Republic of Bulgaria
ECONOMIC
AND SOCIAL COUNCIL

OPINION

on:

«DIGITAL TRANSFORMATION IN BULGARIA - CHALLENGES AND OPPORTUNITIES IN THE CONTEXT OF EUROPE'S DIGITAL FUTURE»

(own-initiative opinion)

Sofia, 2020

By decision of the President's Board of the Economic and Social Council (ESC) an opinion on the topic: "Digital transformation in Bulgaria - challenges and opportunities in the context of Europe's digital future".

The elaboration of the opinion was assigned to the Labour, Income, Living Standards and Industrial Relations Commission, the Economic Policy Commission and the Social Policy Commission.

Radosvet Radev - member of ESC from group I - employers and Plamen Dimitrov - member of ESC from group II - trade unions were appointed rapporteurs.

At its meeting held on 14 September 2020 the Plenary Session adopted the opinion.

1. Conclusions and recommendations

1.1. ESC believes that the digital transformation and its impact on all social processes is an issue of strategic importance for developing economic potential, improving working conditions and quality of life, especially in the context of an ageing population[1], but at the same time confronts society with so far unknown risks.

1.2. ESC is convinced that in the new conditions of global competition the European Union (EU) has every chance to be a model for a modern, sustainable and fast-growing society of prosperity and solidarity with a leading role in the world. In this regard, ESC welcomes the successive steps of the European Commission (EC) to create a European strategy for digital transformation[2] that works for the people, for an open and competitive economy and for a sustainable society.

1.3. ESC believes that the drastic changes in all spheres of public life caused by the technological leap inevitably lead to the need for changes in management and institutions. Changes also occur in the systems of the labour market, education, healthcare, transport, environment among others. Changes will also occur in the financial, tax and social security systems. Therefore, the effect will be significant in all types of markets - the financial market, the commodities market and the labour market.

1.4. According to ESC, the challenges to work in the context of digitisation of a number of activities are a multifaceted problem that requires multidisciplinary research. ESC believes that action should be taken to expand the statistical database with data on the labour market and the variables that affect it in the digital economy. This will make it easier to take a reasoned and correct position on many issues to which there is currently no definitive answer. ESC recalls that in its opinion the European Economic and Social Committee (EESC) called for better statistics and more research on the effects of artificial intelligence (AI) on employment and labour, including studies on sector-specific impacts[3].

1.5. According to ESC, the digital transformation will require significant investments from the private and public sectors. The more these investments slow down over time, the more difficult it is to access finance, the more money each worker will need in the future to increase his productivity, and every entrepreneur to increase his competitiveness. Regardless of the steps taken, Bulgaria lags significantly behind in strategic planning in the field of digitisation of the economy. ESC reminds again that the unfinished development of e-government in Bulgaria complicates the digitisation process.

1.6. The digital transformation, expressed through the introduction and use of modern digital technologies in the field of tangible and intangible production in order to increase the overall factor productivity and competitiveness of enterprises, leads to professional transformation.

[1] See https://ec.europa.eu/digital-single-market/en/ageing-well and https://ec.europa.eu/digital-single-market/en/policies/ehealth

[2] Communication from the Commission - Shaping Europe's Digital Future, COM (2020) 67.

[3] EESC opinion, INT / 877 "Coordinated Plan on the development of Artificial Intelligence".

1.7. ESC emphasizes the importance of digital skills and competencies to increase the ability to adapt human capital to changing demands of the workplace and labour market. The educational infrastructure will play a crucial role, which must provide conditions and opportunities for their acquisition. ESC recommends the Bulgarian government to focus more efforts on measures to stimulate digital competence and digital culture from early childhood throughout working life[4].

1.8. ESC recommends the development of the process of "lifelong learning" (LLL) precisely because of the rapid development of technology and the need for continuous retraining of the workforce. It is important for such a policy to be aimed at the pilot creation of sectoral qualification funds, where the social partners have a key role to play. According to ESC, the state and the social partners must offer and develop alternative forms of education (digital platforms, mobile applications, online courses, etc.).

1.9. Higher education should reflect global trends to support digital transformation, including personalized learning through free choice of learning "pathways", project-based learning and more independent work and activity of students, interpretation of data - from facts to knowledge, change in assessment methods and the role of teachers.

1.10. ESC notes with concern that the growth of income inequality is deepening both globally and nationally. ESC found that in the conditions of digital transformation the risk of new inequalities, based on limited opportunities for digital connectivity, data exchange, income and wealth, geographical features, intellectual property, etc. is becoming more pronounced. ESC believes that inequalities are the reason for the reduction of trust in European and national institutions and their reduction is essential for the sustainable development of the EU.

1.11. ESC believes that inequalities have always been part of economic systems. Therefore, they should be seen as a systemic problem of modern societies, not as something extraordinary. The issue of limiting them to socially acceptable limits must always be on the agenda, especially in the context of the new technological revolution we are facing as a society.

