



Republic of Bulgaria
ECONOMIC
AND SOCIAL COUNCIL

OPINION
on:
CHALLENGES TO BUSINESSES
IN THE CONTEXT OF
THE DIGITIZATION OF THE ECONOMY
(own-initiative opinion)

Sofia, 2019

The Economic and Social Council (ESC) has included in its Action Plan the elaboration of an opinion on "Challenges to Businesses in the Context of the Digitization of the Economy". The elaboration of the opinion was distributed to the Standing Commission on Economic Policy, the Commission on Regional Policy, Sustainable Development and the Environment and the Commission on Budget, Finance, Insurance and Social Security. Radosvet Radev - ESC Member of Group 1 - Employers, Chairman of the Commission on Economic Policy at the ESC was appointed rapporteur for the opinion. At its plenary session, held on 2 December 2019, ESC discussed and adopted this opinion.

ABBREVIATIONS USED

EU	-	European Union
ESF	-	European Social Fund
AI	-	Artificial Intelligence
ICT	-	Information and Communication Technologies
ESC	-	Economic and Social Council
IT	-	Information Technology
SMEs	-	Small and Medium-Sized Enterprises
MFF	-	Multiannual Financial Framework

1. CONCLUSIONS AND RECOMMENDATIONS

1.1. Digital transformation and its impact on all social processes is a matter of strategic importance for unlocking economic potential, improving working conditions and quality of life, especially in the context of an ageing population.¹

1.2. Clear legal and organizational framework, functional responsibilities and target indicators, financial and tax incentives are needed in order to accelerate the digital transformation.

1.3. ESC expresses its concern that Bulgaria is lagging significantly in strategic planning in the area of digitization of the economy. Nearly two years after the adoption of the Concept for Digital Transformation of Bulgarian Industry (Industry 4.0), in a period of planning and programming of the MFF of the EU, Bulgaria still does not have an effective Strategy 4.0. At the same time, the draft Strategy for Bulgaria 2030 is being discussed, whose first strategic goal is technological transformation.

1.4. ESC draws attention to the need for the urgent adoption and implementation of a national action plan for the provision of online administrative services. It is advisable to set at the national level time limits for the digitization of administrative services with specific schedules for the different regulatory regimes, taking into account their importance and burden to citizens and businesses.

1.5. ESC is aware that in the present day, economic growth is related to the introduction of new technologies that will not only stimulate investment in digital processes but also provide innovative opportunities for entrepreneurs, generating income growth and reducing costs.

1.6. ESC is extremely concerned about the limited amount of investment in innovation and ICT. To increase the share of publicly funded innovative projects, ESC recommends:

¹ See more on: <https://ec.europa.eu/digital-single-market/en/ageing-well> and <https://ec.europa.eu/digital-single-market/en/policies/ehealth>

1.6.1. provide for an assessment of the innovation capacity of enterprises using a tool that meets the European Innovation Management Standard as part of the overall evaluation of project proposals;

1.6.2. use the IT component when evaluating project proposals.

1.7. ESC believes that useful tools for promoting digitization, know-how sharing and technology transfer are: building business support networks, platforms for cooperation between universities, technology parks and centres for innovation and business, voucher systems for innovation in SMEs.

1.8. ESC recommends the implementation of a set of measures to assist Bulgarian enterprises in the development and distribution of their own products and 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 digitization, promotion the capacity to deploy and work with digital technologies.

1.9. Key investments in the field of technological infrastructure are forthcoming in Bulgaria, such as the National Centre for Mechatronics and Clean Technologies, the European Supercomputer Centre, the Centre for Excellence in Big Data and Artificial Intelligence, and others. In close cooperation with business and the development of public-private partnership, similar projects can be an effective tool for increasing the level of digitization in the Bulgarian economy.

1.10. ESC believes that it is of the utmost importance to ensure that business and employers' organizations are involved as leaders in the process and are the conductors of business digitalisation measures, and that they are necessarily informed, trained and supported in the performance of their functions, including using ESF funding.

