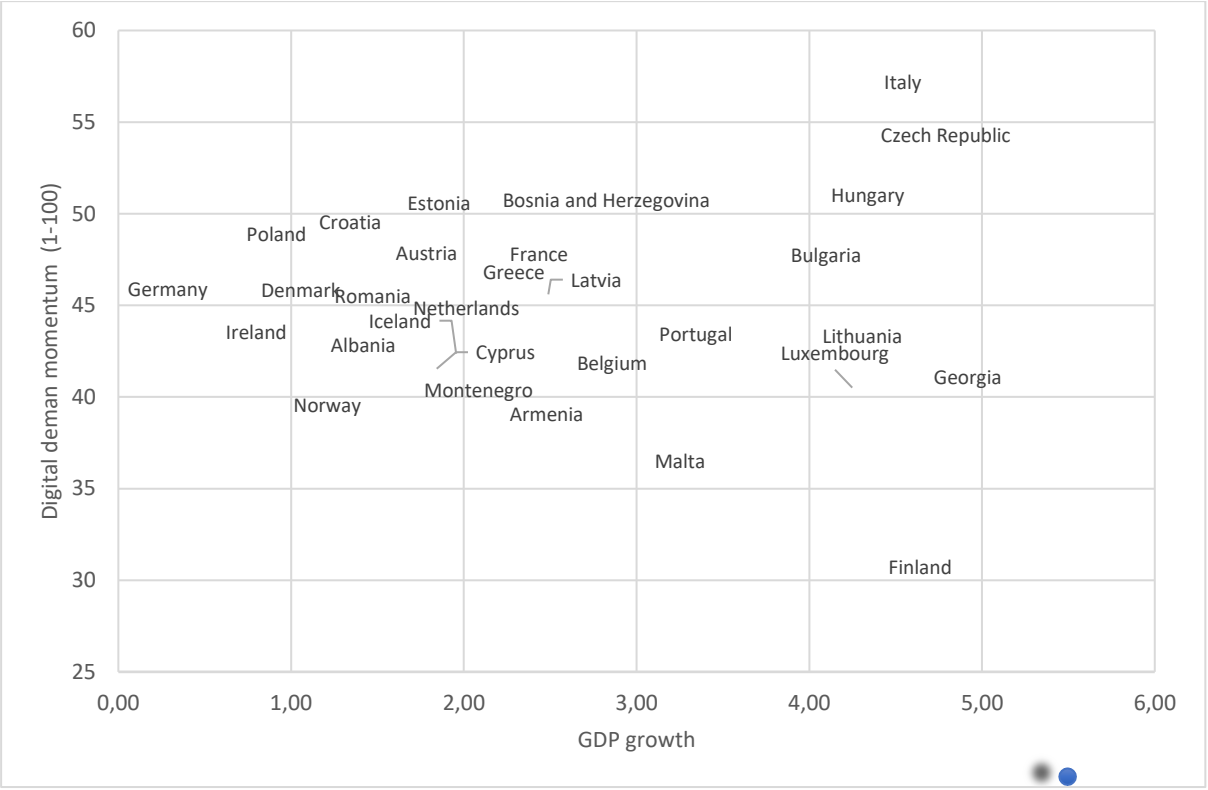
These skills indicators are strongly influenced by socio-demographic aspects as well. In Europe, 80% of young adults (aged 16-24), 84% of individuals with high formal education qualifications, and 87% of students have at least basic digital skills. In contrast, only 33% of those aged 55-74 and 28% of the retired and of the inactive population possess at least basic digital skills. There is still a substantial gap between rural and urban areas when looking at the population's digital skills: only 48% of individuals living in rural areas possess at least basic digital skills in comparison to 62% of those living in cities[13].

Another finding is that, in Council of Europe member states, digital demand momentum and GDP growth are not correlated, and this correlation is in fact negative but not sufficient (-0.04). As mentioned above in this chapter, in relation to the demand momentum, the question is whether consumers are willing and able to engage in the digital ecosystem. This also reflects their digital abilities or inclusiveness of the society in question. Momentum scores are generated using the compound annual growth rate formula, so it is comparable with the annual GDP growth of the same year.

The absence of correlation shows that digital demand (digital skills or willingness of use) is not conditioned by the economic growth of the country (Figure 1).

Figure 1. Digital demand momentum and GDP growth in Council of Europe member states, 2019

[13] Digital Economy and Society Index (DESI) 2021 Human Capital, European Commission 2021. Link - https://ec.europa.eu/newsroom/dae/redirection/document/80551



Source: data extracted from the World Bank TCdata360 and The Fletcher School report databases (links - (B. Chakravorti, et al., 2020); GDP growth (annual %) | Data (worldbank.org))

The Network Readiness Index is a digitalisation index developed by the Portulans Institute. In early November 2021, it published NRI rankings of a total of 140 economies based on their performance across 60 variables[14]. The index consists of four pillars: Technology (access, content and future technologies), People (individuals, businesses and governments), Governance (trust, regulation and inclusion) and Impact (economy, quality of life and contribution to UN Sustainable Development Goals).

Table 3. Network readiness index 2021 in Council of Europe member states, the EU and the world

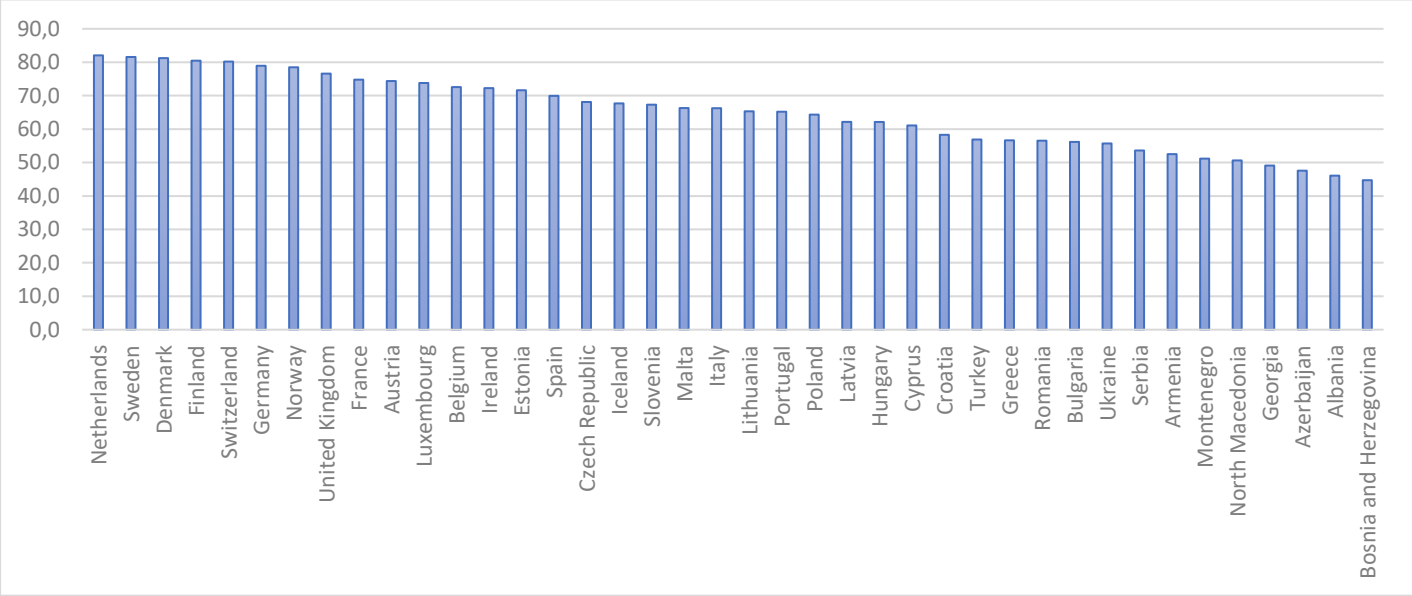
	Network readiness index, 2021 (average)		
	Average	**Standard Deviation**	**Maximum**
Council of Europe member states	65.00	12.020	82.06
EU countries	68.80	8.090	82.06
World	51.82	12.830	82.06

Source: Network Readiness Index database (link - Network Readiness Index – Benchmarking the Future of the Network Economy, Portulans Institute, 2021.

[14] Network Readiness Index – Benchmarking the Future of the Network Economy, Portulans Institute, 2021.

Table 3 shows that the EU countries' average network readiness index is higher than that of Council of Europe member states which, in turn, is considerably higher than the world average. Accordingly, the deviation from the average is lower in European countries, which means that network readiness in the EU is not as diversified between countries as it is in the Council of Europe member states and in the world. The highest index is observed in the Netherlands, at 82.06.

Figure 2. Network readiness index 2021 in Council of Europe member states



Source: data extracted from the Portulans Institute NRI 2021 database[15].

The five countries with lowest network readiness index are North Macedonia, Georgia, Azerbaijan, Albania, and Bosnia and Herzegovina.

Table 4. Network readiness index 2021 pillars in Council of Europe member states, the EU and the world

	Network readiness index pillars, 2021 (average)			
	Technology	**People**	**Governance**	**Impact**
Council of Europe member states	59.6	60.7	72.5	67.2
EU countries	63.3	63.7	77.5	70.8
World	46.2	48.7	57.3	55.1

Source: Network Readiness Index database (link - Network Readiness Index – Benchmarking the Future of the Network Economy, Portulans Institute, 2021.

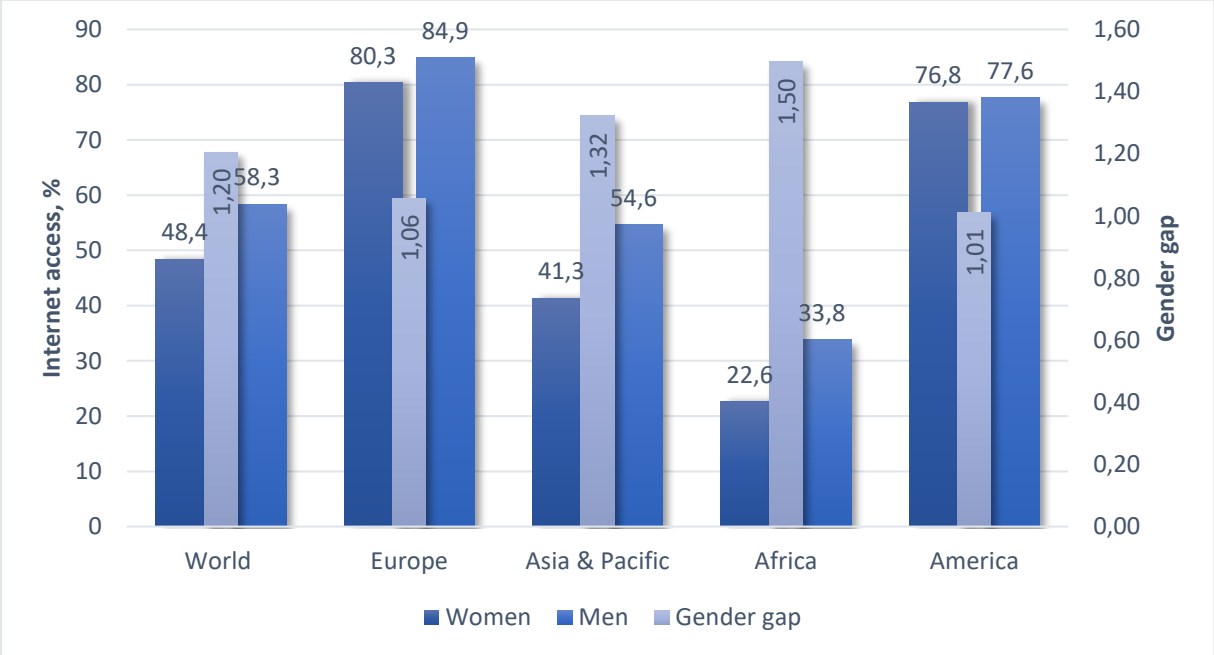
[15] NRI 2021 database, PI - Network Readiness Index – Benchmarking the Future of the Network Economy

The network readiness index pillars show that Europe has noticeably higher indexes for the pillars compared with the rest of the world. Of particular note is the People pillar which includes skills, access, and the ability to utilise technological resources in productive ways. It measures how individuals use technology and leverage their skills to participate in the network economy. Under the People pillar, the five least well-performing European countries are Bosnia and Herzegovina, Azerbaijan, Moldova, North Macedonia, and Montenegro.