1.12. ESC is particularly concerned about the possible loss of jobs in the process of digital transformation, when not only traditional professions are disappearing, but entire industries are being transformed through digital innovations. The jobs that will be endangered represent a significant part of the labour force in Bulgaria and the EU, and for them there is a risk of impossibility to provide alternative employment, which will lead to an increase in structural unemployment[5].

1.13. According to ESC, the main challenges facing the labour market are related to technological unemployment, the entry of non-standard forms of employment, aging population at the national and European level and digital incompetence, the danger of limiting the scope of collective bargaining. These challenges should be adequately addressed in labour market policies

[4] As part of these strategies, the creation of a special body / institution or the adaptation of an existing one to a certain administrative unit could be considered, where it would monitor the quantitative and qualitative change in the professions.

[5] Administrative services, wholesale and retail trade, transport and logistics, routine processes in industry and construction, consulting services, etc.

in order to avoid erosion of labour standards, loss of confidence and widening of all types of inequalities.

1.14. Bulgaria continues to occupy unsatisfactory positions in various indices and surveys measuring the penetration of digital technologies in the economy and society[6], the digitisation of industry[7], readiness for the future of production[8]. For 2019 and 2020 our country ranks last in the EU-27 in the ranking of the index "DESI". This fact, according to ESC, requires assessment and analysis of the effect of the existing documents, forming the environment for digitisation and complete rethinking of the approaches that were applied.

1.15. In Bulgaria, key investments in the field of technological infrastructure are forthcoming, such as the National Centre for Mechatronics and Clean Technologies, the European Supercomputer Centre, the Centre for Excellence in Big Data and Artificial Intelligence among others. With close cooperation with business and development of public-private partnership, similar projects can be an effective tool for increasing the level of digitisation in the Bulgarian economy. ESC notes with concern that in Bulgaria investments in research and development (R&D) as a share of GDP is the lowest in EU-27. At an average European level of about 3% in Bulgaria, they are still less than 1%.

1.16. ESC recommends an analysis of the current regulatory and organizational framework in order to ensure the necessary level of cybersecurity in the communication of citizens and businesses with institutions, and to protect against cyber attacks aimed at businesses. It is essential for a sustainable pace of digitisation of the economy to have a reliable and secure ICT infrastructure serving the main economic and social sectors[9], which enjoys the trust of all stakeholders.

1.17. ESC recommends the implementation of a set of measures to support Bulgarian enterprises in the development and distribution of their own products and in the transition to the production of "smart products", including through the creation and use of Centres of excellence, building a demonstration ecosystem in the field of digitisation, increasing the capacity for implementation and work with digital technologies.

1.18. ESC calls for special attention and support to small and medium-sized enterprises (SMEs). In the face of rapid technological change and contested competition, SMEs do not have sufficient human, financial and technical capacity to remain competitive, and in fact the resilience of both the national and European economies is largely due to the resilience of SMEs.

1.19. ESC emphasizes that in the conditions of the pandemic caused by COVID-19, conditions were created for accelerated development of digitisation in both the economy and the

[6] European Commission, Index of Digital Entry into the Economy and Society (DESI), https://ec.europa.eu/digital-single-market/en/news/digital-economy-and-society-index-desi-2020

[7] European Commission, Monitoring progress in national initiatives on digitising industry, Country report, Bulgaria, July 2019.

[8] World Economic Forum, in collaboration with A.T. Kearney, Readiness for the Future of Production Report 2018.

[9] Administrative services, education, healthcare, finance, etc. The absence or underdeveloped state of public infrastructure reduces the effect of the implemented for new innovative technologies in the manufacturing sector, which respectively reflects on costs and competitiveness.

administration and a number of processes related to communication, education and management were digitised in a very short time. According to ESC, this phenomenon has spread to everyday life and it is worth analysing the mechanisms that have been implemented, often on a voluntary basis, in order to create an environment for accelerated digitalization even after the end of this health crisis.

1.20. ESC calls for the development and adoption of a national strategy on AI in the context of the EC White Paper on Artificial Intelligence[10] or for artificial intelligence to be an essential part of the Bulgaria 2030 National Development Strategy[11]. The social partners and civil society should be recognized as leading actors in the process of digital transformation and conductors of measures for digitisation of enterprises.

1.21. ESC pays attention to the messages from the tripartite summit held on 23 June 2020 on the contribution of the social partners to the successful development of the process of rebuilding Europe following the COVID-19 pandemic. During the meeting, the European social partners stated their conviction that in the coming years all efforts should be made to ensure that the funding provided by the NextGenerationEU recovery instrument[12] is properly spent, stimulating the necessary structural reforms and ensuring investments for more solid prosperity and job creation.

2. Introduction

2.1. The processes of digital transformation are part of the so-called The fourth industrial revolution, whose characteristic feature is that a number of technologies are replaced by others in a very short period of time and lead to changes in all spheres of public life. ESC recalls that the term Fourth Industrial Revolution refers to technologies that combine hardware, software and biotechnology. This revolution has been marked by innovative breakthroughs in areas such as robotics, artificial intelligence, nanotechnology, quantum computers, biotechnology, the Internet of Things, wireless technology (5G), 3D printing, fully autonomous vehicles and more. In this sense, there is already a lot of evidence for the fact that the concept of digitisation belongs to a much larger restructuring of all elements of public life.