1.11. ESC recommends analysing the current regulatory and organizational framework with a view to ensuring the necessary level of cybersecurity, both in the communication of citizens and businesses with institutions, and in protecting against cyber-attacks directed at enterprises. Crucial to the sustainable pace of digitalisation of the economy is the availability of a reliable and secure ICT infrastructure serving the major economic and public sectors, which is trusted by all stakeholders.²

² Administrative services, education, healthcare, finances and more. The absence or underdeveloped public infrastructure reduces the impact of the innovative technologies implemented in the manufacturing sector, which

1.12. There is a need to find solutions to the problem of underdevelopment of uniform standards ensuring interoperability.

1.13. ESC notes that digitization can make a significant contribution to improving the health and social services provided, which have an impact on business development and improving living standards.

1.14. The digital transformation, expressed through the introduction and use of modern digital technologies in the field of material and intangible production in order to increase the productivity and competitiveness of enterprises, also leads to a professional transformation.

1.15. ESC believes that new strategies are needed to qualify and adapt the education system so that the next generation of workers can adapt quickly to technical, social and digital transformation.

1.16. Higher education should reflect global trends that drive digital transformation - incl. personalized learning through free choice of pathway, project-based training and more independent work and student activity, interpretation of data - from facts to knowledge, changes in assessment methods and in the role of teachers.

2. INTRODUCTION

2.1. The European Commission regards the definition of digital transformation as "a combination of advanced technologies and integration of physical and digital systems, the advantage of innovative business models and new processes and the creation of smart products and services".³ Digital transformation is an integral part of the digitization of the economy.

2.2. Digital transformation has the potential to completely change business and public relations in all spheres⁴ - public administration and its services, education and healthcare systems, the structure of the national economy and of individual industries, the labour market, consumer expectations, the financial sector, etc. It is

accordingly reflects on costs and competitiveness.

³ https://ec.europa.eu/growth/industry/policy/digital-transformation_en

⁴ See also project of National Programme "Digital Bulgaria 2025", p. 13 et seq., <https://www.mtmc.government.bg/en/category/85/proekt-na-national-program-cifrova-bulgariya-2025-0>

of utmost importance for the Bulgarian society, given the trends of population decline and ageing and the deepening imbalance in its territorial distribution.⁵

2.3. Digitization of the economy creates conditions for efficient production of material goods, predetermines progress in all spheres of the economy by:

- automation of the main production and economic processes;
- development of the market for personalized production and consumption;
- increasing overall efficiency and reducing costs;
- knowledge mobilization through exchange;
- job creation in high-tech industries with the potential to increase income;
- creation of conditions for development of entrepreneurial and labour activity;
- creating conditions for raising the level and quality of life of the population;
- development of industry based on artificial intelligence;
- implementation of effective forms of management;
- optimal development of SMEs;
- formation of digital space and confidence of entrepreneurs and the population in the digital environment;
- striking a balance between innovation, security and protection of society.

2.4. Important aspects of digitisation in the industry are production automation, resource optimization, business process management, integration of digital processes, connectivity, improved interaction with end customers and suppliers, security.

2.5. Successful implementation of the digital transformation policy is determined primarily by:

- the legal framework;

⁵ According to NSI data, in the end of 2018 the population of Bulgaria is 7 000 039 people, and the persons aged 65 and over are 1 493 119, or 21.3% of the population of the country.

- the system of management;
- the interest and opportunities of entrepreneurs;
- material and financial resources;
- availability of digital knowledge, skills and competences;
- knowledge, use and application of the experience of countries that are leaders in the field.⁶

2.6. Digital transformation affects various functions in different industrial sectors - for example in the food industry, tourism, transport, insurance, the financial sector it affects elements of economic demand, while in construction and agriculture it affects the elements of economic supply. Each industry sector has different needs for digital technologies and the extent to which they are implemented, on which their use depends. The differences in the adopting key digital technologies indicate that different needs are prioritized across different industries because of the nature of their manufacturing processes.