The United Nations E-Government development index 2020 incorporates the access characteristics, such as the infrastructure and educational levels, to reflect how a country is using information technologies to promote access[16]. The e-governance index average for Council of Europe member states in 2020 is 0.813 (from 1 (lowest) to 100 (highest)), while the same index for the world is only 0.598.

Based on the report, Europe has the highest proportion of women with Internet access (80.3%), while Africa has the lowest (22.6%). Meanwhile, the Internet access gender gap in Europe is lowest after America[17]. It is important to note that, even if in Europe, the gender gap is greater than in America, a tangibly higher proportion of both women and men have access to Internet in Europe than in America. In general, the number of women who have access the Internet in developed countries is more than double that of those who can do so in developing countries (Figure 3).

Figure 3. Internet access and gender gap, 2020, in %



Source: data taken from the UN E-Government Survey, United Nations, 2020.

[16] UN E-Government Survey, United Nations, 2020.

[17] The report considers all 35 countries of the American continent and 43 countries in Europe - https://publicadministration.un.org/egovkb/en-us/Data-Center

The International Telecommunication Union's ICT Regulatory Tracker is an evidence-based tool to help decision-makers and regulators make sense of the rapid evolution of ICT regulation. The Tracker pinpoints the changes taking place in the ICT regulatory environment. It facilitates benchmarking and identifying trends in ICT legal and regulatory frameworks. It helps track progress and identify gaps in regulatory frameworks, making the case for further regulatory reform to achieve a vibrant and inclusive ICT sector[18].

The ICT Regulatory Tracker Score breakdown is as follows G1: ≥ 0; G2: ≥ 40; G3: ≥ 70; G4: ≥ 85 ≤ 100.

- G1: Regulated public monopolies – command and control approach
- G2: Basic reform – partial liberalisation and privatisation across the layers
- G3: Enabling investment, innovation and access – dual focus on stimulating competition in service and content delivery, and consumer protection
- G4: Integrated regulation – led by economic and social policy goals

The average ICT regulatory score for the Council of Europe's 47 member states is high, at 86 or equal to G4. There are only three countries (Liechtenstein, Spain and Ukraine) with a G3 (above average) score. However, the issue is that there are still five Council of Europe member states with widely varying low scores: Andorra, Azerbaijan, Monaco, the Russian Federation and San Marino.

One of the most important digital transformations in the labour market is the development of online work platforms. The variety of platforms (such as taxis, care, repairs, etc.), the numbers they employ, and the business models they use are all increasing. The development² of platform employment is associated with the composition of the platform economy, the existence of an algorithm for effective interaction between suppliers and consumers, thereby reducing transaction costs, and the risks of incomplete information and fraud.

An interesting conclusion of a recent report[19] is that the most likely explanation for high levels of platform work in Central, Eastern and Southern Europe appears to be poverty.

Platform working is emerging in Europe. In the UK, platform work has doubled over the past three years, with one in 10 working-age adults now engaging in such work at least once a week. The distribution of practical solutions to improve the working conditions of platform workers is uneven across European countries. The issues of employment protection and decent working conditions for platform workers is an essential one, particularly in developing countries. Often, workers in non-standard situations, such as platform work, do not have the same social protection as standard employer-employee contract-based workers[20].

[18] Global ICT Regulatory Outlook 2020, International Telecommunication Union, 2020.
[19] U. Huws, N. Spencer and M. Coates, The platformisation of work in Europe: Highlights from research in 13 European countries, FEPS, UNI europa, Hertfordshire Business School, University of Hertfordshire, 2020. Link - platformisation of work report - highlights.pdf (feps-europe.eu)
[20] Lane, M., "Regulating platform work in the digital age", Going Digital Toolkit Policy, OECD 2020.
V. De Stefano, I. Durri, C. Stylogiannis, M. Wouters, Platform work and the employment relationship, International Labour Organization 2021.

In European countries, digitalisation is emerging and has a highly competitive outlook compared with other countries in the world. There are no significant correlations between digitalisation-related indexes and economic growth in Europe. Europe is evolving into a highly connected society, particularly intensively in some of its northern, central and western countries.

While the more developed countries in Europe have stronger digitalisation skills and infrastructures, there is a somewhat negative digital development gap observed in the non-EU Council of Europe member countries. There is still room to pursue a levelling-up policy in comparatively vulnerable countries, to bridge the digital divide between urban and rural areas, to implement sustainable digital development and to achieve better e-governance, digital skills, digital ethics and results in relation to cybersecurity.

1.2 Social impact at a glance

Digitalisation is a new way of structuring the organisation of public life, a new way of forming production chains, a new way to conduct socio-economic relations. It is a new way of decision-making, resulting in a significant change in priorities, values and behaviour in society.

The European Social Charter is an integrated set of international standards concerning social rights, and a mechanism for monitoring their implementation within the States concerned. The Charter also serves as a "shield" against the possible negative influences of technological developments. Article 10 of the Charter includes a clause on providing or promoting, as necessary, special facilities for the re-training of adult workers needed as a result of technological development or new trends in employment. Article 7, paragraph 10, guarantees the right of children to protection against all forms of exploitation and against the misuse of information technologies. Based on the explanatory reports of the Charter[21], there is a comprehensive formulation on the importance of enabling workers to adapt their knowledge and skills to industrial, technological and scientific progress.

Social cohesion is defined by the Council of Europe[22] as the capacity of a society to ensure the well-being of all its members – minimising disparities and avoiding marginalisation to manage differences and divisions and to ensure the means of achieving welfare for all members.

A cohesive society seeks to ensure the well-being of all its members, to eradicate exclusion and marginalisation, to create a sense of belonging, to promote trust and to offer its members the opportunity of upward mobility (rising from a lower to a higher social class or status). While the notion of "social cohesion" is often used with different meanings, its constituent elements remain the same and include concerns about:

- Social inclusion: the process of improving the conditions which enable individuals and groups to take part in society. The aim is to empower poor and marginalised people to take advantage of growing global opportunities.
- Social capital: the resources that result from people co-operating together towards common ends.

[21] European Social Charter, collected texts (7th edition), CoE, updated: 1st January 2015
[22] New Strategy and Council of Europe Action Plan for Social Cohesion, approved by the Committee of Ministers of the Council of Europe on 7 July 2010. CoE.

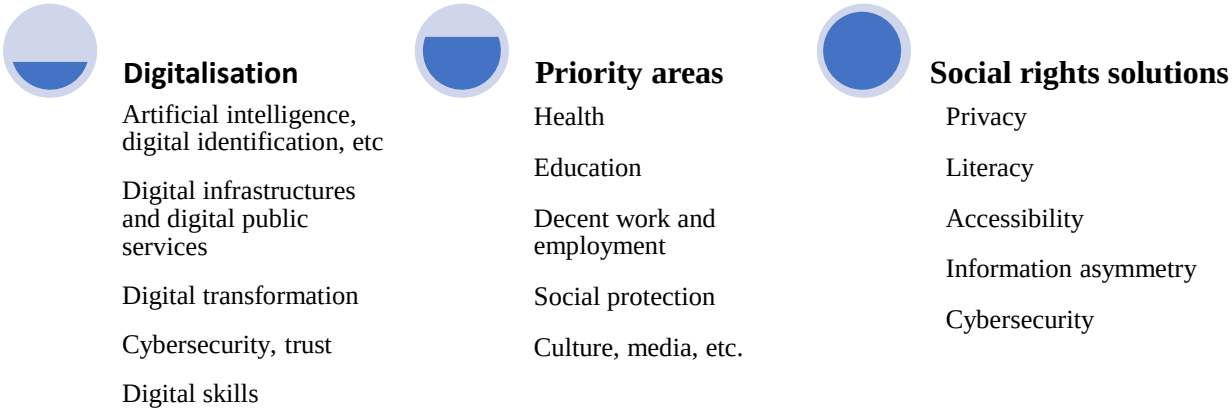
- Social mobility: the ability of individuals or groups to move upwards or downward in status, on the basis of their wealth, occupation, education, or other social variables.

Digitalisation and digital transformation affect the above-mentioned pillars by changing the "rules and tools" for society. Introducing technology into human lives can also be an emerging factor of vulnerability. Insofar as it can accentuate the lack of digital skills and access to a computer or networks, it affects labour markets. These aspects, since they are gaining ground and affect all groups in society, are crucial to better inclusiveness and social cohesion.

The social rights issue within the context of digitalisation is also of high concern among researchers. Professor Gesche Joost of Berlin University of Arts considers that "digitalisation is becoming an amplifier for existing social inequalities. Once the social fabric begins to fray, the possibility of an open digital society is put at risk. AI is even being used by China to support its totalitarian regime. Guided by our transatlantic values, we need to design an agenda for an inclusive digital society. In particular, we have to ensure that the digital transition serves the empowerment of individuals and fosters their rights and freedoms"[23].

Digitalisation and social inclusion are the crosscutting pillars of sustainable digital development nowadays. The high-level solution model of the "digitalisation – social rights" framework must include: 1) all the key aspects or elements of the process of digitalisation, 2) areas of social institutions where digitalisation matters, and 3) main practical solution areas which are directly associated with social rights. The model can be presented as follows (Figure 4).

Figure 4. High-level model of "digitalisation – social rights" framework



Information asymmetry, as presented in the model, is an issue that leads to ineffective communication processes in the digital economy and society. Due to new forms of information flow, there is often an imbalance in the flow of information between institutions and society. The range of digital information is huge and often uncontrolled. People make wide use of online resources to get necessary and often sensitive data, a tangible part of which may be imperfect.

[23] The Impact of AI and Digitalization on Social Cohesion, Project on Europe and the Transatlantic Relationship, Harvard Kennedy School, 2020. Link - https://www.belfercenter.org/publication/impact-ai-and-digitalization-social-cohesion

A similar example can be cited in the area of e-health or telehealth, when patients are not aware of the precise "limits" of the capacities of online health services depending on the cases being treated.

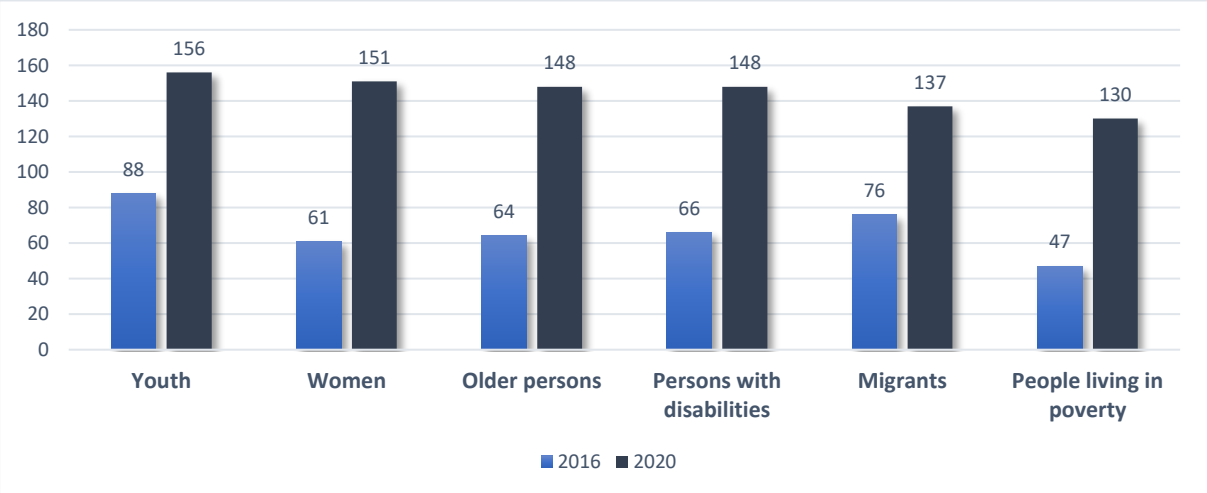
Cybersecurity may be analysed in terms of three factors: confidentiality, integrity and availability. Confidentiality is a key issue for people who have their personal data in various clouds and digital storage. The second factor is that integrity of data must be assured so that it cannot be modified or destroyed. Thirdly, there is the issue of data availability - as in the need to ensure the timely and reliable access to information. All these aspects are of concern to society.

