



SOCIAL CHALLENGES UNDER THE CONDITIONS OF DIGITAL TRANSFORMATION

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ABSTRACT

The development of digital technologies and their penetration into all spheres of economic and social life necessitates a rethinking of the approach to exploiting their exceptional potential for increasing the competitiveness of the Bulgarian economy, strengthening the supply and demand and efficiency of public services, and successfully dealing with major social challenges.

In the report we will focus on some of the most important challenges for the digital transformation for society - modern infrastructure, adequate education and training, adaptation of the labor market, improving the quality of public services, territorial development, etc. We will study the regulatory framework and trends for the development of these important processes in the EU and Bulgaria with a horizon of 2030 and will make the relevant conclusions and recommendations.

Key words: social challenges, digital transformation, territorial development, public services, public administration.

INTRODUCTION

The processes of digital transformation are part of the so called Fourth industrial revolution, in which technological development is very dynamic and leads to changes in all spheres of public life. Digital transformation and its reflection on all social processes are issues of strategic importance for the realization of economic potential, improvement of labour conditions and the quality of life (1). Digital technologies are instrumental for achieving a more competitive economy and a fairer society, where social justice underlies the European social market economy.

Digital economy requires new legal and social rules, adaptation and provision of social protection of labour in an environment where numerous work placements will change and even disappear on a global scale. Education and

training will be of key importance for the skills of the future. Fair working conditions will require a strong social dialogue: workers and employers need to find common decisions to best meet their needs. The accelerated digital transformation is a prerequisite for the forerunning development of economic production, for growth and increase of income.

The development of this process demands adequate and pertinent measures for improved knowledge and skills of citizens, for the acquisition of new skills and qualification and for the creation of a life-long learning culture that may reflect the increasingly dynamic nature of the labour market (14). The COVID-19 crisis also confirms the need of accelerating digital transformation applied to all economic and social sectors, and proves that large scale conditions for realizing the potential of digital technologies are necessary and even obligatory.

Europe aims to continue being a centre of the most advanced social systems, innovations and competitive entrepreneurship. The EU social

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strategy guarantees that the transitions related to neutrality with respect to climate, digitalization and demographic changes are fair (4). The European pillar of social rights (15) guarantees the fairness of digital transition. The development of these technologies and their introduction to all spheres of economic and social life necessitates a reconsideration of the approach towards utilizing their extraordinary potential for boosting the competitiveness of Bulgarian economy, stimulating the supply and demand, and the efficiency of public services, as well as a successful management of the main social challenges by 2030.

DISCUSSION

Digital transformation, together with the European Green Pact is a major priority at a European level. The EU commission annually reports on the digital progress in its EU member states via indicators comprising the Digital economy and social index (DESI). It situates Bulgaria in the last position compared to the other EU member states. Furthermore, Bulgaria seriously lags behind the mid-EU levels of digital connectivity, use of online digital skills, digitalization of industries and digital public services (5).

The public sector and more specifically, state institutions play an increasingly important role for the establishment of the necessary legal and regulatory environment for encouraging innovations through facilitating the access of businesses to financing and attracting investment, including EU funds. The private sector may use the new conditions for creating an effective supply chain, opening new markets and setting up innovative business models that reflect the goals of the digital transition.

According to the strategic goals for accelerated economic development, demographic uptake and reduction of inequality, underlying the *National Development Programme BULGARIA 2030 (3)*, by 2030 the country will have created a functional and safe environment for unlocking the full potential of IT technologies for the digital transformation of all key sectors reaching mid-EU values of the Digital economic and social index (DESI).

The Council of Ministers has adopted a national strategic document - *Digital transformation of Bulgaria during 2020-2030 (3)* by Decision № 493 from 21 July 2020, which determines six fundamental goals for a successful digitalization and a full exploitation of the opportunities of this transformation:

- Deploying a safe digital infrastructure
- Provision of access to adequate technological knowledge and digital skills
- Enhancing the capacity for scientific research and innovations
- Unlocking data potential
- Digitalization for the benefit of circular and low carbon economy
- Increasing the efficiency of state administration and the quality of public services

These goals require new social and management attitudes related to the acquisition of new skills by employees and those using digital technologies, to a new working environment, a contemporary and adequate infrastructure which demands substantial human and financial resources, adequate administration capacity, etc. The document contains a detailed description of the impact areas:

- Digital infrastructure
- Cybersecurity
- Scientific research and innovations (ICT)
- Education and training
- Adaptation to the labour market – education, learning and social protection
- Digital economy
- Agriculture
- Transport
- Energy industry
- Environment and climate
- Healthcare
- Finances
- Territorial development
- Digital management

The present report emphasizes the main social challenges provoked by the realization of the goals:

The deployment of a safe digital infrastructure is an important condition which provides access to all major driving forces of the social and economic development, such as schools, hospitals, transport centres, main suppliers of public services, etc. The infrastructure which

integrates physical and digital aspects is decisive for the provision of the next wave of innovations and economic growth. In the next decade the 5G and optic networks will be among the most important building elements of digital economy and society. Nevertheless, digital infrastructure should be sustainable and operationally compatible in order to support the enormous volume of applications and services. A gigabyte connectivity for all main social and economic driving forces is foreseen.

The provision of access to adequate technological knowledge and digital skills will facilitate the tackling of one of the most important challenges – the lack of competences in the area of information and communication technologies (ICT) and the need to improve the technological knowledge and digital skills of the workforce. The main digital skills, as well as skills which cannot be replaced by machines – critical thinking, creativity, and management are in the focus of the programme. The curricula at all educational levels and the professional training and retraining should include new technology courses. A guaranteed access to social protection will be needed for people whose workplaces will probably undergo the most profound transformation or will disappear as a result of the economic consequences of the pandemic, automatisisation, robotics and artificial intelligence.

Recent data shows that big differences with respect to digital education can be observed in the state members. The *Programme for International Student Assessment – PISA* of the Organization for Economic Cooperation and Development (OECD) in 2018 states that many households with low income have no access to computers. Eurostat data from 2019 show that the share of households with broadband access to Internet differs significantly within the EU, by varying from 74% in the quartile of lowest income households to 97% in the quartile of highest income households. The OECD international survey in the area of teaching and learning in 2018 shows that only 39% of teachers in EU feel well or very well prepared to use digital technologies in their daily work, whereas there are major differences among member states (12). Of particular importance is the creation and actualization of a proper legal framework

including digital learning content and ICT competence framework of instructors at all levels of education and training in accordance with the Digital Competence Educators Framework (DiGCompEdu) published by the EU that determines and describes the skills of teachers in the area of digital technologies needed for teaching and introduction of innovations through the use of digital technologies. These influences agree with the priority ‘Education and Skills’ within the *National Development Programme BULGARIA 2030*, and will contribute to the realization of certain aspects from Goal 4: ‘Provision of inclusive and fair quality education and stimulating life-long learning opportunities for all’ from the UN Sustainable Development Goals (13).

The provision of reliable, forerunning information for future trends in labour supply and demand is of paramount importance. It will initiate consecutive measures for the acquisition of new or the improvement of existing key competences and professional qualification for specific new work places, including the use of contemporary teaching forms and more mobility opportunities. For these purposes, investments will be encouraged to upgrade the qualification and retraining especially in the area of digital skills. It will be challenging to mitigate the differences in competences between the separate age groups with respect to ICT skills. It is essential to reach a balance between supply and demand, whereas the workforce will be equipped with the right skills for mastering the opportunities offered by new technologies.

All these new challenges must be overcome in the period of 2020-2030 which agrees with the priorities ‘Education and Skills’ and ‘Social Inclusion’ within the *National Development Programme BULGARIA 2030*. The envisioned actions will also contribute to the implementation of certain aspects from Goal 4: ‘Provision of inclusive and fair quality education and stimulating life-long learning opportunities for all’, and Goal 8: ‘Stimulating an inclusive and sustainable economic growth, full and productive employment and fair labour conditions for all’ from the UN Sustainable Development Goals.

In order to enhance the capacity for scientific research and innovations, an emphasis is placed

on supporting research organizations oriented towards fundamental and applied scientific research, start-ups and SMEs, participating in the creation and implementation of innovative decisions and technologies, as well as supporting and encouraging the use of existing technologies and innovations by these organizations. This is the third of the main goals of digital transformation policy.