2.7. Bulgarian businesses are aware of the benefits of implementing digital technology. They expect the greatest impact from resource optimization, improved planning, increased competitiveness, efficient data collection and analysis, improved service delivery, higher quality, implementation of new business models and transparency of business processes.^{7 8 9} There are substantial expectations from the effect of individualizing the products, adding value to the customer and creating an innovative culture.

2.8. The European Commission builds its Digital Single Market Strategy¹⁰ on three main pillars - Access¹¹ of consumers and businesses to digital goods and services,

⁶ E.g. Japan, USA, Germany, Singapore.

⁷ "Digitalization Study in Bulgaria" conducted by Siemens Bulgaria and Germano- Bulgarian Chamber of Commerce, 2018 https://bulgarien.ahk.de/fileadmin/AHK_Bulgarien/News/Digitalization_Survey_Bulgaria-BG.pdf

⁸ Thematic in-depth analyzes conducted by the Bulgarian Chamber of Commerce and Industry in 2019, <https://www.bcci.bg/bulgarian/projects/DigSMSe/Analysis.pdf>

⁹ Survey on the level of automation in the Bulgarian industry, conducted in 2019 by the Professional Association of Robotics and Automation (STEAM) <https://www.bia-bg.com/news/view/26123/>

¹⁰ <https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=celex:52015DC0192>

¹¹ Facilitated cross-border e-commerce, efficient cross-border logistics, discontinuation of geo-blocking, copyright modernization, revision of satellite broadcasting and cable retransmission rules, reduction of the administrative burden on businesses related to VAT regimes.

Environment¹² - creating the right conditions for the development of digital networks and innovative services, Economy and society¹³ - maximizing the growth potential of the digital economy. Member States shall assist the Commission in formulating the vision, the short term and the long-term strategy for digital entrepreneurship. Its implementation should be aimed at ensuring coherent and coordinated action and increasing the impact of European, national and regional policies.

2.9. In Bulgaria, various aspects of digitization are covered by a number of national strategic and regulatory documents, such as:

- Innovative Strategy for Intelligent Specialization of the Republic of Bulgaria 2014-2020;
- Digital Bulgaria National Programme 2025;
- National Next Generation Broadband Infrastructure Plan;
- Concept for Digital Transformation of the Bulgarian Industry (Industry 4.0);
- E-Government Strategy;
- Cybersecurity Strategy;
- E-Government Act;
- Cybersecurity Act, etc.

2.10. According to the Digital Single Market Strategy for Europe, "The level of digital skills must also be raised among workers in all economic sectors and among job seekers in order to improve their employability. There is a need for change in the way education and training systems adapt to the digital revolution. These changes could be based on European initiatives such as the "Broad Coalition for Digital Jobs", "European e-Skills Week" and "Opening up education".

¹² Revision of telecommunication rules and audiovisual media framework, analysis of the role of online platforms, enhancing trust and security in digital services, partnership with the cyber security industry in the field of technology and online network security.

¹³ Initiative to promote the free movement of data within the EU, as well as an initiative for European cloud services; prioritizing standards and interoperability of devices, applications, data warehouses, services and networks that are critical to the digital single market; support for a global digital society where citizens have the necessary skills to take advantage of the Internet and increase their chances of finding a job.

3. CHALLENGES AND OPPORTUNITIES

3.1. The main challenges to businesses can be grouped in several important areas¹⁴:

- strategic, legislative and institutional framework;
- educational infrastructure;
- standardization in the area of connectivity and data exchange; processing of large data sets, artificial intelligence;
- organization of business activities, consumer expectations;
- people - digital knowledge, skills and competences;
- security;
- financing.