A number of changes have been made to labour legislation in Council of Europe member countries in response to the COVID-19 pandemic[24]. These changes have been necessary not only to protect the rights of workers during the actual period of the pandemic, but also due to long-term effects on employees' working environments and decent work. Thus, remote working has significantly increased and there are expectations that this activity will continue in the post-pandemic period. Measures have also been introduced, for example, in the case of Japan[25].

Certain rights relating to employees' compensation when working from home, rights of employer control in the case of online work, rights of vaccinated employees, etc. have not been systematically addressed in all Council of Europe member states. Solutions must be provided by introducing a comprehensive set of legal norms to respond to the impact of COVID-19 and to boost distance working.

Theoretically, digitalisation by its very nature can be broadly human-centric. In recent years, COVID-19 and digital innovations have given an impetus to the introduction of faster and more widely available digital social services. However, these digitalised services are not always human-centric in terms of their privacy, accessibility, etc. From 2016 up to the pandemic year of 2020, the number of countries providing digital services targeted at vulnerable social groups increased significantly (Figure 5).

Figure 5. Number of countries providing online services to vulnerable groups, 2016-2020

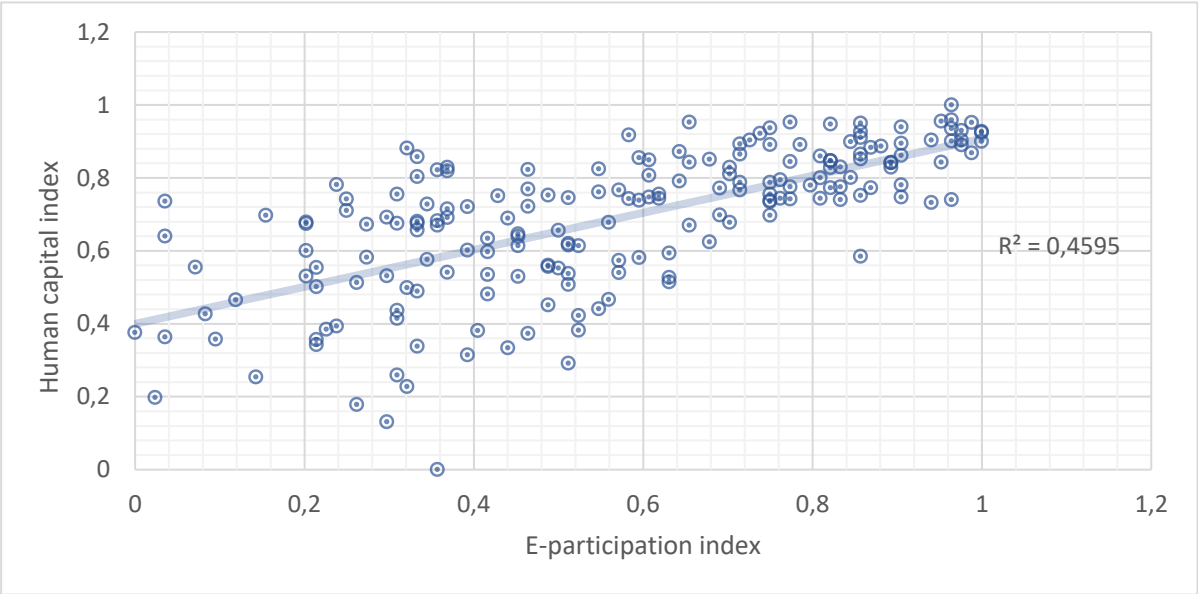


Source: UN E-Government Survey, United Nations, 2020.

[24] Legal updates for Employment law during COVID-19 | Fieldfisher 2021.
[25] The Impact of COVID-19 on Employment in Japan | Employment & Labour Law 2021 | ICLG

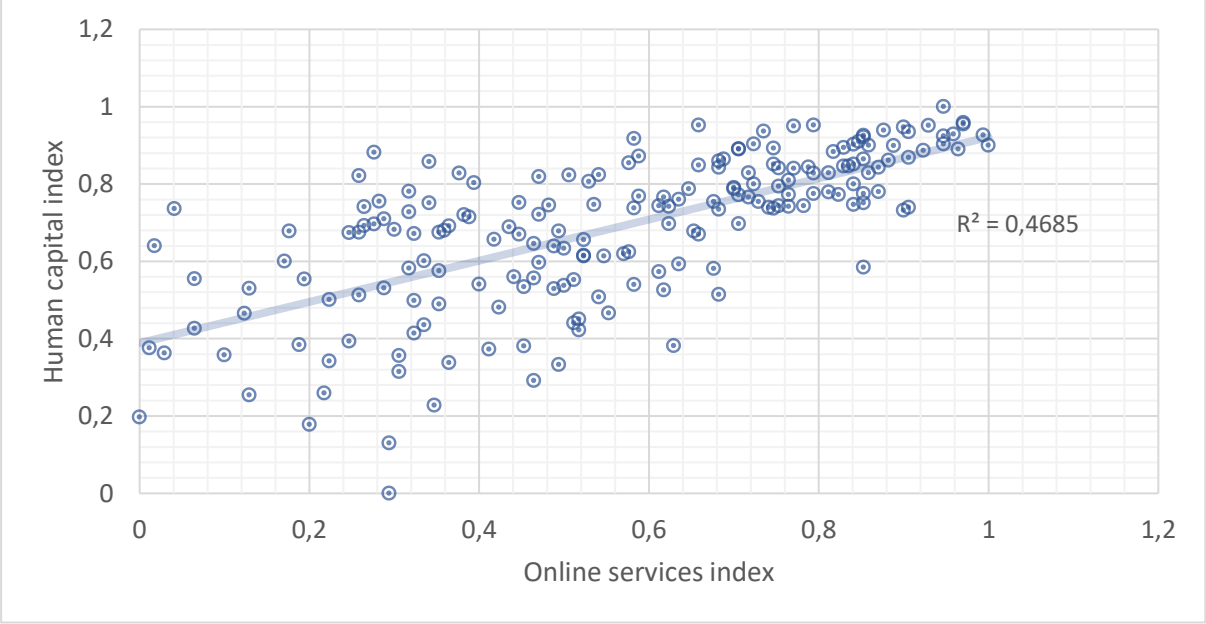
Using the E-governance report and World Bank Data databases, several correlations are observed, showing the relationships between digitalisation, human capital and social vulnerability factors.

Figure 6. E-participation and human capital indexes, 2020



Source: data extracted for the UN E-Government Survey, United Nations, 2020.

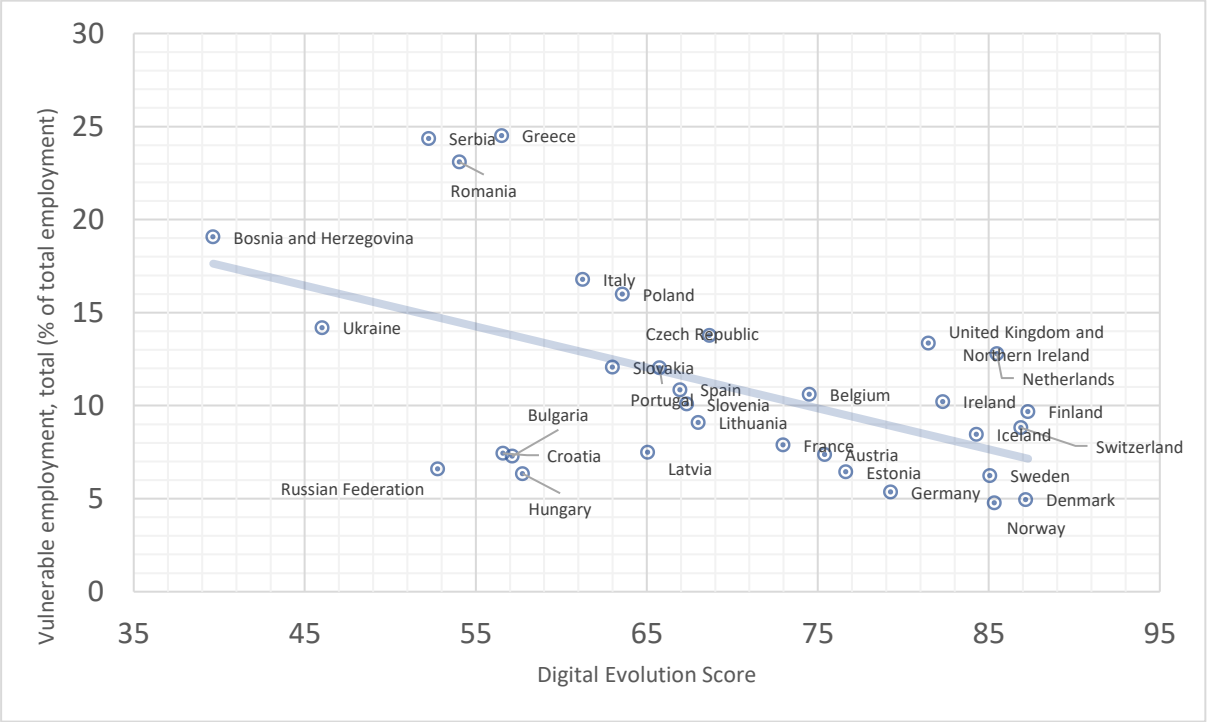
Figure 7. Online services and human capital indexes, 2020



Source: data extracted for the UN E-Government Survey, United Nations, 2020

Figures 6 and 7 show that the human capital index in 150 countries is closely correlated with the E-participation and online services indexes. This shows that the most digitally oriented countries are those which have the most assets such as education, training, intelligence, skills and health.

Figure 8. Digital evolution score and vulnerable employment, 2020



Source: data extracted from (B. Chakravorti, et al., 2020) and World Bank Data database

Figure 8 shows the negative correlation in Council of Europe member states between the digital evolution score and vulnerable employment. This shows that in Europe better digital integrity can lead to better protected employment.

Europe's digital agenda is multidimensional. The recent Regulation (EU) 2021/694 of the European Parliament and the Council, approved in April 2021[26], defines EU digital strategy as a socially inclusive concept for the digitalisation of society and business. It seeks to balance digital development and human-oriented digital interactions for a fair, open and sustainable digital experience. The regulation addresses the main innovative digitalisation trends, such as artificial intelligence, cybersecurity, and digital skills, introducing key operational objectives. In November 2021, the EU also confirmed its general approach in relation to the Digital Services Act and the Digital Markets Act, two key legislative initiatives aiming to create a safe and open digital space for EU citizens and businesses[27].

Digital companies are greener. On this point, the European Commission states "during the Digital Decade, Europe faces two important challenges: the green transition and the digital transition. These might seem like two distinct issues, but really, they are twin challenges: neither can succeed without the other. And, they are both equally important for Europe's

[26] Regulation (EU) 2021/694 of the European Parliament and of the Council establishing the Digital Europe Programme, April 2021.
[27] A digital future for Europe - Consilium (europa.eu)

future"[28]. However, certain digitalisation solutions such as data mining, big data centres, and supercomputers consume high volumes of energy. It needs to be recognised that these have considerable potential to pollute and that they will need to be subject to restrictive standards.