To unlock data potential, the fourth goal of the document *Digital Transformation of Bulgaria during 2020-2030* envisions the expansion of the volume of open data, generated and processed by state institutions and business, and the facilitation of data shared by private subjects, which is of major importance for the policy of knowledge accumulation and enhancement of sustainability policies, as well as for encouraging economic competition. The related data will be a major source for fueling digital economy, including the use of intelligent technological tools with possibilities for analysis and decision-making. The data economy based on human resources must count on the quality of data and to respect the rights and privacy of users.

Digital transformation of the public sector favors the development of trans-border e-services needed by citizens and enterprises for their travels, work, learning or economic activity within the EU. With respect to Regulation (EC) 2018/1724 of the European Parliament and the Council from 2.10.2018 (11) for setting up a single digital platform for accessing information, procedures and services for help and tackling issues, and for amending Regulation (EC) 1024/2021, by 2023 the EU member states need to provide 21 key administrative procedures entirely online both for the users in their own states, and for trans-border users by applying the 'once only' principle. This means that Bulgarian institutions should introduce e-services to be used by citizens of other member states by default. The opening of public sector data for secondary use in machine readable format is another key factor enabling economic and social development. Open data have an enormous potential for creating innovative services and products with added value for citizens and businesses.

In 2019 the European Commission (EC) published an annual Digital economy and society index (DESI)(17), (**Figure 1**). Bulgaria is at 28th place out of 28 member states and even though social media such as Facebook is intensively used

in Bulgaria for personal reasons, the literacy of people regarding new technologies remains below the average for the European Union. Also, businesses cannot take advantage of digital opportunities to extend the range of their activity, which is one of the main conclusions related to our country.

The DESI index includes five indicators: *Connectivity, Human Capital, Use of Internet Services, Integration of Digital Technology, and Introduction of Digital Public Services*. A state which makes an optimal use of digital technologies for the development of businesses and the public sphere may receive up to 100 points.

The total result of Bulgaria is 36.2 points versus 35.5 points in 2018. At an EU level the average result is 52.5 points, compared to 49.8 points in 2018.

Our country has the highest score for the indicator 'Connectivity' – 51.6 points (at 59.3 points at EU level), thanks to the access to broadband internet (96% of all Bulgarian households), including mobile – 97 out of 100 surf on their smartphones or tablets. However, the preparation of Bulgaria for entering the 5G in practice is not advanced, because the indicator for the distributed radio frequency spectrum for this new service in Bulgaria is 0%, compared to the EU average of about 17%. Also, the access to super high speed broadband internet is below the EU average: 10% of all households have access to a similar type of speed of the world wide net against 20% at an all-EU level.

Bulgaria is considerably lower than the average result for the indicator 'Human Capital', as the overall level of the digital technology skills is among the lowest in the EU. The share of people with at least basic digital skills amounts to about 29% of the Bulgarian population, while the EU average is 57%. Only 11% of the people possess skills above the average which constitutes less than one third of the EU average. Furthermore, Bulgaria is way beyond the average level for 'Integration of Digital Technologies'. The result of Bulgaria for the indicator 'Human Capital' is 28.5 points against an EU average of 48 points. IT specialists in Bulgaria are 2.3% of all employees, while at an EU level they are 3.7%. Female specialists in this area are 1.3% of the working women in Bulgaria, which is near the average EU percentage of 1.4%.