Strategic, legislative and institutional framework

3.2. The Bulgarian government has developed and adopted a number of strategic and regulatory documents in the field of digitization of the economy and e-government. A number of advisory function councils have been established and are operating (e.g. E-Government Council, Cybersecurity Council, Smart Growth Council). Nevertheless, Bulgaria continues to occupy unsatisfactory positions in various indices and surveys, measuring the entry of digital technologies into the economy and society¹⁵, the digitization of industry¹⁶, the readiness for the future of production¹⁷. This fact requires an assessment and analysis of the effect of the existing documents that shape the digital environment and a thorough rethinking of the approaches applied.

3.3. ESC believes that in order to achieve synergies in the field of e-government, it is necessary to clearly differentiate between the functional responsibilities and

¹⁴ According to the Global Center for Digital Business Transformation of the International Institute for Management Development (International Institute for Management Development) for Management Development) through the so-called "grand piano model" describes 7 areas of organizational change: business model, organizational structure, digital skills of personnel, process digitization, IT infrastructure, degree of digitization of products/services, digital channels for customer interaction. Source: Wade, M., 2015, Digital Business Transformation. A Conceptual Framework, <https://www.imd.org/research-knowledge/reports/framework/>

¹⁵ European Commission, Digital Economy and Society Index (DESI), Bulgaria 2019 Report.

¹⁶ European Commission, Monitoring progress in national initiatives on digitising industry, Country report, Bulgaria, July 2019.

¹⁷ World Economic Forum, in collaboration with A.T. Kearney, Readiness for the Future of Production Report 2018.

obligations of the administrative state structures (incl. also the various horizontal and vertical connections) that are currently mixed or overlapping. Strengthening of public-private partnerships is also necessary. For each of the following areas, it is appropriate to delegate the exclusive rights and obligations of a particular institution in a clear interaction with other competent public authorities with regard to information security, incl. those related to defence, intelligence, national security:

- Information society, e-government, public and one-stop shops;
- ICT sector development and digitization of industry;
- Networks and communications;
- National IT Security and National Information Security Incident Action Centre.

3.4. ESC believes that it is appropriate to apply an integrated approach using the opinions and opinions of professionals from different fields, incl. engineers, lawyers, economists to propose adequate mechanisms and options for the implementation of legal provisions in order to provide appropriate protection against cyber-attacks directed at enterprises.

3.5. The incomplete development of the e-government is hampering the digitalization process. Only 20.68% of administrations have an administrative information system in place for complex administrative services¹⁸. At national level, deadlines for the digitization of administrative services should be set, with specific timetables for the different regulatory regimes, taking into account their importance and burden to citizens and businesses. ESC believes that considerable attention must be paid to overcoming excessive administrative regulation¹⁹ on small and medium-sized enterprises, especially when providing adequate development resources.

3.6. According to ESC, a viable option is to regulate the utilization of the potential and capabilities of representative national branch associations to provide the

¹⁸ According to the 2018 State of the Administration Report, adopted with Decision No. 273 / May 20, 2019 of the Council of Ministers on 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 an application / application, tracking of performance, payment, receipt.

¹⁹ Within the meaning of the Restriction of Administrative Regulation and Administrative Control over Business Activity Act.

administration with solutions on e-government, electronic certification and identification services, network and information security, spatial information infrastructure and public sector information in machine-readable formats, an open format for achieving a high overall level of network and information security.

3.7. Businesses and employers' organizations need to be recognized as leading elements in the process and drivers of enterprise digitization measures. Therefore, they need to be informed, trained and supported in the performance of their functions, incl. with ESF funding.

3.8. ESC considers a useful tool the building of business support networks and platforms for collaboration between universities, technology parks and innovation centres²⁰ and businesses to promote digitization, know-how sharing and technology transfer, incl. through a system of innovation vouchers for SMEs, incl. for the prototyping and testing of technological solutions to be laid down as a possible scheme in the next programming period of the operational programmes.²¹

3.9. Key investments in the field of technological infrastructure are forthcoming in Bulgaria, such as the National Centre for Mechatronics and Clean Technologies, the European Supercomputer Centre, the Centre for Excellence in Big Data and Artificial Intelligence and others. In close cooperation with business, similar projects can be an effective tool for increasing the level of digitization in the Bulgarian economy.