Digital firms invest more in measures to improve energy efficiency (Digitalisation in Europe, 2021). The majority of large firms in the European Union have invested in measures to improve energy efficiency. However, investment decisions regarding energy efficiency are not only driven by firm size but also by their digital status. In the European Union, only 54% of large non-digital firms invested to improve energy efficiency in the past financial year, compared with 69% of large digital firms. The gap between non-digital and digital firms investing in energy efficiency is less pronounced for small firms.

The Fletcher School at Tufts University report (B. Chakravorti, et al., 2020) stresses that European nations – perhaps due to their strong performance on inclusion and innovative policymaking – enjoy some of the most optimistic attitudes around digitalisation.

On the other hand, due to the emergence of digitalisation, practical concerns on social influence often arise.

In the modern world, big data is a socio-economic phenomenon, which is associated with the appearance of new technological opportunities for analysing huge volumes of data. The criticism of big data is mainly related to the fact that its analysis uses opaque algorithms that cannot be evaluated and verified – it is unclear what data has been taken into account, or why and how a given conclusion is arrived at. In addition, the collection, storage and processing of large amounts of diverse information create many opportunities for leaks and breaches of confidentiality.

A practical problem in the field of artificial intelligence ethics, and in digital ethics as a whole, is the lack of a unified conceptual framework. Since there is no formal, or at least constructive, description of the main ethical rules that apply to technical research, moral aspects are often limited to their everyday, intuitive interpretation. Society does not yet have a clear understanding of advances in artificial intelligence technology. A gap is observed between developers, researchers and end-users.

The UN digital development report stresses the human-centric and human capital issues in digital development, stating that uneven access to affordable digital technologies and limited capacities to make effective use of them can lead to an inequitable distribution of benefits. In particular, it may bypass people with limited education and low levels of literacy, people in rural areas, people with limited capability or rights to connect, and micro-, small and medium-sized enterprises. There is concern that the widespread use of new technologies, automation and online platforms will lead to job losses, growing income inequality and a greater concentration of market power and wealth. It may also have negative impacts on the bargaining power of users, consumers and workers and result in the loss of privacy. Moreover, companies, organisations, governments and individuals should be prepared to respond to the digital forms of undesirable behaviour – some of it criminal – that will move into the digital sphere. Finally, frontier technologies raise legal, regulatory and ethical challenges regarding the growing decision-making power of devices and algorithms using machine learning and large-scale data analysis[29].

[28] Green digital | Shaping Europe's digital future (europa.eu)
[29] Digital development: Opportunities and challenges, United Nations Conference on Trade and Development, 2019. Link - Digital development: Opportunities and challenges (unctad.org)

The issues of organisation and management of labour relations within digital work platforms have become fundamental. In many countries, the future of labour relations is now uncertain. This phenomenon results from digitalisation and employer-employee relations in the context of platforms, which simplify social relations. Work relations in the context of digitalised work platforms often differ from traditional working relationships with their "employee-platform-customer" relationships and employees acting as informal employees in some countries. In this sense, the boundaries of labour relations become blurred and more uncertain, when labour rights are not fully protected in employer-employee relationships. In many developing countries, in particular, it is uncertain whether employees of work platforms have the right to a minimum salary and other social rights. This has led to a tendency for many workers, who should be protected by labour law, not receiving that protection either *de facto* or by law. Since the beginning of the 2000s, this issue has been addressed by international organisations and, in the last decade, particularly in developed countries, legal solutions have been found.

Within the context of digitalisation developments and innovation, social rights may often be sensitive and vulnerable, above all in developing countries. This issue arises from the fast, continuous, positive and efficiency-raising penetration of digital innovation in society and business, circumstances in which classic social models cannot work effectively, and for which more controllable, practical solutions are required. For smoother and human-centric digitalisation, nations will need to pay greater attention to human capital and digital skills in general.

Chapter 2. Digital transformation, communities, markets and governance

2.1. COVID-19 and digitalisation

The COVID-19 pandemic has accelerated technology trends, including digital payments, telehealth and robotics.

These technologies help reduce the spread of the coronavirus and allow businesses to stay open.

Technology can help make society more resilient in the face of pandemics and other threats. These technical trends can also help protect social rights and improve social cohesion[30].

Throughout the COVID-19 pandemic, technologies have played a crucial role in keeping our society operational in a time of lockdowns and quarantines[31]. These technologies could have a long-lasting impact well beyond COVID-19.

Based on an extensive analysis, it is possible to identify trends that can help build a resilient society, as well as to consider their effects on how we do business, how we trade, how we work, how we produce goods, how we learn, how we seek medical services and how we entertain ourselves.

a) Online shopping and robot deliveries

In late 2002, the SARS outbreak led to a tremendous growth of both business-to-business and business-to-consumer online marketplace platforms in China. In a similar way, COVID-19 has transformed online shopping from a nice-to-have to a must-have around the world.

Online shopping needs to be supported by a robust logistics system. In-person delivery is not virus-proof. Many delivery companies and restaurants are launching contactless delivery services where goods are picked up and dropped off at a designated location instead of from or into the hands of a person. Some e-commerce companies are also ramping up their development of robot deliveries. However, before robot delivery services become prevalent, delivery companies need to establish clear protocols to safeguard the hygiene of delivered goods.

b) Digital and contactless payments

Since cash may carry the virus, central banks have implemented various measures to ensure banknotes are clean before they go into circulation. Now, contactless digital payments, either in the form of cards or e-wallets, are the recommended payment method to avoid the spread of COVID-19. Digital payments enable people to make online purchases of and payments for goods, services and even utilities, as well as to receive stimulus funds more rapidly.

[30] Ministers to chart Europe's digital future with post-Covid-19 commitments, Euractiv, 2020. Link - https://www.euractiv.com/section/digital/news/ministers-to-chart-europes-digital-future-with-post-covid19-commitments/

[31] Digitization can make the post-COVID world a better place | World Economic Forum, 2020.

The availability of digital payments also relies on Internet availability, devices and a network to convert cash into a digitalised format.

c) Remote working

Many companies have asked employees to work from home. Remote working is enabled by technologies including virtual private networks (VPNs), Voice-over-Internet protocols (VoIPs), virtual meetings, cloud technology, work collaboration tools and even facial recognition technologies that enable a person to appear in front of a virtual background to preserve the privacy of their home. In addition to preventing the spread of viruses, remote working also saves commuting time and offers greater flexibility.

Remote working, however, also poses challenges to both employers and employees. Information security, privacy and timely tech support can be big issues, as revealed by recent class actions filed against Zoom. Remote working can also complicate labour law issues, such as those associated with providing a safe work environment, and income tax issues. Employees may experience loneliness and a lack of work-life balance. If remote working becomes more common after the COVID-19 pandemic, employers may decide to reduce lease costs and hire people from regions with cheaper labour costs.

Member states may need to consider whether laws and regulations will need to be updated to accommodate remote working – and further psychological studies need to be conducted to understand the effect of remote working on people.

In addition, not all jobs can be done from home, which gives rise to disparities. Some professions, such as medical services and manufacturing, may not have the option at all. Policies with respect to data flows and taxation would need to be adjusted should the volume of cross-border digital services rise significantly.

d) Distance learning

As of mid-April 2020, many educational institutions started offering courses online to ensure education was not disrupted by quarantine measures. The technologies involved in distance learning are similar to those for remote working and also include virtual reality, augmented reality, 3D printing and artificial-intelligence-enabled robot teachers.

Concerns about distance learning include the possibility that the technologies could create a wider divide in terms of digital readiness and income levels[32]. Distance learning could also create economic pressure on parents – more often on women, as they often take on most of the unpaid care work at home – who may need to stay home to look after their children and who may risk being less productive at work.

e) Telehealth

Telehealth can be an effective way to contain the spread of COVID-19 while still providing essential primary care. Chatbots can make initial diagnoses based on symptoms identified by patients.

However, in countries where medical costs are high, it is important to ensure telehealth will be covered by insurance. Telehealth also requires a certain level of tech literacy to operate, as well as a good Internet connection. As medical services are one of the most heavily regulated businesses, doctors typically can only provide medical care to patients who live in the same

[32] Digital skills and competence, and digital and online learning, ETF, 2020.

jurisdiction. Legislators, at the time they drafted legislation, may not have envisioned a world where telehealth would be available.

f) Online entertainment

Although quarantine measures have reduced in-person interactions significantly, human creativity has brought the party online. Cloud raves and online streaming of concerts have gained traction around the world. Museums and international heritage sites offer virtual tours. There has also been a surge of online gaming traffic since the outbreak.

g) Supply chain 4.0

The COVID-19 pandemic has created disruptions to the global supply chain. With distancing and quarantine measures, some factories had to completely shut down. While demand for food and personal protective equipment has soared, some countries have implemented different levels of export bans on those items. Heavy reliance on paper-based records, the fact that the data is not always fully available or accessible, and the lack of diversity and flexibility have made existing supply chain systems vulnerable to pandemics.

Core technologies of the Fourth Industrial Revolution, such as Big Data, cloud computing, the Internet-of-Things ("IoT") and blockchain, are building a more resilient supply chain management system for the future by enhancing the accuracy of data and encouraging data sharing.

h) 3D printing

3D printing technology has been deployed to mitigate shocks to the supply chain and export bans on personal protective equipment. 3D printing offers flexibility in production: the same printer can produce different products based on different design files and materials, and simple parts can be made onsite quickly without requiring a lengthy procurement process and a long wait for the shipment to arrive.

However, mass production using 3D printing faces a few obstacles. First, there may be intellectual property issues involved in producing parts that are protected by patent. Second, production of certain goods, such as surgical masks, is subject to regulatory approvals, which can take a long time to obtain. Other unsolved issues include how design files should be protected under patent regimes, the place of origin and the impact on trade volumes, and product liability associated with 3D printed products.

i) Robotics and drones

COVID-19 has made the world realise how heavily its reliance is on human interactions to make things work. Labour-intensive businesses, such as retail, food, manufacturing and logistics have been the worst hit.

COVID-19 provided a strong impetus to roll out the use of robots and research on robotics. Recently, robots have been used to disinfect areas and to deliver food to those in quarantine. Drones have walked dogs and delivered items.

While there are some reports that predict many manufacturing jobs will be replaced by robots in the future, at the same time, new jobs will be created in the process. Policies must be in place to provide sufficient training and social welfare to the labour force to embrace the change.

j) 5G and information and communications technology (ICT)

All the aforementioned technological trends rely on stable, high-speed and affordable Internet. While 5G has demonstrated its importance in remote monitoring and healthcare consultation, the rollout of 5G has been delayed in Europe at a time when the technology may be most needed. The adoption of 5G will increase the cost of compatible devices and the cost of data plans. Addressing these issues to ensure inclusive access to Internet will continue to be a challenge as the 5G network expands globally.

k) The importance of digital readiness

COVID-19 has demonstrated the importance of digital readiness, which allows business and life to continue as usual – as much as possible – during pandemics. Building the necessary infrastructure to support a digitised world and stay current with the latest technology will be essential for any business or country to remain competitive in a post-COVID-19 world, as will taking a human-centred and inclusive approach to technology governance.

Digitalisation and pandemics have accelerated changes to jobs available to humans. How to mitigate the impact on the general workforce and the most vulnerable is an issue across all industries and countries that deserves not only attention but also a timely and human-centred solution.

2.2. Technology, democracy and government

The idea of using new technologies to support, enhance, expand, or re-invigorate democratic practices is not novel. The history of 20th century media has demonstrated that the introduction of new communication technologies routinely gives rise to intense speculation about their impact on the processes and practices of democracy. In the case of computer-mediated communication and information technologies, that speculation has been particularly intense, and has been applied to broad processes of democratic decision making and e-democracy, as well as to more targeted forms of government action as e-government. Studies of e-democracy generally focus on the ways that the Internet and its associated technologies may work to “amplify the political voice of ordinary citizens” in broad political processes. This happens by increasing the availability of information required for the development of policy preferences; by dislocating entrenched monopolies on information distribution by media elites in favour of other information providers; by encouraging political participation in campaigning, referenda and voting; by interacting with elected representatives; and by engaging in deliberation over policy in public venues. In contrast, the field of e-government has focused more squarely on the use of technology within the routine activities undertaken by public organisations: the provision of public services, the quality and cost-effectiveness of basic government operations, citizen engagement and consultation, the statutes and legislative mandates required to effect these processes, and the administrative and institutional reforms undertaken in pursuit of innovation.