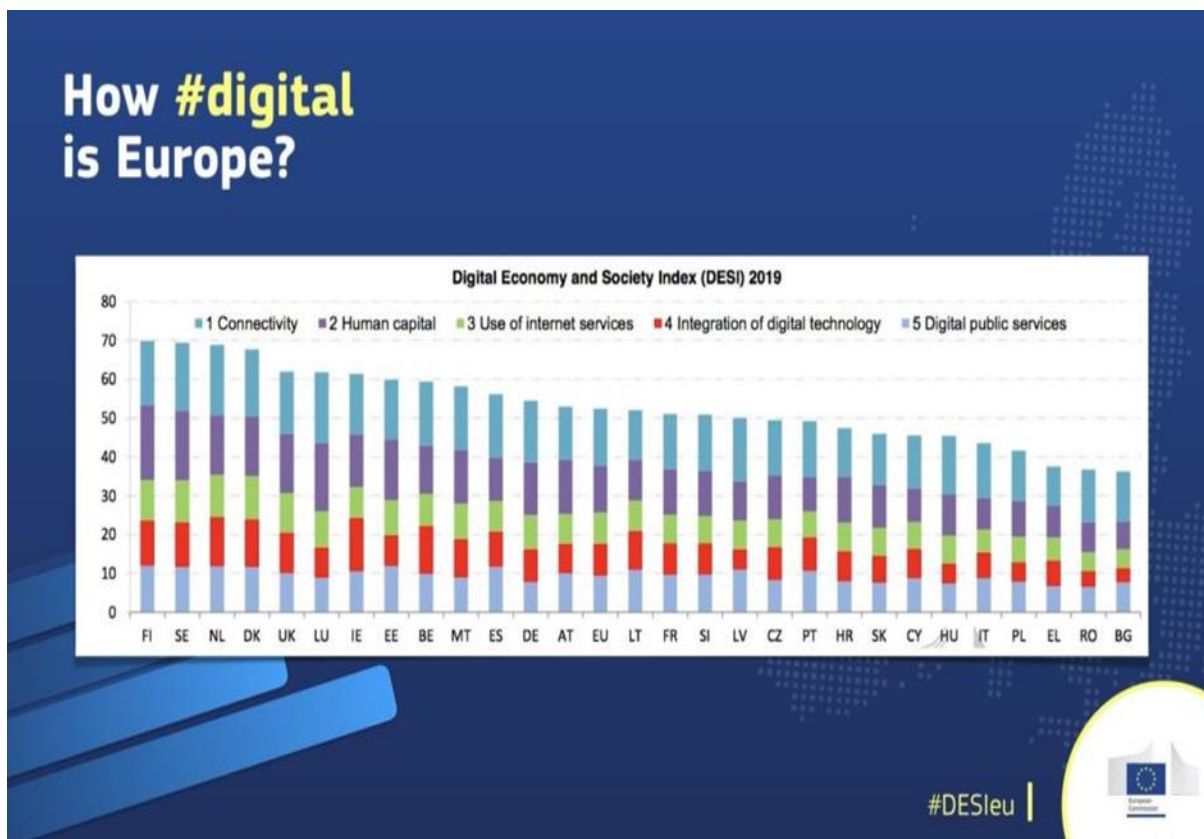


Figure 1. Digital Economy and Society Index (DESI) 2019
 Source: Data for all 28 member states. Graph: European Commission by CC license