2.2. ESC recognizes that the European debate on how to respond to the digital revolution politically will be one of the most crucial discussions of the next decade. In this sense, it is necessary to combine the efforts of the whole European society - of the institutions at European and national level, of the scientific community, of the social partners and of civil society organizations.

2.3. ESC is convinced that digital technologies must be a means to achieve both a more competitive economy and a fairer society. In this regard, ESC considers the three main

[10] COM (2020) 65 final - White Paper on Artificial Intelligence: A European approach to excellence and trust.
[11] At the end of June 2020 A preliminary vision of the Strategy for the Development of Artificial Intelligence in Bulgaria until 2030 was published. - Artificial intelligence for smart growth, set as a priority in "Vision, goals and priorities for the National Development Program: Bulgaria 2030"; http://www.bas.bg/wp-content/uploads/2020/07/Proposal-National-Strategy-AI-2030-24June2020.pdf
[12] https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=COM:2020:456:FIN&from=EN

documents of the EC - the White Paper on Artificial Intelligence[13], "European Data Strategy"[14] and "Building the Digital Future of Europe"[15], as a basis for the future development of Europe with a common digital strategy.

2.4. In addition to the European documents, ESC notes that the Bulgarian government published for discussion at the end of June a preliminary vision of the Strategy for the Development of Artificial Intelligence in Bulgaria until 2030 - "Artificial Intelligence for Smart Growth", and on July 15 adopted the national strategic document "Digital Transformation of Bulgaria for the period 2020-2030", and at the end of August presented for discussion a Draft Concept for the development of artificial intelligence in Bulgaria until 2030.

2.5. In its acts[16] ESC insists on developing a strategy for artificial intelligence and believes that due to the delay of this strategic document for the future of our country it is imperative to hold a broad discussion on it with social partners and citizens in the context of the forthcoming adoption of the National Programme for Development "Bulgaria 2030".

2.6. ESC emphasizes that in the context of planning and programming of operational programmes for the next programming period 2021-2027 in the process of developing the National Development Programme "Bulgaria 2030" the important decisions for the progress of Bulgaria are to be found. According to ESC, these decisions must be the result of a broad national debate with the social partners and citizens.

2.7. ESC notes that in Bulgaria the various aspects of digitisation are covered by many national strategic and regulatory documents, and at the same time the responsibilities for them are distributed among many institutions. This division of goals and tasks leads to difficult communication and slows down many of the processes.

2.8. ESC reminds that the EC builds its Digital Single Market Strategy[17] on three main pillars - "Access" of consumers and businesses to digital goods and services, "Environment" - creating appropriate conditions for the development of digital networks and innovative services, "Economy and society ”- maximizing the growth potential of the digital economy. Its implementation aims to ensure coherent and coordinated action and increase the impact of European, national and regional policies.

2.9. ESC supports the proposed priority sectors for the first stage of implementation of the AI Strategy (2021-2023) - scientific and applied research; smart agriculture; intelligent data extraction in healthcare, as topics have been outlined on which Bulgaria has built capacity and readiness to start work in the listed areas.

2.10. In this regard, ESC expects with interest the package of documents on the legislation on digital services of the EC[18], which will propose clear rules for access to the single market of the

[13] COM (2020) 65 - White Paper on Artificial Intelligence: A European approach to excellence and trust.
[14] COM (2020) 66 - Communication from the Commission - A European Data Strategy.
[15] COM (2020) 67 - Communication from the Commission - Building Europe's digital future.
[16] Opinion on The Future of Labour: The Challenges of the Fourth Industrial Revolution.
[17] https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=celex:52015DC0192
[18] https://ec.europa.eu/digital-single-market/en/digital-services-act-package

entire industry, including Internet service providers, search engines, cloud services and social networks, will strengthen control and accountability of online platforms and will protect basic rights of citizens such as their security in electronic identification when sharing information online are brought under control.

2.11. ESC's current position regarding digitisation is a consequence of adopted previous documents related to the process of technological renewal, which analyses the impact of new technologies in various sectors of public relations. The purpose of this act of ESC is to focus the attention of government at all levels, the social partners and civil society on the necessary changes related to the future development of European society.

3. Challenges

3.1. Labour market

3.1.1. ESC is convinced that the Fourth Industrial Revolution requires a balanced approach in which technological development is accompanied by social justice. The interconnection of the two aspects is a key element of the transition of Europe and our country to the next stage of industrial development.

3.1.2. According to ESC, the growing share of temporary workers internationally may be one of the reasons why the size of the difference in wages and productivity in individual Member States to change dynamically depending on their level of development - globalization, integration and technology. This will create more inequalities and slow down real convergence processes across the European Union (EU).

3.1.3. Wages are the result of the influence of many factors, and the Bulgarian worker may lose competitiveness due to the lack of a consistent policy on the part of the state regarding issues related to technological transformations.