The decisions made by administrators have been assumed to be largely technical, taken principally to implement legislative mandates, and best made by employees who are assumed to possess the requisite expertise. Thus, participation of the public is not needed. Administrators exercise discretion in selecting among options for designing and implementing policy; in doing so, they make value judgments at all stages of the policy process. It is increasingly recognised that administrative agencies must be responsive to the public which can be accomplished indirectly through action by elected representatives.

Taken as a whole, the set of value generators consists of:

• efficiency – obtaining increased outputs or goal attainment with the same resources or obtaining the same outputs or goals with lower resource consumption.

• effectiveness – increasing the quality of the desired outcome.

• intrinsic enhancements – changing the environment or circumstances of a stakeholder in ways that are valued for their own sake.

• transparency – access to information about the actions of government officials or operation of government programmes that enhances accountability or influence on government.

• participation – frequency and intensity of direct involvement in decision making about or operation of government programmes or in selection of or actions of officials.

• collaboration – frequency or duration of activities in which more than one set of stakeholders share responsibility or authority for decisions about operation, policies, or actions of government.

A good example of e-governance: the success story with e-Estonia.

The term e-Estonia captures the activities and aspirations of Estonia being a cutting-edge digital society[33]. Initially, it referred to government digital services. It later expanded to include the start-up and tech culture that emerged within the private sector. This whole-of-government rethinking of public services and the relationship between citizen and state has largely depended on strong political drive and the making of critical decisions with regard to building the foundations of e-governance. Some of the first steps towards achieving the current level of digitalisation were taken in the early ’90s with the Parliament setting out a strategic outline for information technology (IT) development, including several nation-wide initiatives with the private sector. These initiatives included Tiger Leap, which sought to establish computer skills in schools, and the Look@World initiative, which targeted the wider population and their ICT skills. These initiatives and policy decisions have led to a high level of maturity of digital public services, the majority of which are digital and accessible online.

[33] Estonia – a European and global leader in the digitalisation of public services, 2021. Link - https://e-estonia.com/estonia-a-european-and-global-leader-in-the-digitalisation-of-public-services/

Important in this regard is how to put in place the key enablers for a digitally enabled society: interoperability and digital identity. These enablers form an ecosystem in which to develop digital services and secure ways for citizens to access them online. Estonia successfully put in place these two enablers and, as a result, was able to spearhead the development of digital public services. Digital identity, aims to establish a person's unique identity, provide proof of that identity, and make it possible to assert that identity. Interoperability, in this context, refers to secure data interoperability between government and private sector databases and registries.

A concept described in the strategy as customer-centricity is the key to achieving a whole-of-government approach in digital public services. Digital government should absorb the complexity of government on behalf of the citizen. The citizen does not have to know how the government is organised or have to navigate a complex labyrinth of government structures to access and receive public services. With the near totality of government services online, this is where Estonia excels.

These services are accessible, location- and device-independent, in a way that most of the complexities of governance are hidden from the citizen. Absorbing complexity means that public services are designed in a way that citizens can conduct their activities without having to constantly switch between agencies for different forms or certificates. This should be solved in the back-end systems and business processes of these organisations so that the citizen has a simpler experience through either a one-stop-shop model, such as a citizen portal, or through an agency portal that has made the necessary integrations with other stakeholders that are relevant in delivering the services they provide. An Estonian citizen experiences government or e-governance primarily through the services they receive. The effectiveness and seamlessness of these services rely on having interoperability and digital identity as the building blocks in place. Absorbing the complexity of government means that the citizen does not have to spend time requesting, filing, and carrying papers from one agency to another in order to submit data that other parts of the administration already have and to prove their identity in ways that do not provide high levels of assurance or withstand the scrutiny of the information security community. In addition to the benefits for citizens, there are efficiency gains for the administration and private enterprise as a result of simplified reporting, receiving certificates, business licenses, and other documents necessary for operating and growing a business.

The distribution of power is especially relevant when developing a digital government, as there is not only the distribution between the three branches, but also within the executive to be considered. There are political and policy mandates, organisational boundaries that different parts of the federal government, states, departments, and municipalities have. This is something that the Estonian approach to e-governance has understood and taken inspiration from so as to avoid centralisation between the branches, but even more so within the executive. X-Road which, since 2001, has been the solution that drives e-Estonia, is based on the principles of decentralisation and distribution. The assumption is that every organisation has a mandate that sets out its mission and, as a result, the services it provides and the data it collects (for which it acts as a single source of truth) or needs (which it seeks from other organisations that act as single sources of truth) for those services. The interoperability platform acts as an ecosystem of trusted counterparts. After the coordinating body has accepted an organisation, the organisation implements a standardised security gateway for data exchange. Exchanging data in this distributed model is done peer-to-peer, organisation-to-organisation. Data does not flow through any intermediaries or centralised message hubs.

Organisations establish service-level agreements between each other to agree what kind of data, for what purpose and scope, is to be exchanged and what the obligations are on both sides. The exchange of a particular piece of data is based on access control lists. As a result, an organisation can only query a defined “data service” that provides it with the information it needs to execute a business process. All of these transactions are logged, digitally signed, and time-stamped to provide long-term proof of value, auditability, and non-repudiation, among other principles. Building an e-state, an e-government founded on democratic principles, and building an e-kingdom, an e-government founded on non-democratic principles, require different approaches.

All of this has an impact on the protection of social rights. One of the important aspects of this issue arises when enforcing or protecting individuals’ social rights (e.g. the rights that have been determined and described in the European Social Charter). The European Social Charter prescribes the rights to be protected and enforced by the state. As digitalisation in general has changed interactions between people, it has also changed interactions with the state (less paperwork, the use of plastic cards, etc.) and new issues have arisen (identification, personal information shared between different institutions, etc.).

Chapter 3

3.1. Social rights and digitalisation implications

In Council of Europe member states, electronic voting, facial recognition programmes for various purposes, algorithm-based predictive policing, digitalisation of justice and immigration systems, and online submission of tax returns, are becoming the norm. World-wide in lower income countries, comprehensive national systems of biometric identification are laying the foundations for comparable developments. Invariably, improved welfare provision, along with enhanced security and financial inclusion are the principal goals invoked to justify the deep societal transformations and vast expenditures involved in moving the entire population of a country over to centralised data systems. There is much to be said for systems that coordinate access to government services ranging from food distribution and access to education to the provision of health care and special services for elderly or disabled people[34].

As a result, “digital welfare states” are emerging in many countries across the globe. Social protection and assistance systems are increasingly driven by digital data and technologies used to automate, predict, identify, monitor, detect, target and punish. Widely referred to as “digital transformation”, this neutral description should not be permitted to conceal the revolutionary and politically driven character of many such innovations.

Often, however, the digitalisation of welfare systems has been accompanied by deep reductions in the overall welfare budget, a narrowing of the beneficiary pool, the elimination of some services, the introduction of demanding and intrusive forms of conditionality, the pursuit of behavioural modification goals, the imposition of stronger sanctions regimes, and a complete reversal of the traditional notion that the state should be accountable to the individual.

The mainstream tech community has been guided by governmental pre-occupations with efficiency, budget-savings, and fraud detection. The welfare community has tended to see the technological dimensions as separate from the policy developments, rather than as being integrally linked. Those in the human rights community concerned with technology have understandably been focused on concerns such as the surveillance state, the potentially fatal undermining of privacy and the highly discriminatory impact of many algorithms.

In response, the World Bank, regional development organisations and bilateral donors have launched new programmes to promote **access to identity documents.** On the positive side, digital technology can “create huge savings for citizens, governments, and businesses by reducing transaction costs, increasing efficiency, and driving innovation in service delivery, particularly to the poorest and most disadvantaged groups in society”.

In addition, **the calculation and payment of benefits** is increasingly done using digital technologies without the involvement of human decision-makers. These systems offer many potential advantages, but there are numerous examples of system errors or failures generating major problems for large numbers of beneficiaries. Many digital welfare systems have been designed with a disproportionate emphasis on the **capacity to match data from different sources in order to expose deception and irregularities on the part of welfare applicants**.

[34] Digital technology and social change, Soroptimist International, 2020. Link - https://www.soroptimistinternational.org/digital-technology-and-social-change/#

A digital welfare state designed along these lines provides endless possibilities for taking surveillance and intrusion to new and deeply problematic heights.

The processes of digitalisation and the increasing role played by automated decision-making through the use of algorithms and artificial intelligence have facilitated a move towards a detached bureaucratic process and away from one designed to give meaning to the assumptions underlying the right to social protection. Instead of the State being accountable to the citizen for ensuring an adequate standard of living for all, the burden of accountability is now on the citizen to demonstrate that he or she is somehow deserving. Thus, today's digital welfare state is often underpinned by the starting assumption that the individual is not a rights-holder but an applicant. The imposition of technological requirements can make it impossible or very difficult for individuals to assert their rights effectively.

Digital technologies, including those using artificial intelligence, have huge potential to promote the many benefits that are consistently invoked by their proponents. But that will not happen unless governments harness the new technologies through appropriate fiscal policies and incentives, regulatory initiatives, and show a genuine commitment to designing a progressive digital welfare state to ensure a decent standard of living for everyone in society.

3.1.1 Social security issues[35]

Identity verification

A verifiable identity is essential for applying for benefits, establishing entitlements, receiving benefits and appealing against the denial of benefits. For the government or another provider, a verifiable identity avoids duplication and fraud, facilitates accurate targeting and enhances efficiency. Traditionally, paper and/or plastic documents have been used in forms such as birth certificates, identity cards and passports.

In response, the World Bank, regional development organisations and bilateral donors have launched new programmes to promote access to identity documents. In particular, the World Bank's Identification for Development (ID4D) campaign has focused heavily on promoting digital technologies. The role of digital technology in identity documents is set out in the "Principles on identification for sustainable development: toward the digital age"[36], which were facilitated by the World Bank and the Centre for Global Development and have been widely endorsed, including by MasterCard.

It is acknowledged that both advantages and disadvantages are involved. On the positive side, it is claimed that digital technology can create huge savings for citizens, governments and businesses by reducing transaction costs, increasing efficiency and driving innovation in service delivery, particularly to the poorest and most disadvantaged groups in society. It is also noted that digital identity systems can also improve governance, boost financial inclusion, reduce gender inequalities by empowering women and girls, and increase access

[35] See also: Social security for the digital age, 2019, available: https://ww1.issa.int/news/social-security-digital-age
[36] Principles on identification for sustainable development: toward the digital age, available: https://documents1.worldbank.org/curated/en/213581486378184357/pdf/Principles-on-Identification-for-Sustainable-Development-Toward-the-Digital-Age.pdf

to health services and social safety nets for poorer people. However, in addition to this impressive and by now familiar sales pitch, possible risks are recognised. Those risks can range from political backlash to concerns over privacy, security and cybersecurity. Solutions for dealing with those risks are often technological or take the form of soft law norms.

Eligibility assessment.

Automated programmes are increasingly used to assess eligibility in many countries. An especially instructive case was the automation of eligibility decisions in Ontario, Canada, in 2014, through the Social Assistance Management System, which was based on Cúram, a customizable, off-the-shelf IBM software package also used in welfare programmes in Australia, Germany, New Zealand and the United States.

Welfare benefit calculation and payments.

The calculation and payment of benefits is increasingly done using digital technologies without the involvement of caseworkers and other human decision makers. While such systems offer many potential advantages, should there be system errors or failures, major problems can be generated for large numbers of beneficiaries. Electronic payment cards or debit cards are increasingly being issued to welfare recipients.

The use of such cards also creates problems.

First, beneficiaries often face difficulties accessing and fully utilising their right to social security.