Educational infrastructure

3.10. Professional skills in most industries will undergo significant changes. It is important to envision and train professionals with the knowledge, skills and most of all ability to adapt to the dynamics of emerging digital transformation technologies. Therefore, new strategies are needed to qualify and adapt the education system to the new conditions.

3.10.1. Students' interest in topics such as mathematics, information technology, science and technology should be encouraged and the capability of abstract thinking stimulated.

²⁰ Innovation Hubs - <https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool>.

²¹ Detailed information on EC voucher policy for ICT innovation <https://ec.europa.eu/digital-single-market/en/ict-innovation-vouchers-scheme-regions>

3.10.2. IT competence teachers should train students to think in practical terms when using new tools to help them gain a basic understanding of new digital and information technologies and their application in a particular field.

3.10.3. It is especially important to encourage constructive and interpretative thinking, to inspire creative minds in schools and universities. Problem-oriented thinking will be a must in order to achieve a good performance and to deal with emerging tasks and problems.

3.10.4. There are increasing expectations for professionals to have more and more informally acquired skills, such as the ability to act independently, to build networks of contacts, to self-organize and to be adaptive to teamwork, with an emphasis on specific goals, including abstract thinking. Adaptability is one of the major challenges, but it can also be a major starting point. The next generation of workers must learn to adapt quickly to technical, social and digital transformation.

3.11. The innovations and general changes in the world of digital transformation adaptation training could be highlighted in 5 major trends in higher education:

3.11.1. New forms will be increasingly involved in the learning process (e.g. e-learning and distance learning) and personalized learning through the free choice of pathway.

Students will have more opportunities to study at different times and from different places. They will be trained with learning tools that adapt to the capabilities of the trainees. This means that above average students will be taught more difficult tasks and questions. This will lead to positive learning experiences and reduce the number of students who lose confidence in their academic abilities.

3.11.2. Project based training. More independent work and student activity.

As everyone's careers will need to adapt to the future economy of rapid change, today students will need to adapt to project-based learning and work. This means that they have to learn to develop and apply their skills in a shorter time and in different situations. Because technology can facilitate greater efficiency in specific areas, curricula should provide opportunities for skills that require not only knowledge but also teamwork or face-to-face interaction. Business involvement in content creation will grow. Keeping a curriculum that is up-to-date, relevant and useful is only realistic when good professionals and young people are involved.

The critical contribution of students to the content and sustainability of the courses is a must for a contemporary curriculum.

3.11.3. Data interpretation - from facts to knowledge.

Computers will soon take care of each statistical analysis, describe and analyse the data, and forecast future trends. Therefore, human interpretation of this data will become a much more important part of future curricula in exchange for factual information and the ability to calculate or solve problems directly. The application of theoretical knowledge to the practical problem and the use of knowledge to define the problem engineering will be crucial. Extracting the logic and trends from the data obtained will become a major new aspect of mathematical literacy.

3.11.4. Assessments and exams will change significantly.

As learning and testing platforms will evaluate students' abilities at every step, measuring their competencies through questions and answers can become formal. If a student's actual knowledge can be measured by a test during the learning process, then his/her application of knowledge is best appreciated when working on projects in the field. In other words, it is more effective and better for the student to evaluate through a project rather than a test.

3.11.5. The teacher/mentor becomes an increasingly important factor in the process.

In the coming years, students will be able to have greater independence in their learning process, which, however, requires, unlike the current "conveyor belt" organisation of education, a high level of responsibility for its development and the ability to assist in teachers' decision-making, or mentoring will become a major success factor for students. Teachers will form the direction in the "jungle" of information and opportunities in which students will have to find and beat their right path in professional and career terms. This means that the teacher and the educational institution are even more vital for the effective development and career achievements of students and through them for the business environment and companies in Bulgaria.