3.1.4. According to ESC, labour market institutions must be flexible, provide security and achieve a fair distribution of opportunities and risks in terms of quality of employment and access to the labour market.

3.1.5. ESC recalls that the degree of technological progress determines the productivity of each employee. ESC also notes that the relationship between labour productivity and wages is about to be lost[19]. At the moment it is asymmetrical, but in the long run it will weaken, i.e. labour productivity will play an increasingly smaller role in determining wages.

3.1.6. According to ESC, the main challenges will be - technological unemployment, precarious employment, non-standard forms of employment, low or no ability to negotiate key elements of

[19] Kostov, L. (2019). Labour productivity and wages: A comparative analysis of EU countries. Dissertation work for acquiring educational and research degree "Doctor". UNWE https://ras.nacid.bg/api/reg/FilesStorage?key=e14c321a-e56c-40d6-8a7f-b23b498e3559&mimeType=application/pdf&fileName=%D0%94%D0%B8%D1%81%D0%B5% D1% 80% D1% 82% D0% B0% D1% 86% D0% B8% D1% 8F_% D0% 9B% D1% 8E% D0% B1% D0% BE% D1% 81% D0% BB% D0% B0% D0% B2_% D0% 9A% D0% BE% D1% 81% D1% 82% D0% BE% D0% B2.pdf & dbId = 1

the labour process, digital incompetence, digital divide, and ageing at the national level and in the whole of Europe.

3.1.7. In this regard, ESC believes that the main possible challenges for labour from the entry of non-standard forms of employment as a result of technological progress can be synthesized as follows:

• Loss and transformation of jobs requiring low and medium skill levels, and creation of others that require higher levels of competencies.

• Erosion of labour standards due to the lack of a definitive apparatus and direct commitments by governments.

• Creating digital governance and the risk of losing trust between managers and employees.

• Expanding inequalities of any type.

• Increasing the gap between the skills available from business and higher education.

3.1.8. ESC notes with concern that the relationship between the ageing of the nation and productivity in Bulgaria follows the model of inverted U, which shows that the nation is ageing and the working age population is declining. Accordingly, the probability of increasing labour productivity without investment in new technologies decreases statistically.

3.1.9. At the same time, there is another trend - more than 80% of people born after 1990 are active in social media and consciously use the Internet and digital devices[20]. In this regard, ESC believes that the preconditions are created for the growth of digital inequalities between the different generations, which is a threat to jobs, employment.

3.1.10. ESC fears that the jobs that will be threatened by digitisation are of office workers, officials working in the field of wholesale and retail trade, transport and logistics, routine workers in the manufacturing industry, construction, some in the field of financial services , translators, taxi drivers, separate consulting services, etc. These occupations represent a large part of the labour force in the EU and in our country, and there is a risk of not being able to find alternative employment for many people, which will increase structural unemployment accordingly[21].

3.1.11. In view of the challenges facing the labour market in Bulgaria, ESC believes that it is imperative to take targeted and urgent policies in education systems and on-the-job training, because the gap between the demand and supply of labour is growing. Some of these policies could be aimed at increasing investment in skills, promoting lifelong learning with a focus on digital skills and ICT, etc. It is important for such a policy to be aimed at the pilot creation of sectoral qualification funds, where the main role should be played by the social partners. This

[20] Global Digital Compass, 2018.

[21] CEDEFOP (2012). Future skills supply and demand in Europe. Forecast 2012. European Centre for the Development of Vocational Training (CEDEFOP). Luxembourg: Publications Office of the European Union. ISBN978 92 896 1128 2. ISSN 1831 5860. doi: 10.2801/93487. http://www.cedefop.europa.eu/en/publications/20633.aspx

will help to properly define the necessary competencies, as well as their acquisition, as the social partners have much more tools and flexibility when it comes to specific groups of people, industries, professions, etc. ESC has repeatedly stated recommendations in this regard in its acts[22], which once again emphasizes the importance of the problem and the need for full consensus on it.

3.1.12. ESC emphasizes that the general trend for Bulgaria is expressed in the ageing of some professions and their gradual elimination, but at the same time with the emergence of new professions. Nevertheless, in Bulgaria there is no department / institution that monitors the quantitative and qualitative changes in professions. Therefore, ESC recommends the creation of such a department / institution to collect and process statistic information to support the policy-making process.

3.2. Education and skills

3.2.1. ESC considers that education and training policy is the most important factor in the process of technological transformation and agrees with the EESC's recommendation that the EU should adopt a comprehensive approach to education and training policy, taking into account its two-way links with other areas, such as data policy, research, innovation and industrial policy, economic and social policy.

3.2.2. ESC draws attention to the conclusion of the SIF (2016)[23] that 65% of children who are now starting their primary education will eventually have completely new professions that do not even exist at the moment. Therefore, ESC believes that it is necessary to build a qualitatively new educational infrastructure that meets the requirements for the digital transformation.

3.2.3. ESC fully shares the statement that digital technologies are all around us - from professional to personal life, and the possession of basic digital literacy and skills has become a prerequisite for effective participation in today's society. ESC is pleased to note that the repeated opinion for the timely renewal of disciplines and modernization of the educational system has found a place in the project of the Bulgarian government on digital transformation.