Second, when such cards are clearly recognisable as welfare-related, users may sense feelings of disempowerment, embarrassment and shame, a problem exacerbated when the users come from communities long accustomed to exclusion.

Third, electronic cards enable monitoring and surveillance of behavioural data by welfare authorities and private actors, thus raising important human rights concerns. Moreover, the outsourcing of the issuance and administration of electronic cards to private companies has led to problems such as users being encouraged to pay for commercial financial products and the imposition of user fees. More generally, the ethos surrounding such cards has often reflected stereotypes such as the financial untrustworthiness and irrationality of those living in poverty.

Many other areas of the welfare state will also be affected by new technologies used to score risks and classify needs. While such approaches offer many advantages, it is also important to take into account the problems that can arise. First, there are many issues raised by determining an individual's rights on the basis of predictions derived from the behaviour of a general population group. Second, the functioning of the technologies and how they arrive at a certain score or classification are often secret, thus making it difficult to hold governments and private actors to account for potential rights violations. Third, risk-scoring and the need categorisation can reinforce or exacerbate existing inequalities and discrimination.

Communication between social welfare authorities and beneficiaries

Communication that previously took place in person, by phone or by post is increasingly being replaced by online applications and interactions. There have also been problems with secured communications, including difficulties linked to a lack of Internet access and/or digital skills and the extent to which online portals can create confusion and obfuscate legal decisions, thereby undermining the right of claimants to understand and appeal decisions affecting their social rights. There is also a risk arising from digitalising the application and payments maintenance process. In this area, digital technology is still gaining ground.

Household-level and individual-level data rely on a fundamental personalisation of risk, attaching risk factors to individual characteristics and behaviour that can lead to individualised responses to social ills being privileged over collective and structural responses, such as the issues of inequality, poverty or racism.

Digital technologies, including artificial intelligence, have huge potential to promote the many benefits that are consistently cited by their proponents. They are already doing so for those who are economically secure and can afford to pay for the new services. They could also make an immense positive difference by improving the well-being of the less well-off members of society, but this will require deep changes in existing policies. The leading role in any such effort will have to be played by governments through appropriate fiscal policies and incentives, regulatory initiatives and a genuine commitment to designing the digital welfare state not as a Trojan horse for neoliberal hostility towards welfare and regulation but as a way to ensure a decent standard of living for everyone in society. Governments must ensure through appropriate instruments that new technologies, such as artificial intelligence, do not lead to discrimination.

3.1.2 Protecting social rights in the digitalisation era

Egalitarianism is a consistent theme of the technology industry, as exemplified by Facebook's aim "to give people the power to build community and bring the world closer together". At the macro level, however, big tech has been a driver of growing inequality and has facilitated the creation of a "vast digital underclass". For its part, the digital welfare state sometimes gives beneficiaries the choice to go digital or to continue using more traditional techniques. In reality, however, policies such as "digital by default" or "digital by choice" are usually transformed into "digital only" in practice. This in turn exacerbates or creates major disparities among different groups. A lack of digital literacy leads to an inability to use basic digital tools at all, let alone effectively and efficiently. Limited or no access to the Internet poses huge problems for a great many people. Additional barriers arise for individuals who have to pay high prices to obtain Internet access, travel long distances or absent themselves from work to do so, visit public facilities such as libraries in order to get access, or obtain assistance from staff or friends to navigate the systems. Moreover, while the well-off might have instant access to up-to-date and easy-to-use computers and other hardware, as well as fast and efficient broadband speeds, the least well-off are far more likely to be severely disadvantaged by out-of-date equipment and time-consuming and unreliable digital connections.

The United Kingdom provides an example of a wealthy country in which, even in 2019, 11.9 million people (22 per cent of the population) do not have the essential digital skills needed for day-to-day life. An additional 19 per cent cannot perform fundamental tasks such as turning on a device or opening an application. In addition, 4.1 million adults (8 per cent) are offline because of fears that the Internet is an insecure environment; almost half of these persons are from low-income households and almost half are under 60 years of age. These problems are compounded by the fact that, when digital technologies are introduced into the welfare state, their distributive impact is often not the main focus of governments. In addition, vulnerable individuals are not commonly involved in the development of information technology systems, and information technology professionals are often ill-equipped to anticipate the sort of problems that are likely to arise. It is often assumed, without justification, that individuals will have ready access to official documents and be able to upload them, that they will have a credit history or broader digital financial footprint, or even that their fingerprints will be readable, which is often not the case for those whose working lives have involved unremitting manual labour. In terms of digital welfare policy, several conclusions emerge. First, there should always be a genuine, non-digital option available. Second, programmes aimed at digitising welfare arrangements should be accompanied by programmes designed to promote and teach the digital skills needed and ensure reasonable access to the necessary equipment, as well as effective online access. Third, in order to reduce the harm caused by incorrect assumptions and mistaken design choices, digital welfare systems should be co-designed by their intended users and evaluated in a participatory manner.

The processes of digitalisation and the increasing role played by automated decision-making through the use of algorithms and artificial intelligence have, in at least some respects, facilitated a move towards a bureaucratic process and away from one premised on the right to social security or the right to social protection. Rather than the ideal of the State being accountable to the citizen to ensure that the latter is able to enjoy an adequate standard of living, the burden of accountability has in many ways been reversed. To a greater degree than has often been the case in the past, today's digital welfare state is often underpinned by the starting assumption that individuals are not rights holders but rather applicants. In that capacity, people must convince the decision-makers that they are deserving, that they satisfy the eligibility criteria, that they have fulfilled the often onerous obligations prescribed and that they have no other means of subsistence. In addition, much of this must be done electronically, regardless of applicants' skills in that domain.

The right to social security encompasses the right to access and maintain benefits, whether in cash or in kind, without discrimination. The imposition of technological requirements can make it impossible or very difficult for individuals to effectively access that right. The right to social protection is integrally linked to what the UN Human Rights Committee refers to as "the right to live with dignity, which must be protected, where necessary, through measures designed to ensure access without delay by individuals to essential goods and services such as food, water, shelter, health care, electricity and sanitation, and other measures designed to promote and facilitate adequate general conditions". Various other rights are also implicated, including the right to an adequate standard of living and the right to be treated with dignity. While social protection in general should be designed to protect those rights, the dignity dimension is at particular risk in the context of the digital welfare state.

The potential risks arise in various contexts. First, the process for determining eligibility may easily be transformed into an electronic question-and-answer process that almost inevitably puts already vulnerable individuals at an even greater disadvantage. Second, the way in which determinations are framed and communicated may be dehumanised and allow no room for meaningful questioning or clarification. Third, the digital welfare state often seems to involve various forms of rigidity and the robotic application of rules. As a result, extenuating circumstances, such as being late for an appointment because of urgent caring obligations or being unable to understand a written communication because of a disability or a personal crisis, are often not taken into account in a predominantly digital context. Fourth, digital systems are often not designed to respond rapidly either to serious emergencies or to daily challenges, such as those that may be experienced by an older person whose entitlement has suddenly and inexplicably been electronically reduced or cancelled, or by a single parent unable to take a child to a local day care centre because the digital identification card will not function. Fifth, the ways in which services are provided can easily have degrading connotations, such as unnecessary exposure to a broader audience of the fact that a person is reliant on benefits, or requiring extended waiting periods, or the navigation of lengthy queues. Sixth, the introduction of various new technologies that eliminate the human provider can enhance efficiency and provide other advantages but might not necessarily be satisfactory for individuals who are in situations of particular vulnerability. New technologies often operate on the law of averages, in the interests of majorities and on the basis of predicted outcomes or likelihoods. Seventh, digital services risk eliminating, almost entirely, much of the human interaction and compassion that are likely to be indispensable components in providing at least some welfare recipients with the care and assistance they need. The assumption that there is always a technological fix for any problem is highly likely to be misplaced in various aspects of a humane and effective system of social protection.

The fact that digitalisation, in a general sense, implies the use of personal data of people using their social rights (especially to social security and social assistance raises additional concerns.

A first concern, in the context of social security benefits and assistance, is that there is a real risk of beneficiaries being effectively forced to give up their right to privacy and data protection to benefit from their right to social security, as well as other social rights.

A second concern is the blurring of the lines between public and private surveillance. Welfare state authorities increasingly rely, either actively or passively, on private corporations for the surveillance and targeting of beneficiaries. Private entities have different motives for their involvement in benefit and social assistance systems and this may lead to conflicts between the public interests that these systems ought to serve and the private interests of corporations and their owners.

A third concern is the potential for deliberate targeting and harassment of the poor through new technologies in the welfare state.

However, by deliberately using the power of new technologies to identify fraud or violations of “conditionalities” imposed on beneficiaries, governments are likely to find inconsistencies that they can hold against claimants. New abilities to collect information and store it digitally for an undefined period of time create a future in which a wealth of information can be held against someone indefinitely.

Additional concerns that warrant greater consideration than can be provided in this research include: (a) the human rights consequences of the move to predicting risk instead of the *ex post* enforcement of rule violations; (b) the dangers of connecting government data silos, which are more readily contemplated in the welfare context than elsewhere in the field of digital governance; (c) the psychological and societal cost of constant monitoring and surveillance; and (d) the growing tendency to use the opportunities provided by the digital welfare state to try to alter social behaviours, such as preferences or approaches to cohabitation, the use of alcohol or drugs, and the decision to have children.

One important aspect of protecting social rights is also connected with the protection of people with special needs. As is well known, today, disability policy is built upon promoting and ensuring that persons with disabilities enjoy all human rights and fundamental freedoms on an equal basis with others in all aspects of social life without facing any discrimination and strengthening respect for their inherent dignity. In this context, the Convention on the Rights of Persons with Disabilities (CRPD), which recognises disability as a human rights issue, was adopted by United Nations on 16 December 2006.

The Convention, which is based on a human rights approach, provides for the equal participation of persons with disabilities in all aspects of social life like everyone else, and imposes significant obligations on States Parties to guarantee these rights. In this regard, disability policy has begun to be based on concepts such as human rights, non-discrimination, equality and participation, and efforts towards inclusive policies have gained more importance.

In recent times, the COVID-19 pandemic, which has affected everyone at the global level, required the introduction of priority measures for some population groups, including persons with disabilities, given the additional risks to which they are exposed and their consequences. It has become more important than ever before to take the needs of persons with disabilities into account in the policies and services introduced within the social, economic, and cultural transformation process generated by the pandemic.

In this respect, it is highly important to ensure that persons with disabilities benefit from human rights and have access to information, basic services, and products. Today, humanity has become very dependent on ICTs to access information, basic services and products. In fact, the world is experiencing a process in which ICTs are almost the only option for people to communicate with each other. This process has led to the inevitable use of technology also by persons with disabilities in daily life. In this regard, there is an increasing need for innovative, sustainable, integrated and personalised solutions for persons with disabilities. Since ICTs play a key role for persons with disabilities as for everyone else, it has become imperative to provide information and services in accessible formats. It is therefore critically important to use multiple modes of communication like accessible websites, phone, radio, videos, leaflets, captioning, chats, etc., as well as to provide information in plain language, and in easy-to-read and accessible formats. The access of persons with disabilities to vital information, to services in various areas of life, including health, education, and products they need, especially essential products like medicine, hygiene products, and food, has become more important than ever because of the contamination and social distancing measures in this period. For these reasons, ICT solutions taking into account the needs of persons with disabilities have become one of the priority issues throughout the world. The access of persons with disabilities to vital information, essential services and products such as medicine, hygiene products and food using appropriate means and inclusive ICT solutions will be key for their social inclusion both in the pandemic and recovery period.

3.2 Social cohesion in the digital era

The information and knowledge society requires citizens to be ever more digitally literate. In both formal and informal environments, education has a prominent role in promoting inclusion and social integration and helping citizens to develop the skills they need to access, record, edit, publish and share online content autonomously, judiciously and responsibly.