Standardization in the field of connectivity and data exchange. Big Data Processing, Artificial Intelligence

3.12. Obsolete technical infrastructure and difficult integration between systems in enterprises create potential problems when trying to integrate and work together. It is necessary to ensure the uniformity of the system and the compatibility between the different information systems used for the relationships between departments within the company and between the enterprise and the outside world.

3.13. According to a CISCO Systems survey²², the percentage of industrial enterprises using ICTs from more than 10 manufacturers (suppliers and brands) has decreased from 46% to 37% in the last year. This means that low levels of provider consolidation are a real, measurable, and insurmountable barrier to building adequate protection against complex hacking attacks aimed at stealing information, disrupting the proper functioning of information systems, or denying services.

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

3.15. According to ESC, there is a delay in the in-depth discussion and analysis of how artificial intelligence (AI) will transform the economy and in particular business, as well as the benefits of implementing it. In part of society, this leads to the perception of artificial intelligence as a threat that will lead to job losses through displacement.

3.15.1. The Internet of Things²³ will connect "everything" in a virtual and real environment. AI, in turn, enables the processing and analysis of large databases (Big Data) and the implementation of automated (robotic) solutions.

3.15.2. The opportunities offered by digital transformation, the use of AI, the Internet of Things and blockchains can be applied to urban planning, development and deployment of intelligent transport and energy systems, healthcare and social services, agriculture, education and more.

²² Anticipating the Unknowns. Chief Information Security Officer (CISO) Benchmark Study, CISCO cybersecurity studies 2019, www.cisco.com

²³ See definition of the Internet of Things, Artificial Intelligence, Big Databases, Blockchains, etc. in the draft National Programme "Digital Bulgaria 2025".

3.15.3. The economic sectors that are the pioneers in artificial intelligence are those that have a standardized data set.

Organization of business activities, consumer expectations

3.16. The processes of digitization and integration of production capacity with ICT systems depend on the individual characteristics and the size of enterprises. The main difficulties faced by SMEs in the supply chain and their integration into the digital economy can be summarized as follows:

- lack of awareness of high-tech solutions and the potential benefits of implementing them in manufacturing processes;
- lack of financial resources to purchase the necessary technology;
- inability to invest in research and innovation activities to create the technology that is needed when it is not easily accessible;
- limited access to tools for testing the solutions and advanced technologies;
- shortage of highly qualified ICT experts to deploy and use up-to-date solutions.

3.17. Implementation of new business organisation models (incl. the digital business model by creating value based on developing customer benefits through digital technology) requires the implementation of a long-term IT strategy consistent with the enterprise strategy. IT is an investment that provides better control, traceability, the ability to make fast, accurate and timely management decisions.

3.18. The rapid development of technology is driving new and higher consumer expectations for personalized products and services that can provide them with different experiences. At the same time, the capabilities and upgrades of technologies, processes, products in enterprises are developing at a slower pace.

3.19. It is necessary to implement a set of measures to assist Bulgarian enterprises in the development and distribution of their own products and the transition to the production of "smart products", incl. through:

3.19.1. Use of Centres of Excellence as shared facilities or facilities to provide leading-edge 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.

3.19.2. Building a demonstration ecosystem in the field of digitization and Industry 4.0 through test centres for testing of technologies and virtual industries, to support the process of accelerated integration of Bulgaria into European and international programmes, initiatives and networks related to the development and the implementation of Industry 4.0.

3.19.3. Support of SMEs to increase the capacity to deploy digital technologies related to their business and operational processes to further digitize in key areas of process management, computing and connectivity based on standard models and protocols.

3.19.4. Development and implementation of programmes for improving the management capacity for working with digital technologies - e.g. good manufacturing practices, 6-sigma, statistical models; use of cloud technology and social media; online sales and e-invoicing.