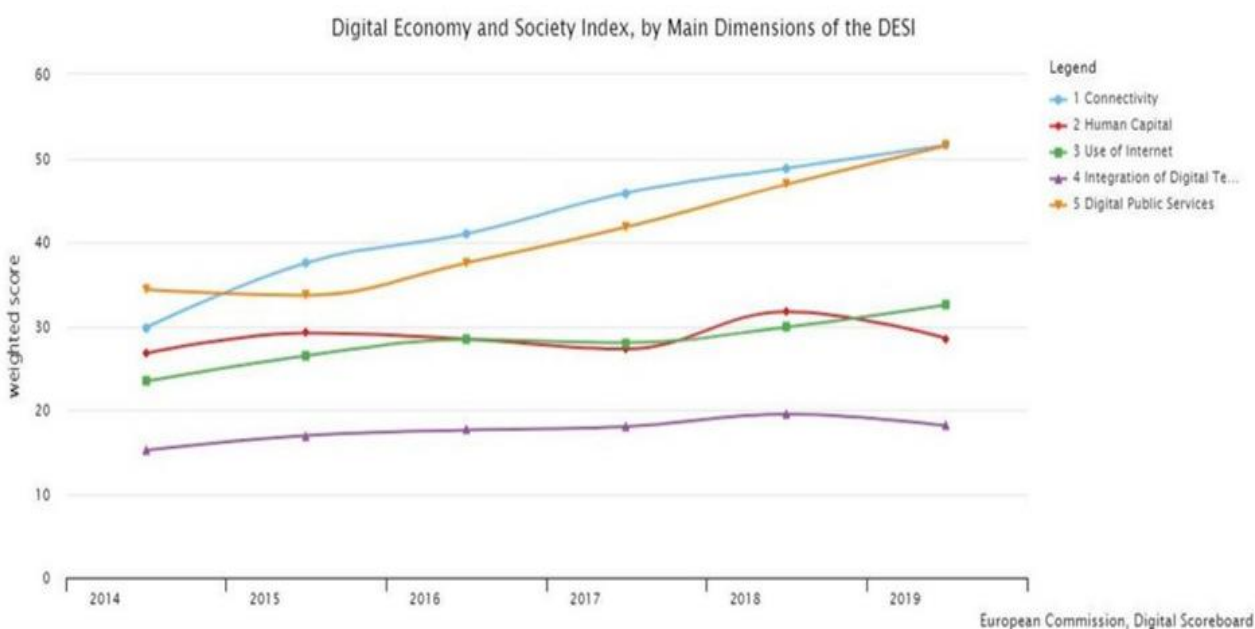


Figure 2. Digital Economy and Society Index, by Main Dimensions of the DESI
 Source: Bulgaria: changes in the five indicators throughout the years. Graph: European Commission under CC license

Bulgaria has a very good standing for the indicator 'Access to Public Services', in providing digital services for the enterprises – 96 points out of 100 and 85 points on EU average. The majority of citizens express their wish to use e-government services – 61%, the range of the offered services is good, yet there are some issues in the implementation. The values of our country are low with respect to the access to electronic healthcare, electronic prescriptions and exchange of medical data among the health centres via digital technologies.

For the indicator 'Digital Public Services' Bulgaria has received 51.5 points at 62.9 points at an EU level (**Figure 2**).

The main conclusion about the third indicator, 'Use of Internet Services' is that Bulgarians surf the Internet mostly because of Facebook and Instagram, watch videos or play games, but do not use it for business.

In Bulgaria 79% of the Internet users have profiles in social networks versus 65% at an EU level. However, only 11% of the Internet users here choose online banking versus 64% at an all-EU level. Only 13% sell their goods and belongings online (23% EU average) and 31% shop online, compared to 69% on average for all member states.

Regarding the economic activity, the focus of the DESI index is on small and medium size enterprises (SMEs), because they represent 99% of the companies in the EU and are the backbone of the economies of the separate member states. According to the Bulgarian legislation a firm may enter the category of SMEs, if it employs fewer than 250 persons and has an annual turnover below 97 500 000 BGN and/or an asset value which does not exceed 84 000 000 BGN.

While 8% of the SMEs in the EU sell goods and services in other countries through digital technologies, in Bulgaria only 3% take advantage of this opportunity which is at the same level as in 2018. According to this index 6% of SMEs sell their production online, which is 1% less than the study from 2018. At an EU level 17% of the companies make use of digital technologies to expand their business. Considering these data, it

is not surprising that only 2% of the turnover of SMEs in Bulgaria is online trade.

Only 7% of the SMEs in Bulgaria use cloud technologies such as Google Drive, or Dropbox at 18% EU level, show data for the DESI index. Although 79% of internet users have profiles in the social networks, this territory is still unexploited effectively by firms – only 9% of SMEs use this channel for spreading their goods and services against 21% at EU level (17).

According to DESI 2020 Bulgaria needs higher digital skills, improved qualification and retraining of the adult population, while the participation in learning by the elderly is low.

For the indicator 'Use of Internet Services' 24% of the population in Bulgaria has never used the Internet, and only 64% are active users (in comparison, the average EU values are 85%). With respect to the improvement of digital skills it is important to note that the percentage of the population using the internet who have taken part in online courses is considerably low – 3%. On the other hand, Bulgaria has shown higher than EU average values for video conferences (85%) and the use of social networks (78%).

Digital skills go hand in hand with the 'Integration of Digital Technologies', where Bulgaria is also last. It is apparent that only 7% of the SMEs sell online (18% for EU), yet only 3% of them have realized trans-border sales.

In the area of 'Public Digital Services' Bulgaria has achieved good results in the provision of digital services at 91%, whereas 61% of internet users submit online forms.

When doing its calculations, DESI takes into account the strategic documents prepared by the government in the digital sphere: *Concept for digital transformation of the Bulgarian industry (industry 4.0)* of the Council of Ministers from 2017; *Digital Bulgaria Programme 2025* from 2018, the draft of the national strategic document *Digital transformation of Bulgaria during 2020-2030*, published in 2020 on Strategy.bg; the updated *Strategy for development of e-government in the Republic of Bulgaria 2019-2023* (16).