Since the generalisation of Internet use and the appearance of the "phenomenon of large volumes of data", the way in which information is accessed, managed, and transmitted, and therefore how knowledge is generated, has changed. This has led to significant changes in training processes (whether formal, non-formal or informal) and therefore also in education systems, especially in the more developed countries.

With this panorama before them, governments appear to be prepared to compromise in order to alleviate the consequences, risks and dangers to social equality posed by digitalisation. Here, we are referring not only to the investment of financial resources but also to the investment in "digital literacy" at its most elementary and urgent level, and to investment in "digital competence" as a new challenge that should be taken into consideration by today's education systems as a basic competence for citizens of the twenty-first century. We are talking about a profound transformation in society that is directed towards the new digital format of everything that surrounds it and that is tending inevitably towards change.

Basic digital skills are a necessity participating in a rapidly-changing society and in the labour market. This concerns everyone, but especially young people.

In recent years, the Council of Europe has worked extensively on ensuring **a safer Internet for children and young people**. The Council of Europe's Internet Governance Strategy (2012-2015) attaches considerable importance to the rights of Internet users, while the Council of Europe Strategy for the Rights of the Child (2016-2021), reinforced by the Recommendation CM/Rec(2018)7 of the Committee of Ministers to member states on Guidelines to respect, protect and fulfil the rights of the child in the digital environment (Council of Europe, 2018) has focused on children's rights on the Internet. These documents are in line with the Guide to human rights for Internet users (2014) which has a part dedicated to children and young people. The Recommendation of the Council of Europe on the access of young people from disadvantaged neighbourhoods to social rights (Council of Europe 2015b: pp. 18-19) included, as one of the ways of accomplishing youth social inclusion, the acknowledgement that all young people should have equal access to public amenities (including post offices, community centres, youth work centres, employment services, and ICT). The Council of Europe (2018) Recommendations on Guidelines to respect, protect and fulfil the rights of the child in the digital environment (Council of Europe, 2018) calls upon the member states to ensure that policies and initiatives are informed by rigorous and up-to-date evidence about young people's experiences in the digital environment. Work needs to be done to map existing opportunities and risks for young people, to identify emerging trends and to guide the targeting of policy and resources to ensure young people's well-being in the digital environment.

In general, international platforms and tools have been embraced by people as valuable resources and integrated in various activities. Thus, virtual meeting rooms (VMR) software (Zoom, Skype, ezTalks, etc.) and messaging applications (Telegram, Viber, Snapchat, etc.) have become popular among organisations and individuals, who use them as channels to better communicate with, reach out to and support more people, to organise their activities or to provide educational opportunities to various groups (especially young people).

Similarly, young people and specialists working with young people (youth workers, social workers, teachers, etc.) have access to various educational platforms that offer access to a multitude of opportunities. A list of the most popular includes, for example, edX, founded by Harvard and MIT. These offer a wide variety of free, open online courses provided by globally top-ranked universities and industrial companies.

The digital divide for people, especially for young people from disadvantaged backgrounds, in terms of access to the Internet and social media also leads to the "voice divide" on digital platforms.

From a social inclusion perspective, the main conclusion that stems from the examples gathered shows that topics relating to the challenges of the digital world and their impact on people – cyberbullying, social engineering, safety online and similar – have started to be integrated into different training programmes. This demonstrates that there is awareness and concern about these issues, as well as an intention to involve youth specialists, in particular, in minimising the potentially negative impacts of the above-mentioned challenges.

The digital means of social inclusion have tremendous potential to address the challenges faced particularly by the contemporary young generation, but only if they are guided by an awareness of the differences in resources, access, potential and the risks for youth well-being and the advancement of wider communities.

Digital technologies can bring a series of **opportunities** for people, in the following situations:

a) Health and well-being

The use of digital tools and social media can contribute significantly to the well-being of people, especially with regard to building trust and self-esteem, supporting education and improving skills:

- digital technologies have the potential to bypass fear of contact among people in need of professional help and of improving or sustaining mental health;[37]
- digital technology can provide destigmatised spaces fostering the ability to share personal stories, enhance social networks, and learn about resources from peers, as well as to gain information, insights and strategies for coping with challenges;
- social media and ICT tools can have benefits for peoples' mental health[38], by improving their social skills, talking to their friends and peers online, expressing themselves and initiating new actions;

[37] At the same time, digital technologies can include risks for mental health.
[38] Nevertheless, one cannot underestimate the risks for mental health.

- AI-powered technologies can serve as enablers for people with disabilities. These may be, for example, in the form of applications that transform text into speech for people with visual impairments.
- Digital health preventive and promotion services can enable and motivate people to engage in healthy behaviours. Digital offers have a special significance when, as in the case of during the pandemic, face-to-face formats are not possible.

b) Creativity and self-expression

The Internet and new technologies are already a natural environment for people (especially for young people), due to their constant use of digital tools. Nevertheless, people are not just consumers but also creators, since these new tools offer them new possibilities:

- blogging and vlogging have become widely popular for explaining various issues to a wider audience, as well as to create communities around specific topics;
- platforms have empowered large learning communities, where young people can create AI-based games, simulations, chatbots and more.

With digitalisation there are also risks which need more attention than ever before and could also have an impact on social cohesion

Risks

a) Cyberbullying

Limited digital skills and competences make people prone to cyberbullying. Cyberbullying is a form of violence that people can be exposed to, and it may include:

- sending or posting abusive or threatening messages;
- creating and sharing embarrassing photos or videos;
- sharing secrets about someone online without their consent;
- intentionally leaving someone out of an online activity or friendship group;
- voting on someone in an abusive poll;
- creating a website with mocking or critical content about someone;
- hijacking online identities or creating a fake profile to damage another’s reputation;
- sending explicit messages or encouraging a young person to send a text, then sharing that more widely;
- cyber-stalking: continuously harassing and denigrating, including by threats of physical harm.

b) Privacy and data protection

Data published and gathered online is becoming increasingly valuable and questions of privacy and data ownership are gaining in importance. This is currently partially managed by the European Union's General Data Protection Regulation (GDPR). However, there is a need to know who is behind an online identity, especially in the case of young people's online activities. Reliable methods of reconciling individual privacy and protecting individual rights and safety are being reinvented constantly, but they can be successful only if young people and their parents, carers, teachers and youth workers are digitally literate and have developed critical thinking.

There is a need to tackle and minimise barriers and challenges in access, competences and outcomes for different groups of people.

Council of Europe member states should devote resources to the development of personalised skills training, especially of disadvantaged and vulnerable people.

There is a need to facilitate collaborative inter-sectoral approaches in assisting people to overcome everyday hurdles and develop problem-solving skills and resilience.

- Workers, especially young workers, should be trained to support ICT-related queries. It should be made explicit to the general public that these sources of support are available.
- Although there are already numerous contributions to analyses, especially of youth digital social inclusion, there are some aspects of this phenomenon that call for decisive action or the questioning of current practices.
- There is a need to resolve the gap between online and offline human rights by applying the same rights online as offline, paying special attention to young people.
- Young people should be included in decision making on social inclusion and enhancing digital social inclusion.

3.3. Inclusive digital society

Along with digital literacy, there is the concept of the "digital divide", which refers to access to digital resources and the Internet. More specifically, the digital divide can relate to factors such as opportunities for accessing ICTs, use of the Internet for day-to-day activities, and even the assimilation of information and knowledge. All this means that inclusive strategic education plans should be introduced, where inclusion is understood as a continuous process that takes into account all individuals in society and their wide range of needs and that aims to enable them to participate in every sphere of society.

One component of digital exclusion has its origin in technical aspects that hinder the use of digital services. Especially significant is the non-compliance with regulations on matters pertaining to user rights and company responsibility, especially when it comes to accessibility. It is possible to identify the following lines of action, which are common to various contexts:

1. The availability of free, public digital equipment, such as library networks, telecentres and free Wi-Fi access zones, is an option that promotes universal access.

2. The “Design for All” strategy plays a key role in creating inclusive societies and should therefore be incorporated into all levels of the design process for goods and services.

3. ICTs in education should adapt to the needs of all students, especially those with special educational needs.

3.4. Impact on the labour market

3.4.1 General considerations[39]

Digitalisation has an important impact on the labour market. On the one hand, it creates new jobs but, on the other, it creates new inequalities and new “low-paid” jobs. The phenomenon is emblematic of such a complete break with practice to date that the current talk is of an “uberisation” of the economy: businesses now fear being “Uber-ed”. From taxi drivers to television networks, from filmmakers to restaurants and banks, the ways in which individuals and companies do business is metamorphosing so quickly that many companies find it hard to keep pace. As well as Uber, we have Airbnb, Wonolo, Lending club, Taskrabbit, Upwork, Deliveroo, etc. These are companies of a new kind whose emergence has been made possible by three recent developments:

- the Internet and the development of high-speed networks;

- Big Data, that is the merging by Internet platforms of colossal masses of directly exploitable commercial, personal and geographical data;

- the explosion of new forms of mobile device – mobile telephones, tablets, etc. that give consumers, workers, and service providers access to mobile Internet at all times and in all places.

The three forms of development, mentioned above, have, in the space of a few years, had the effect of eliminating distances and frontiers thanks to networks; of creating new raw materials – data – that are directly exploitable by platforms, companies or start-ups; of erasing the frontiers between workplace, leisure venues, or home. The conditions for the performance of a professional or otherwise lucrative activity have been disrupted and transformed. The changes in question affect services and industry, manual and intellectual labour, salaried workers and the self-employed.

Alongside the services that have already become “classic”, there is the development of new services put in place by new actors on the market – the platforms. The example of the American company, Uber, in Europe is emblematic, but other examples of online services raise other types of questions depending on whether one is discussing accommodation services among private individuals (Airbnb), hotel reservations (Booking.com, etc.), innovative financing (LendingClub, etc.), virtual assistants, consultants or marketing experts (Upwork, etc.),

[39] For general considerations, see also: Work for a brighter future. Global Commission on the future of work, 2019, available: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_662410.pdf

removal assistance, cleaning or babysitting (Taskrabbit, etc.) or electronic sales (eBay, Amazon).

3.4.2 Working conditions and digitalisation

In terms of working conditions, platforms are currently developing a parallel labour market that is ultra-flexible, in some cases with employment being governed by no form of contract whatsoever.[40] In this form of employment, there are no longer employment contracts, wage standards, working time regulations, or standards relating to working hours, workplace, training, access to unions or collective action. The worker or rather, the "partner" who belongs to this virtual community, is left to manage, on the basis of a self-employment contract, his/her own social protection (unemployment benefit, retirement pension, occupational sickness provision), work health and safety protection.

Alternatively, the worker may decide not to declare this work, opting for informal labour status – "in the black" – as a "partner" who, should s/he for any reason prove no longer acceptable, may see her/his account suddenly deactivated by the platform managers, without any prior notification or other formality (in the absence of any kind of legal or regulatory support designed to defend the "worker").

New forms of employment can also bring new risks of losing the social protection that is needed. Access to unemployment insurance protection can be limited due to an insufficient amount of contributions or where the person is missing continuous activity. The same can also arise in the case of pension insurance where the amount of pension depends on the amount and period for which contributions are paid. Losing protection in the case of a work accident or an occupational disease is one of the aspects of social protection that will be influenced by the legal status of the worker. In the case of a so-called partner, there is no employer responsible for a safe working environment, and also workers may not be aware of the risks to their well-being.

Another feature of the spread of new technologies is **their intrusion in both the working environment and in private life.** This is a development likely to gradually erase the frontier between working life and private life (reading emails at the weekend, replying, surfing on Internet in the evening, etc.) and to alter the balance between working life and family life, for example. Thus, the intensification of work and the excessive connection to work-linked devices are likely to damage the balance in employees' lives, and even to harm their health. What, in the workplace, is the likely impact of this blurring phenomenon on working time? That an impact exists, however, does seem certain. In increasing numbers of cases, workload is not always best measured in terms of working hours. It is therefore desirable to develop alternative approaches.