3.2.4. ESC welcomes the creation of a Common European Skills Data Area, which will reduce the discrepancies between the education and training system, on the one hand, and the needs of the labour market, on the other hand.

3.2.5. ESC positively assesses the planned actions of the EC for general data literacy, which will contribute to increasing the share of the EU population with basic skills in the field of digital technologies from the current 57% to 65% by 2025[24]. A similar goal and actions must be set and achieved at the national level, not only at the Central European level, for example with regard to the DESI index, where our country ranks last in the EU for 2019 and 2020 (under 40). In order to

[22] Opinion on "Opportunities for policy development for young people in Bulgaria"; Opinion on The Future of Work: Challenges of the Fourth Industrial Revolution, Analysis on New Financial Instruments for the Development of Lifelong Learning.

[23] WEF. The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution. January 2016.

[24] COM (2020) 66 final - The European Data Strategy.

ensure the catching-up development of our country, the growth rates, which are set as a goal at the national level, should be higher as compared to the average European growth rate, which the EC expects and has predicted in the coming years.

3.2.6. ESC highlights five main trends in higher education, which are a consequence of innovations and general changes in the world of learning to adapt to digital transformation: project-based learning, data interpretation - from facts to knowledge, assessment and exams will change from tests to projects, the teacher / mentor becomes an increasingly important factor in the process. ESC recommends research Centres and universities to build European and national networks through which to share their achievements, research, discoveries and innovations, as well as training standards. This change should be reflected in the curricula.

3.2.7. ESC believes that education should enable citizens to develop new forms of critical thinking, including "awareness of algorithms" and the ability to reflect on the impact of AI on information, knowledge and decision-making[25].

3.2.8. ESC reports that the Bulgarian school has made a big step towards the implementation of the learning process entirely in an electronic environment. In order to study the experience and conclusions from the application of distance learning, ESC conducted an online discussion with principals and teachers from different types of schools in Bulgaria, trade unions and employers' organizations in the field of education.

3.2.9. ESC considers that several specific recommendations stand out, aimed at: combining face-to-face and distance learning; overcoming deficits with electronic resources; the need for changes in distance learning methods in an electronic environment; creation of a national repository with free educational resources; the need for a continuous process of teacher qualification to build digital skills; unification of the platforms for work in the electronic environment and the role of the teacher and the parents in the distance learning in the electronic environment.

3.2.10. ESC also believes that after conducting an in-depth analysis of the results of distance learning in an electronic environment, it is necessary to develop specialized regulations (standard) for this type of training to regulate its application in different circumstances and forms of training and to guarantees equal access to education in an electronic environment.

3.2.11. ESC believes that in preparing the strategic framework for European cooperation in education and training for the period after 2020, the new action plan in the field of digital education and the updated skills program should take into account the conclusions and recommendations of individual Member States in relation to the digital transformation of education and training systems, with an emphasis on quality and challenges, such as ensuring inclusion, providing equal opportunities and promoting cohesion.

[25] COM (2020) 67 final - Communication from the Commission "Building a Digital Future for Europe".

3.3. Inequalities

3.3.1. ESC notes that in parallel with the introduction of new technologies in the world and in particular in the EU, there is a process of increasing inequality in income, wealth, intellectual property, etc. Facts and arguments can be found in a number of supranational analyses[26] and EC reports[27][28], EESC opinions[29], official Eurostat data, etc.

3.3.2. ESC notes with concern that the sense of justice is declining in European societies, European institutions, and in particular cases also national institutions are enjoying less trust. ESC believes that one of the ways to restore trust in the institutions is to prevent new and close old inequalities. In this sense, the EU's commitment to a strategy for the transition to the Fourth Industrial Revolution is a lever for not only achieving EU economic progress and sustainable development in global competition, but also for ensuring more solidarity and democracy in the European society as a whole.

3.3.3. ESC warns that the concentration of benefits and capital in only a small percentage of the world's population is being exacerbated by the so-called "platform effect", through which organizations operating in the digital environment create networks that connect buyers and sellers of various products and services. In this way, they benefit from increasing economies of scale, but at the same time there are social risks. Therefore, it is necessary to find ways to balance the benefits and risks of AI from digital platforms, providing openness and opportunities for a wider range of participants in innovation at the micro and macro levels[30].

3.3.4. It has already been proven in practice that countries that can afford new technologies faster will secure lower labour costs, higher productivity, and a leading position in the competitive environment[31]. ESC notes with concern that many comparative analyses and indicators show the unfavorable position of Bulgaria and the countries in the region in terms of digital development, which may be a key factor for the future development of regional inequalities within the EU-27.

3.3.5. ESC believes that access to connectivity, which is the foundation for digital transformation, creates real opportunities for economic and social development of regions that are remote and underdeveloped, rural and mountainous regions. Usually, these regions are also severely affected by demographic trends of depopulation and ageing. Therefore, ESC urges the EC to pay serious attention and create opportunities for these regions for digital connectivity to develop in sync with other favoured large urban areas[32].