Considering that 2020 was more unusual compared to previous years due to the Covid-19 pandemic, digitalization, digital skills and the use of online services by citizens has become crucially important for the adroit management of the crisis. In the recent months the administrative structures have taken a number of actions –

national telephone number for e-services information of the State Agency for Electronic Government (SAEG), the opportunity provided by the National Insurance Institute (NII) for requesting and issuing of Personal Identification Code (PIC) electronically, etc. (Figure 3)

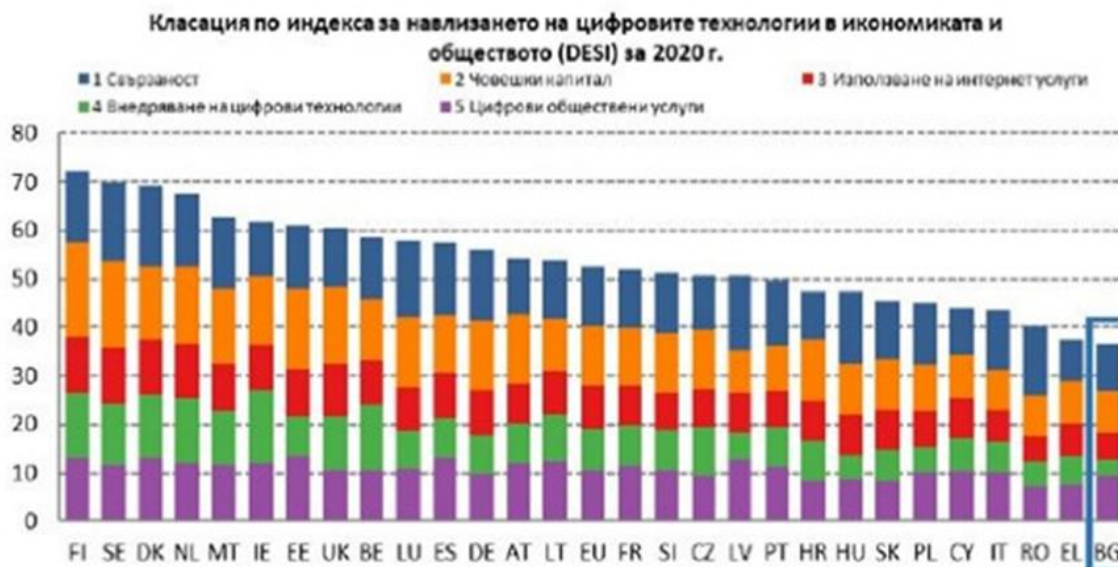


Figure 3. Classification by Digital Economy and Society Index (DESI) for 2020

Connectivity, Human Capital, Use of Internet Services, Integration of Digital Technologies, Digital Public Services

Nevertheless, in 2020 Bulgaria once more ranked at 28th position in the DESI classification. For some of the indicators, such as ‘Connectivity’, there is an increase in the results, In the broad

access to super high speed and mobile broadband networks in 2020, 75% of the living areas were connected by high speed internet (100 Mbps), yet only 58% of the households have subscribed.

Table 1. Indicator ‘Human Capital’, Bulgaria - EU

	Bulgaria			EU
	DESI 2018 value	DESI 2019 value	DESI 2020 value	DESI 2020 value
2a1 At least basic skills in the area of digital technologies % persons	29% 2017	29% 2017	29% 2019	58% 2019
2a2 Digital skills above basic % persons	11% 2017	11% 2017	11% 2019	33% 2019
2a3 At least basic software skills % persons	31% 2017	31% 2017	31% 2019	61% 2019
2b1 ICT specialist % of employees	2.7% 2016	2.3% 2017	3.0% 2018	3.9% 2018
2b2 Women – ICT specialists % of employment in women	1.7% 2016	1.3% 2017	1.8% 2018	1.4% 2018
2b3 Graduates of ICT majors % graduates	3.1% 2015	2.9% 2016	3.7% 2017	3.6% 2017

As for the indicator ‘Human Capital’, Bulgaria has moved up by 2 positions (**Table 1**), yet citizens’ skills in digital technology remain among the lowest in the EU. 29% of the adult population (to compare – the EU average for this share is 58%) have basic digital skills, and 11% work at a little less than the average level (7).