Employers contend that the intrusion of new technologies in working life has also contributed to the intrusion of private life in working life, e.g. the consultation of private emails or of Facebook, etc. during working hours.

[40] In most cases, it can still be observed that contracts exist either between the platform worker and the platform or, in cases where the platform acts only as an intermediary, between the platform worker and the third party. In cases where people working on platforms are self-employed, a contractual relationship may exist.

3.4.3 Remuneration

One important question that can be asked is whether technology is a factor of wage stagnation. While this is a burning question for the world of labour, opinions on the matter diverge. The new technologies will remove the low-skilled jobs from the middle classes so that one may well see an increased polarisation of the labour market with an increase, on the one hand of very low-skilled and ill-paid jobs and, on the other, very highly paid, top-level jobs.

3.4.4 Flexibility – danger?

It is generally claimed that mobile work based on new technologies offers a certain level of flexibility, autonomy and greater responsibility for workers. The division among parents wanting more flexibility in work so as to be able to bring up their children, and older workers valuing security above all, is not, however, always relevant. It can be seen that recent developments in employment practices have increased the prevalence of non-standard work schedules – non-daytime shifts in which most hours do not fall between 8 a.m. and 4 p.m., when shifts rotate, or when schedules vary weekly or otherwise. For example, computer software now enables retail, restaurant, service and other firms to predict hourly customer demand and delivery schedules with precision, encouraging employers to create “just-in-time” schedules in which workers are called in or sent home at short notice. By preventing many parents from adequately caring for their children, such practices adversely affect child and adolescent development. The combination of working and family life can thus be seriously disrupted by these new flexible forms of employment.

In addition, one of the risks of this flexibility and this autonomy is the danger of work intensification, of an increase in stress levels and working hours. These new forms of employment indeed risk requiring the worker to be available at all times and in all places because the new technologies blur or obliterate the traditional boundaries of professional time and space (office and working time schedules). Such “work without frontiers” is likely to generate stress and burnout. According to a Eurofound study, “ICT-based mobile work offers some flexibility, autonomy and empowerment, but also incurs the danger of work intensification, increased stress levels and working time, and blurring of the boundaries between work and private life. It may also outsource traditional employer responsibilities, such as health and safety protection, to workers”.[41] More generally, it is possible to observe that a series of tasks that were previously performed by professional workers have today become tasks that every “citizen-worker” has to perform for him- or herself: carrying out bank transactions, booking train tickets, comparing energy suppliers, choosing a telecommunications operator, selecting the best “package” corresponding to the (self) analysis of his/her behaviour as a consumer.

At the same time, most of the digital applications developed do not aim to help or to solve the problems of low-income workers, their households and their limited resources. For instance, there are long lists of apps for contacting or finding spas, high-end restaurants, and a long list of other such expensive luxuries. But there are few, if any, apps that give you information about a health food shop in a modest-to-poor income area in a city. In short, what is absent are applications that address the needs of low-income individuals and households.

[41] Telework and ICT-based mobile work: Flexible working in the digital age, Eurofound 2020, available: https://www.eurofound.europa.eu/publications/report/2020/telework-and-ict-based-mobile-work-flexible-working-in-the-digital-age

In industry, the stakes involve the new race between the machine and the worker: work pace, control of every action by the machine, managerial surveillance in real time, but also the disappropriation of the worker's capacity to organise her/his work and the risk of becoming the tool of the robot and its algorithms. The risk, or the dark side of the digital revolution is a labour market of "digital galley slaves" on the one hand, and of "decision-making machines" on the other, all remotely controlled and placed in competition at world level. The digital revolution therefore seems to reveal tremendous inequalities between the masses of increasingly isolated low-income workers and the top of-the-market workers who are in a position to take advantage of an ever-richer palette of digital instruments that enable them to indulge, on demand, whatever luxury whims or extravagances they may choose. The digital revolution looks set to deliver greater freedom to indulge every whim to some and an existence more akin to slavery to others, more collaboration to some, more competition to others, and more sharing to some, and a more precarious livelihood to others.

Conclusions and recommendations

Digitalisation has generated new branches of the economy. The development of the collaborative economy and the development of different e-services for citizens have also impacted the labour market and accessibility to different social rights.

Although the general development of digitalisation can be viewed as positive (education, accessibility of health services, general communication between government and citizens), difficulties and risks using digital means are also observed.

Internet access is not guaranteed to all people. Even in situations where Internet access exists, this service cannot be afforded by everyone. Digital skills are still modest among elderly people. Therefore, not all the possible digital services are appropriate for everyone. As governments are using more and more e-services, it is becoming apparent that, to some degree, certain social rights are neither well-protected nor accessible.

Special consideration has to be given to young people. Their attitude to Internet services and to using communication platforms is different and their levels of digital skills are also different. At the same time, the use of digital environments raises new issues such as cyberbullying and data collection without consent.

The labour market has witnessed new forms of employment and a greater degree of flexibility. This has also led to the erosion of social rights and decreasing levels of employee protection. Although greater flexibility is demanded and, to a certain extent for certain categories of people, they offer better access to the employment market, these new forms of activity have also led to an erosion in the application of labour standards and the demise of the necessary social protection.

Recommendations

- There is a need to develop methodologies and tools to permit a minimum of ongoing monitoring and assessment of the social impacts of digitalisation in Council of Europe member states. Monitoring indicators need to concern all the factors raised in the report, which are related, but not limited, to data privacy, digital literacy, accessibility, information asymmetry, and information security. The indicators may also be built around the main aspects of social cohesion: social inclusion, social capital, and social mobility. Special attention must be paid to non-EU states since the main inequalities in digital knowledge and digital risks are found between the lower-middle income and upper-middle income countries. Today, digitalisation trends are profoundly changing the state of society and the social environment, improving the quality of life, on the one hand, and fragmenting the degree of social integration and inclusion in digital life among various social groups, on the other. In this context, the concept of social cohesion as the capacity of a society to ensure the well-being of all its members while minimising disparities and avoiding marginalisation, building shared values and communities of interpretation is a must.
- Based on the results of the monitoring and assessment, the EU's 2007 European Initiative for an All-Inclusive Digital Society could also be reproduced taking into account all the new aspects, threats and possible solutions raised in the report. The new agenda for an inclusive digital society needs to be drawn up in the context of new

digitalisation developments and the impact of COVID-19, as well as in close synergy with the European Social Charter and European Convention on Human Rights.

- Digitalisation developments are slower and social rights are more vulnerable in those states of Council of Europe which are not EU member states. For the digitalisation process to evolve smoothly and in a human-centric way, the countries in question will need to accord particular importance to human capital and digital skills aspects. The digital divide between urban and rural areas is wider and digital skills are lower in rural areas. Lifelong learning programmes on digital skills for vulnerable groups are of great importance, with special learning programmes in cases of rapid digitalisation, such as in the case of the COVID-19 digital transformation. National active labour market programmes should be directed more towards digital literacy training, especially for older people.

- Better monitoring and evaluation solutions could be used to measure the labour market changes arising from the digital transformation. Initiatives to improve labour rights and working conditions in digital work platforms are of crucial importance in developing countries. Improvements should be implemented to ensure the legal access of platform workers to the social protection framework. The agenda on eliminating uncertainty and risks, building better labour rights in the context of digital work platforms should be developed for Council of Europe member states.

- States can move social entrepreneurship forward by means of the digitalisation agenda. To achieve wider digital sustainability, government-supported social entrepreneurship programmes should be designed and implemented with a focus on digitalisation and IT sector related topics. This will lead to a dual – green and digital – transition and a socially friendly digitalisation, also increasing the role of the NGO sector.

- In the context of development and innovation in digitalisation, social rights are often sensitive and vulnerable, especially in developing countries. This issue arises due to the fast, continuous, positive and efficiency raising penetration of digital innovation in society's life and business, where the classic social model can no longer work effectively and where more controllable, practical solutions are important. Based on the analysis in this report, some Council of Europe member states have comparatively low and polarised levels of digitalisation. Given the fact that digitalisation has a highly cross-border nature, polarised states may affect the overall integrity of digital solutions. Greater attention should be paid to the rationale of national programmes and solutions relating to digitalisation.

- The activation of distance working from 2020 raised a number of problems mainly relating to labour rights. In order not to "disturb" the labour market, there is an obvious need to reconsider the scope of employees' rights in the case of distance working with respect to compensation, work control rights, rights of vaccinated employees, and other practical issues, which have already been applied in many but not in all Council of Europe member states. Employees' rights are of critical importance in the social cohesion context. The Council of Europe and ILO should raise this question with those

countries where labour legislation has not been comprehensively updated to take on board the consequences of the digital developments during the COVID-19 pandemic.

- Rapid and wide-ranging moves to e-learning platforms as a result of COVID-19, were a challenge for both learners and teaching personnel, especially in lower-middle income and higher-middle income countries, where e-learning systems were not in use before COVID-19. E-learning rights and practical digital solutions based on those rights, should be reviewed in many countries. For example, systems for distance proctoring during online exams are not legally and practically clear and transparent, with students often finding themselves in challenging situations. Solutions for the regulation of e-learning should also be included in the above recommended agenda on the Inclusive Digital Society. Better national support for e-learning resources development is also important: firm statements need to be published on the protection of social rights, in the interests of overall social cohesion and sustainability.

- Awareness-raising programmes on online risks, cybersecurity measures, and personal data protection should be activated in many countries, especially for vulnerable social groups. Cybersecurity may be seen from three aspects: confidentiality, integrity and availability. Confidentiality is a key issue for people who have their personal data in various clouds and digital storage. The second aspect is that integrity of data must be assured so that it cannot be modified or destroyed. Thirdly, data availability depends on ensuring timely and reliable access to information. All these aspects are of concern to society. Specific guidelines and training on cybersecurity need to be more inclusive, targeting migrants and other vulnerable populations.

- Finding solutions to guarantee fair and responsible digital products and services is a priority. In many developing countries, digital products should be subject to stricter usability rules, have transparent service charges, provide open data, where appropriate, and use better copyright control solutions.

- It is highly important to ensure that persons with disabilities have a comprehensive access to information, digital services, and products. The large-scale digitalisation process has led to the inevitable use of technology by persons with disabilities in their daily lives. In this regard, there is still an increasing need for innovative, sustainable, integrated and personalised solutions for persons with disabilities. It is critically important to use multiple modes of communication like accessible websites, phone, radio, videos, leaflets, sub-titling, chats, etc. in addition to providing information in plain language that is easy to read and in accessible formats. The access of persons with disabilities to vital information, essential services and products like medicine, hygiene products and food by appropriate means and inclusive ICT solutions will be key to their social inclusion during the pandemic and in the recovery period, during other crises in the future, and during the war in Ukraine.

- It is necessary to take children’s right to be forgotten into account with a view to their future lives and to introduce measures to restrict their access to content that is not suitable for their age and development, to establish mechanisms that guide Internet service providers to cooperate in relation to these measures, and to take into account the social and cultural sensitivities of countries in implementing these mechanisms. It is important to adapt countries’ domestic laws to the digital world and to make them

effective in taking all protective and preventive measures for children against the possible risks and threats of digitalisation by developing artificial intelligence technologies in children's best interests, and devising and supporting national, international and supranational policies in relation to these measures.

- The social protection of various groups of people needs to take into account the different levels of digitalisation in different countries. Although digitalisation has made communication with the state easier, not all people have the necessary digital skills or have guaranteed stable Internet access.

A non-exhaustive series of key conditions for an inclusive digital society are presented in the following list:

- Foster a fair and responsible digital economy
- Improve digitalisation solutions **–** improve the labour market
- Guarantee secure cyberspace and social responsibility
- Improve data protection
- Monitor equal opportunities, access to the labour market, and working conditions
- Build an inclusive digital society
- Mainstream digital technologies and services in an inclusive development policy
- Empower consumers for better digital governance
- Educate and train for the digital era
- Corporate social responsibility
- Access to information
- Potential opportunities for enhancing social cohesion through technology
- Tackle digitalisation, but uphold social rights and improve social cohesion.

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