3.3.6. According to ESC, attention should also be paid to gender-sensitive measures to eliminate digital divisions in the context of the Fourth Industrial Revolution in both Europe and Bulgaria.

[26] Bruegel, based on a 2013 study of Carl Frey and Michael Osbourne of Oxford University - C.Frey and M. Osborne. The Future of Employment: How susceptible are jobs to computerization, 2013.
[27] https://ec.europa.eu/research/social-sciences/index.cfm?pg=policies&policyname=inequalities
[28] https://ec.europa.eu/research/social-sciences/pdf/policy_reviews/policy-review-inequalities_en.pdf
[29] http://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/wealth-inequality-europe
[30] Opinion "The Future of Labour: The Challenges of the Fourth Industrial Revolution".
[31] Opinion "The Future of Labour: The Challenges of the Fourth Industrial Revolution".
[32] Opinion "Mountain and semi-mountainous regions in Bulgaria - problems and opportunities for development."

As a result of existing gender gaps in learning and education, women will benefit less from employment opportunities in science, technology, engineering and mathematics[33].

3.4. Entrepreneurship and business environment

3.4.1. Bulgarian companies are aware of the benefits of implementing digital technologies. They expect the greatest effect from economies of scale, improved planning, increased competitiveness, efficient data collection and analysis, improved services, higher quality, implementation of new business models and transparency of business processes. Expectations are also significant for a positive effect of individualizing the products, adding value for the customer and creating an innovative and digital culture.

3.4.2. The unfinished development of e-government complicates the digitisation process. Only 20.68% of the administrations have an administrative information system for complex administrative services[34]. At the national level, deadlines should be set for the digitization of administrative services, with specific timetables for the various regulatory regimes, taking into account their importance and burden for citizens and businesses. ESC believes that significant attention should be paid to overcoming excessive administrative regulation[35] on small and medium enterprises, especially in providing adequate resources for development.

3.4.3. ESC considers that in order to achieve synergies in the area of e-government it is necessary to clearly distinguish the functional responsibilities and obligations of administrative state structures (incl. the different horizontal and vertical connections), which are currently entangled or overlapping.

3.4.4. ESC also considers it appropriate to apply an integrated approach using the opinions of experts from various fields, including engineers, lawyers, economists, to propose adequate mechanisms and options for the application of legal provisions in order to implement adequate protection against cyberattacks targeting businesses.

3.4.5. Possible barriers to business development and the use of digital technologies in some cases are insufficient knowledge, risk assessment and senior management understanding of how digitisation is changing business models or the context of competition[36]. The risk of wrong decisions, omissions and loss of competitiveness is significant when making fragmented, overlapping or inappropriate technological and ICT investments.

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[33] OECD (2017). Going Digital: The Future of Work for Women. Information document on the future of work.

[34] According to the "Report on the state of the administration in 2019", adopted by Decision №326 / 14.05.2020. of the Council of Ministers regarding the number, quantity and quality of electronic services provided to businesses and citizens, as well as the overall process of providing the service - submission of a request / application, tracking of execution, payment, receipt.

[35] Within the meaning of the Law on Restriction of Administrative Regulation and Administrative Control over Economic Activity.

[36] According to various studies, 70% of digital initiatives do not achieve their goals. For example, see: https://ditech.bg/pet-pravila-za-vuvezhdane-na-digitalni-tehnologii-v-kompaniite/; https://cio.bg/analizi/2016/05/27/3436960_progress_digitalnata_transformaciia_e_prioritet/; https://www.mckinsey.com/industries/retail/our-insights/the-how-of-transformation.

3.4.6. ESC notes that the challenge for companies is the mismatch in the pace of technology development, consumer expectations and the adaptation of companies to change. The rapid development of technology leads to new and higher expectations of consumers for personalized products and services. At the same time, the opportunities and renewal of technologies, processes, products in enterprises are developing at a slower pace.

3.4.7. Facilitating the consolidation process can be achieved through uniform and sector-neutral standards for services and semantics through common communication structures - network and protocols; general rules on cybersecurity and data protection; common language - including signs, alphabet, vocabulary, syntax, grammar, semantics, pragmatics and culture.

3.4.8. According to ESC, there is a lag in the in-depth discussion and analysis of how artificial intelligence will transform the economy and business in particular, as well as the benefits of its implementation. Among part of society, this leads to the perception of artificial intelligence as a threat that will lead to job loss by displacing people.

3.4.9. ESC notes that the processes of digitisation and integration of production facilities with ICT systems depend on the individual characteristics and size of enterprises. The main difficulties faced by SMEs in the supply chain and their integration into the processes of the digital economy can be summarized as follows:

• lack of awareness about high-tech solutions and the potential benefits of their application in production processes;

• lack of financial resources for the purchase of the necessary technology;

• inability to invest in research and innovation activities to create the necessary technology when it is not readily available;

• limited access to tools for testing solutions and modern technologies;

• shortage of highly qualified ICT experts for the implementation and use of modern solutions.