People - digital knowledge, skills and competencies

3.20. An important element of the challenges of digital transformation are people - in their capacities of entrepreneurs, employees and consumers.

3.20.1. ESC has outlined its views on the challenges facing labour and Bulgarian citizens in several opinions.^{24 25 26}

3.20.2. ESC believes that technology can only succeed through people who have the attitude and skills to use properly in creative and strategic terms.

3.20.3. Entrepreneurs have to deal with the shortened cycle of management decisions and the use of new models of organization and management.

3.20.4. The complexity of implementing a consistent IT strategy lies in the readiness of the management to maintain and possibly enforce the necessary solutions and to create the appropriate team to assist the enterprise in the implementation and seamless use of technological tools.

²⁴ ESC Opinion on The Future of Labour: The Challenges of the Fourth Industrial Revolution, 2018.

²⁵ ESC Opinion "Challenges to Labour in the Context of Digitizing the Economy", 2019.

²⁶ ESC Opinion "Challenges for Bulgarian Citizens from the Risks of the Global Digital Environment", 2019.

3.20.5. Another aspect and factor for change is the growing influence of the younger generation, which is currently generating financial power but has different approaches and requirements when using products and services.²⁷

3.21. Possible obstacles to business development and the use of digital technology are in some cases insufficient knowledge, risk assessment and understanding of senior management on digitization, how it changes business or the context of competition. In the case of fragmented, overlapping or inappropriate investments, there is a risk of wrong decisions, process failures and loss of competitiveness.²⁸

Security

3.22. Regardless of the detailed cybersecurity regulation, incidents related to the unprecedented shutdown of the Commercial Register and the unregulated access to the millions of individuals and legal entities from the National Revenue Agency information sets show the need to review the control and security mechanisms. security of information stored in state registers and databases.

3.23. At the same time, too stringent security and data protection regulations in the private sector are "pulling" investment from financial sector innovation towards data security and meeting the capital requirements for financial institutions and intermediaries.

Financing

3.24. Access to adequate financial instruments in each of the stages of implementation of digital transformation in enterprises, incl. training is one of the important factors for the successful running of the process. It is appropriate to continue the practice of successful implementation in the next programming period of bank guarantee schemes, interest-free loans, incentive schemes for start-up innovative enterprises, etc. The possibilities of tax incentives for research and development should also be considered.

²⁷ Generation Y. The first generation that grew up with digital technology. These are people born between 1980 and 2000, which are expected to make up 75% of the workforce in 2025.

²⁸ According to various studies, 70% of digital initiatives are not achieving their goals. E.g. вж: <https://ditech.bg/pet-pravila-za-vuvezh-dane-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>.

3.25. Enterprises' investments in ICT equipment decreased from 7.4% of all investments in 2011 to 0.4% in 2018, but at the same time, investment in intellectual property products is increasing (from 6.4% to 12.2%)²⁹, which greatly guarantees the software provision of production processes and lines. Overall, the share of these investments is only 12.6% of all investments in 2018, which is insufficient in value and amount to ensure a quality change in the digitization of the industry.

3.26. Integrating digital technology into the manufacturing process requires significant investment that carries risk and uncertainty over time, a high share of non-recoverable costs for additional training and system readiness, and in many cases, low opportunity for future changes and adjustments. No entrepreneur has unlimited opportunities and time. Balance and appropriateness of optimization of automation processes, resources and time are needed.

3.27. When using public financial resources, incl. from the Innovation Fund and national operational programmes, especially those in the Ministry of Economy's portfolio, it is advisable to include as an obligatory element in the evaluations of project proposals the IT component and the evaluation of the innovative capacity of the enterprise with a tool that meets the European standard for innovative management (CEN/TS 16555-1).

(signed)

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²⁹ <https://ec.europa.eu/eurostat/web/national-accounts/data/database> - Cross-classification of gross fixed capital formation by industry and by asset (flows)