Goal 5: ‘Digitalization benefiting the circular and low carbon economy’ from the National Strategic Document *Digital Transformation of Bulgaria during 2020-2023* aims to increase the export orientation and competitiveness of the economy and the transition to circular and low carbon economy. Enterprises must modernize their technological facilities, adapt their business models to the future changes, integrate the principles of sustainable development and apply innovations, based on digital technologies. Special attention must be paid to the support for start-ups and SMEs which constitute a significant share of the Bulgarian economy.

The broader implementation of intelligent and sustainable transport solutions will contribute to the optimization of the transport processes and an increase in the attractiveness and safety of the transport system, and at the same time lead to the reduction of expenses for development and maintenance of the transport network and the negative impact of transport on the environment. Digitalization will allow the agricultural sector to realize its high potential by increasing productivity, adding value, improving the quality of life, its safety and people’s income, reducing pollution to stable levels, and reacting to the market trends in a flexible and fast way. The main goal of digitalization of the Bulgarian agriculture and the related business is to transform it into a highly technological, sustainable, highly productive and attractive sphere of the Bulgarian economy, which not only improves the life conditions of farmers, but also of the agricultural regions as a whole.

It is strategically important to digitalize the energy industry sector. A key action for this purpose would be to decarbonize the energy sector with respect to the European energy policies, including the delivery of new solutions for storing energy and smart energy networks, development of smart measuring systems or

devices and systems for energy consumption management in nearly real time; the active inclusion of consumers when assisting energy balance through measures for energy consumption management; development of measures for energy efficiency based on digital solutions for managing energy consumption at home; digitalization of the energy transfer system and the introduction of systems for data management, cyber security and data protection. The competent use of related data will be a key instrument in the sixth of the main goals in the strategic document *Digital transformation of Bulgaria during 2020-2030*, namely – increasing the efficiency of state government and the quality of public services. Efforts will be directed towards reducing the number of administrative services and their transformation into internally administrative, changing the interaction between citizens and businesses with the state by electronic means into a main and preferred method, discontinuing the use of paper documents, turning to electronic forms, and raising the public maturity and confidence in electronic interaction.

The technological digital revolution has an impact on all spheres of our life. The new media and communication platforms are changing social relationships and the way in which content is being produced, spread and consumed. Content is increasingly generated by algorithms which cannot differentiate hate speech, disinformation, or terrorist propaganda from journalism, parody or other forms of legal content. The techniques for machine learning use big data which usually contain inclinations typical for human society. Algorithms are directly designed by people or, if they are self-learning, may develop their own logic on the basis of unbiased data and/or such controlled by humans. They are neither ‘objective’, nor ‘neutral’ and are a projection of a certain interest. It is a challenge to find a model which may support civil skills for media literacy through the concept of life-long learning (5).

Living areas at a regional level face a serious challenge when using the advantages of IT technologies and innovations will have the opportunity to optimize their governing, become more effective and improve a number of aspects in their development. Smart living areas use such

advantages and unique assets to cover their specific needs for growth, such as digital transition, sustainable city mobility, smart networks, increasing energy efficiency, adapting to climate, etc. All of these elements unite into an integrated approach as part of an intelligent plan for development, and contribute to the reduction of climate change and the transformation of the territory into a sustainable, socially inclusive and green area. In view of optimizing the effect of digital technologies with respect to territorial and administrative planning, conditions can be created for using the potential of the investment process. In this sense, public registers will be built and integrated in the area of sustainable planning, investment design and construction, as well as trans-border electronic services, including the introduction of e-services accessible for citizens of other EU states. In order to optimally use data potential created by administrations, as well as greater value added data, generated by the private sector, a public web-based information system will be built to guarantee the access to investment projects, building plans, their changes, issued building permissions, etc (5). This impact agrees with Priority 9 'Local Development' from the *National Programme BULGARIA 2030* and contributes to addressing some aspects in Goal 11 'Turning cities and towns into inclusive, safe, adaptive and sustainable living areas', etc. from the UN Sustainable Development Goals.