3.4.10. The implementation of new business organization models (including the digital business model by creating value based on the development of customer benefits with the help of digital technologies) requires the implementation of a long-term IT strategy in line with the company's strategy. IT is an investment that provides better control, traceability, the ability to make fast, accurate and timely management decisions.

3.4.11. ESC recommends the implementation of a set of measures to support Bulgarian companies to develop and distribute their own products and to move to the production of "smart products", including through:

• the use of Centres of Excellence as shared facilities or sites to provide access to leading techniques and technologies, best practices, research, support, training and a focus on digitalisation to ensure the dissemination of new innovative business models, processes, services and technologies for Industry 4.0, including through the use of 5G mobile networks;

• building a demonstration ecosystem in the field of digitalization and "Industry 4.0", through test Centres for testing / approbation of technologies and virtual productions, to support the process of accelerated integration of Bulgaria in European and international programs, initiatives and networks related to development and the implementation of Industry 4.0;

• supporting SMEs to increase the capacity to implement digital technologies related to their business and operational processes, for further digitisation in key areas of process management, computerization and connectivity based on standard models and protocols.

• development and implementation of programmes to improve the management capacity for working with digital technologies - e.g. good manufacturing practices, 6-sigma, statistical models; use of cloud technologies and social media; online sales and electronic invoicing.

3.4.12. ESC notes that the integration of digital technologies in the production process requires significant investments, which carry risks and uncertainty over time, a high share of non-recoverable costs for additional training and bringing the system into operational readiness, as well as in many cases low opportunity for future changes and settings. No entrepreneur has unlimited opportunities and time. Balance and expediency of optimization of automation processes, resources and time are needed.

3.5. Citizens and consumers

3.5.1. ESC found that the positive trend of penetration and development of Internet access and related technologies pose a number of challenges regarding the lack of skills to use digital technologies and face a large number of European citizens facing hitherto unknown risks and threats. Among them are physical safety, especially in the case of children; privacy and personal information; card data theft and payment fraud; fake news, malicious influences and radicalism, etc.[37]

3.5.2. The Internet provides a fertile ground for many frauds, which are not limited to any country boundaries. The most significant of these are connected with e-commerce, false identity and investment fraud. The rapid spread and development of digital and Internet-based technologies contribute to the emergence of many new and hitherto unknown risks and threats to citizens[38].

3.5.3. In addition, ESC points out that the entry of AI complicates and further increases the requirement for citizens to have at least basic digital skills in order to be able to protect their individual data, to be able to objectively orientate to whom they would provide them, are anyway endangered physically, financially or otherwise.

3.5.4. As early as in 2010 ESC has started insisting that the so-called integrated information system of the National Health Insurance Fund should be realised in order to establish the necessary connection between the patient, the doctor and the social security system, which will lead to more efficient use of public funds and will minimize fictitious activities and abuses by

[37] ESC Resolution "Challenges for Bulgarian citizens from the risks of the global digital environment".
[38] ESC Resolution "Challenges for Bulgarian citizens from the risks of the global digital environment".

health care providers[39]. ESC confirmed its concern about the delay in digitisation of healthcare in Bulgaria in another act in 2014[40]. At the same time, ESC notes with satisfaction that during the epidemic of COVID-19 in Bulgaria private companies voluntarily undertook the necessary research to create an electronic health platform and thus contributed to accelerating the process of digitisation in this very important public sector.

3.5.5. ESC recalls that despite the detailed regulations in the field of cybersecurity, incidents with leakage of personal data prove the need to review the mechanisms for control and security of information about citizens and companies stored in state registers and databases. On the other hand, according to ESC, too strict regulations for security and data protection in the private sector divert investments from innovation in the financial sector to data security and compliance with capital requirements for financial institutions and intermediaries[41].

3.5.6. ESC believes that the EU and in particular Bulgaria is facing the issue of consumer protection and their rights when shopping from online stores registered outside the EU. The main reason is that these purchases do not have the protection that the consumer has when shopping within the EU. In this regard, ESC emphasizes the importance of concluding agreements by national / European market surveillance authorities with similar authorities in third countries, where online stores are predominantly registered - China, USA, etc., in order to reach protection arrangements the rights of consumers using these stores.

3.5.7. ESC insists on the implementation of more reliable control over the safety of products imported by traders outside the EU, which implies greater cooperation with customs authorities, online platforms, training of business and consumers on product safety and more.

3.5.8. In this regard, ESC draws attention to the potential of the new program "Digital Europe" for the period 2021-2027 and calls on the Bulgarian institutions to actively explain the opportunities for participation of the social partners and civil society organisations.

3.5.9. The successful development of an Internet-based economy presupposes developed systems for online payments and high consumer confidence in them. ESC found that currently Bulgaria ranks first in the use of cash payments for the delivery of products ordered online, with 62% compared to the EU average of 18%[42].

3.5.10. At the same time, ESC recognizes the great potential of artificial intelligence in the field of information and media, but emphasizes that if it is not regulated, it can have an adverse effect by spreading fake news, creating information bubbles and exploiting prejudices included in the algorithms of AI.

[39] ESC Opinion "Health Reform".
[40] ESC Opinion "Healthcare in Bulgaria - problems and possible solutions".
[41] ESC Opinion on "Challenges for business in the context of the digitisation of the economy".
[42] Consumer Conditions Scoreboard: Consumers at home in the Single Market, 2015.

4. Opportunities for development

4.1. According to ESC, the digital transformation has the potential to improve productivity, as well as life and quality of jobs, if it is accompanied by a stable mix of policies for inclusive and sustainable, innovation-driven growth and the principle of social justice.

4.2. In this context, ESC welcomes the new autonomous Framework Agreement for Digital Transformation of the European social partners, with which they declare their support for the successful integration of digital technologies in the workplace, investment in digital skills, upskilling and continuing the employability of the workforce.

4.3. ESC points out that the relationship between labour productivity and wage growth is still difficult to grasp, and in the process of digital transformation, its establishment and regulation will become even more complicated. In this context, the discussion taking place in the EU on the so-called "basic income", taking into account specific country-specific characteristics, but with a clear and objective common methodology for determining it.

4.4. ESC emphasizes that the new forms of employment require a complete rethinking of social security and taxation as a system (types of sources, entities and financial flows). Reforms in these systems, as well as a number of other problems in the regulatory environment, need to be highlighted in the context of forthcoming societal changes and debates.

4.5. ESC emphasizes that in order to follow the dynamics of digitisation, the state and the social partners must offer workers and entrepreneurs appropriate training for all age groups and sectors through:

• providing a guarantee for the training of all workers and ensuring continuous training in the workplace and strengthening vocational education and training systems, as well as for workers in non-standard jobs;

• promoting interdisciplinary skills, including basic knowledge, digital literacy, cognitive and social skills;

• ensuring the inclusion of new qualification needs in collective training agreements and assessment frameworks, incl. for e-learning;

• development and implementation of programmes to improve the management capacity for working with digital technologies - for example, good manufacturing practices, six sigma, statistical models; use of cloud technologies and social media; online sales and electronic invoicing;

• developing IT strategies and implementing new business models.

4.6. ESC supports the actions of the EC to strengthen the Skills Programme, which also aims to strengthen people's digital skills, as well as actions to strengthen the "Youth Guarantee", in which special focus will be on digital skills in early career transitions.

4.7. Given the potential of artificial intelligence, ESC considers the two main building blocks set out in the White Paper on AI to be extremely important. In the first place is the “excellence ecosystem”, which mobilizes the necessary resources through a partnership between the private and public sectors throughout the value chain. Second is the "trust ecosystem", which aims to allay citizens' concerns about using AI applications and provide businesses and NGOs with the necessary legal certainty to innovate.

4.8. ESC considers that a useful tool is the establishment of business support networks and platforms for cooperation between universities, technology parks and centres of innovation[43] and business to promote digitalization, exchange of know-how and technology transfer, including through a system of vouchers for innovation in SMEs, including prototyping and testing of technological solutions, to be set as a possible scheme in the next programming period of the operational programmes[44].

4.9. Internet of Things[45] will connect "everything" in a virtual and real environment. AI, in turn, allows for processing and analysis of large databases (Big Data) and for the implementation of automated (robotic) solutions. ESC notes that the opportunities provided by digital transformation, the use of AI, the Internet of Things and blockchain can be applied in urban planning, development and implementation of intelligent transport and energy systems, health and social services, agriculture, education etc.

4.10. ESC supports the call of the European Parliament to create a strong set of consumer protection rights in the context of artificial intelligence and automated decision making. ESC also needs a risk assessment scheme for artificial intelligence and automated decision-making and a common EU approach to help ensure the benefits of these processes and to mitigate risks across the EU.

4.11. According to ESC, Europe needs to invest in connectivity, deep technology and human capital, as well as in smart energy and transport infrastructures. In the area of digital infrastructure and networks alone, the shortage of investment in the EU amounts to 65 billion euros per year. Reforms and increased investment in R&D and the introduction of technological developments could lead to a cumulative additional growth of 14% of GDP by 2030.

4.12. Taking swift action (for example by increasing investment and taking the necessary measures by 2022) instead of 2025) will lead to a further increase of 3.2% of GDP and will have a beneficial effect on job creation by 2030. This is a socio-economic stimulus that Europe cannot afford to ignore.

4.13. When using public financial resources, including those from the Innovation Fund and national operational programmes, especially those in the portfolio of the Ministry of Economy, it is recommended as a mandatory element in the evaluation of project proposals to include IT

[43] Innovation Hubs - https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool.
[44] Details of the EC ICT Innovation Voucher Policy https://ec.europa.eu/digital-single-market/en/ict-innovation-vouchers-scheme-regions
[45] Project for the National Programme "Digital Bulgaria 2025".

component and assessment of innovation capacity of the enterprise with a tool, complying with the European standard for innovative management (CEN / TS 16555-1).

(signed)

Prof. Lalko Dulevski, PhD

PRESIDENT OF THE ECONOMIC AND SOCIAL COUNCIL