Innovative technologies and digitalization are a major approach to creating the system of issuing personal ID documents with a built-in electronic identifier for identify verification. When applying the requirements of the EU legislation regarding electronic identification, the main goal is to remove the existing barriers that hinder the trans-border use of the separate EU state means for electronic identification in order to prove the authenticity at least for public services. The solution to problems with the e-identification of physical persons is a priority in the realization of the proposed measures related to the increased use of e-services by citizens. The use of an ID document as a means of electronic identification will create prerequisites for rapid development of digital technologies, and the proliferation of a great number of administrative and social services. It will change the way citizens think as

consumers and stimulate their wish to improve their knowledge and skills. Concurrent to the adoption of the Statute for application of the Law on Electronic Identification, the centres for electronic identification will be required to allow the use of a mobile device for identification in order to achieve a higher level of consumer-friendly service. The actions in this direction will contribute to fulfilling the goals in Priority 10 'Institutional framework' from the *National Development Programme BULGARIA 2030* and shall address Goal 16: 'Encouraging peaceful and inclusive societies for sustainable development, providing access to justice for all and building effective, responsible and inclusive institutions at all levels' from the UN Sustainable Development Goals.

The main goal of the government for digital transformation of the services and processes of the state administration by 2030 is to increase the efficiency of the state government, tackle effectively the major social challenges and raise the security level of citizens. The participation of citizens in the democratic process includes a wide number of possibilities and practices which may be separated into two groups: related to direct democracy – referendums, civil initiatives and common assemblies of the people in which decisions are voted; participatory democracy – public consultations and discussions of important questions with the citizens, where the final solution always belongs to institutions. Digital technologies play a significant role for the exercise of citizens' rights in the democratic process. Electronic distance voting, as well as the opportunity to hold national and local referendums are a contemporary form of exercising the democratic right to vote. Electronic voting will allow Bulgarian citizens who are living abroad for an extended period of time, and who amount to 2 million according to data from the Ministry of Foreign Affairs, an easy access to participating in elections and referendums. Electronic voting will also attract the young people of the so-called IT generation to take part in the elections and referendums. Another effect from the electronic voting will be the higher electoral activity due to the convenience for the above mentioned groups to vote. It will reduce the expenses for the

organization of elections, facilitate and simplify voting and the processing of the results. Through its various forms the participation of citizens in the democratic process at a local level will be guaranteed by their right to access to clear and full information about different questions regarding their life, as well as their right to partake in the major decisions of future importance.

CONCLUSIONS

Digitalization is the foundation for future development for the economy, the political and the entire public life. It is a question of strategic importance and in this respect the European Commission has prepared three main documents - the *White Book of Artificial Intelligence* (8), *European Data Strategy* (9), and *Building the Digital Future of Europe* (10) – as a basis for the future development of Europe with a single digital strategy.

In addition to the European documents, the Bulgarian government has published:

Concept for the development of artificial intelligence in Bulgaria by 2030 with Protocol 72 from a meeting of the Council of Ministers on 16.12.2020 which presents the prerequisites and challenges for the development of artificial intelligence (AI) in Bulgaria during the next decade. The lack of specialists in the ICT area (and AI in particular) is a challenge everywhere, yet in Bulgaria the capacity of research organizations to retain talented young scientists is very low. Due to the attractiveness of the IT sector or the work abroad, a considerable number of young IT specialists choose a career in the industry and ignore the scientific domain. In recent years the number of scientific publications from Bulgarian authors in the IT field has dropped significantly: 387 research works during 2015-2018, while six countries with a smaller population are subsequent in line – Cyprus, Luxemburg, Latvia, Estonia, Lithuania and Malta. A search in Scopus shows the most frequently addressed topics by Bulgarian researchers: machine self-learning, including neural networks, computer vision (image processing), data mining, natural language processing, robotics, knowledge presentation, etc. The articles referenced in Scopus come from a small number of scientific organizations (2);

In Bulgaria the various aspects of digitalization are covered by many national strategic and normative documents, yet the responsibilities entailed are distributed also among a number of institutions. This separation of aims and tasks leads to a problematic communication and to the slower functioning of many processes (1).

The technological development sets new social challenges and must be accompanied by social justice, i.e. a balanced approach in digital transformation management is required. These new challenges are mainly related to technological unemployment, insecure employment, unconventional employment forms, low or no opportunity to negotiate key elements from the labour process, digital incompetence, digital separation, as well as aging of the population at a national level.

According to an opinion expressed by the Economic and Social Council of the Republic of Bulgaria (ESC) (1) the digital transformation has the potential to improve productivity, as well as the life and quality of workplaces, if it is accompanied by a stable mixture of policies for inclusive and sustainable innovation-driven growth supported by the principle of social justice.

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