

Accelerating the Digitization Process in the Public Sector

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Abstract: The main objective of digitalisation is to contribute to the profound transformation of the economy, public administration and society, increasing performance and efficiency in the public sector, by creating new types of value based on digitalisation, innovation and digital technologies. The study aims to present and become aware of the reality in Romania regarding the lack of interoperability of IT systems in public administration, the low level of integration of digital technology by the business environment, the level of digitalization skills of the population, etc. According to reports and statistics, Romania ranks last in most of the analysis indicators on the degree of digitization in the European Union. Small and medium-sized companies that have been cross the barrier of technology have had the best chance of identifying new business opportunities during the pandemic. In this context, it is necessary for public administrations to adapt to new realities and to develop not only services that lead to simplification of processes and increase the speed of execution of works, but especially to improve interaction with citizens, by reducing bureaucracy and providing digital solutions. That they can solve most of their problems without having to make unnecessary trips to state institutions. From the appearance of the pandemic until now, we can conclude that this uncertain and completely atypical period still had a positive impact for Romania, namely the accelerated digitalization both in private companies and in the state administration.

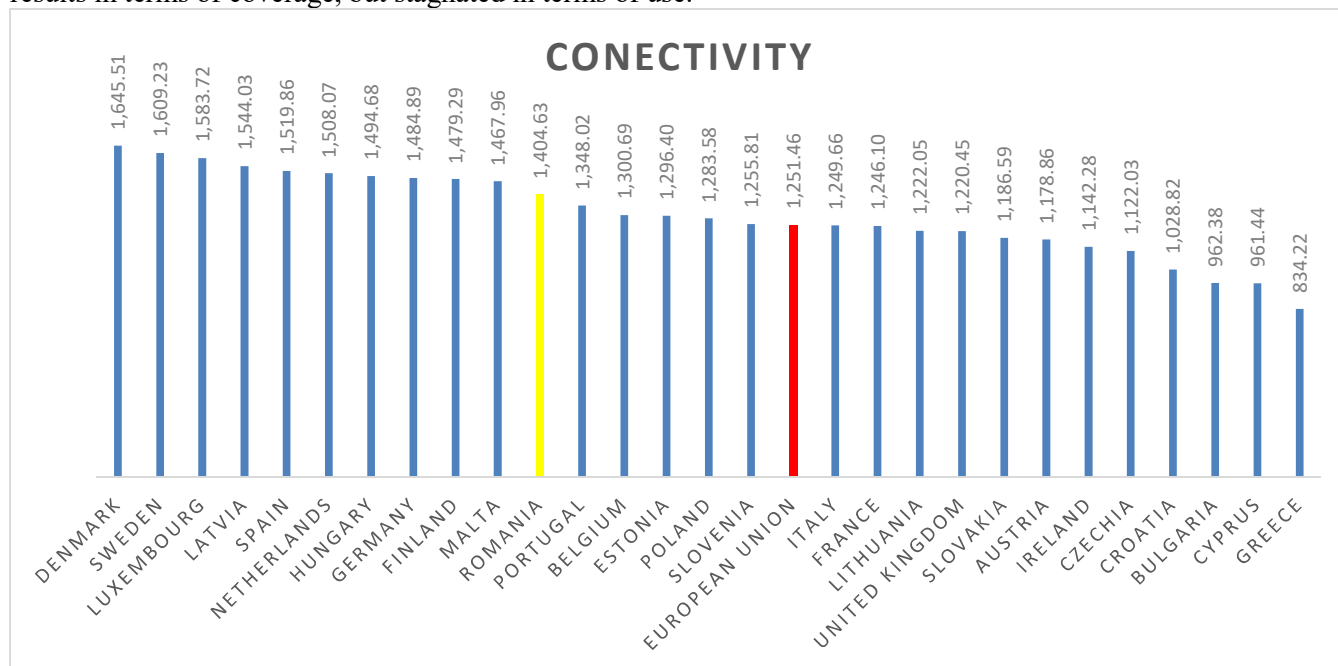
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1. Introduction

Starting with the end of 2019, the digitization process has become one of Romania's main priorities, laying the foundations of a central authority, the Romanian Digitization Authority (ADR), with the main objective of coordinating the process of digital transformation of the Romanian economy and society. This objective represents a fundamental element in order to implement the new development model of Romania and to achieve convergence with the more advanced European states.

The Authority for the Digitization of Romania (ADR) was established in 2020. It functions as a structure with legal personality subordinated to the Government and aims at: the digitization of the public sector; developing and ensuring interoperability between public authorities and institutions; development of computer authentication systems and interconnection of public computer systems; development of electronic public services; implementation at national level of information systems that provide eGovernment services; operation of information systems providing eGovernment services; elaboration and implementation of regulations on specific activities of government by electronic means in accordance with European and national strategies in the field of digitization; the operation of interfaces between the computer systems of public institutions and citizens or the business environment, being a gateway to their electronic public services provided by the public administration; implementation of digital services that capitalize on technical mechanisms for certifying authenticity and ensuring data protection; implementation of specific technologies and models of shared exploitation of IT resources, to support the implementation and provision of digital services including on the basis of cloud platforms; implementation and operation of access mechanisms to digital services in a regime of

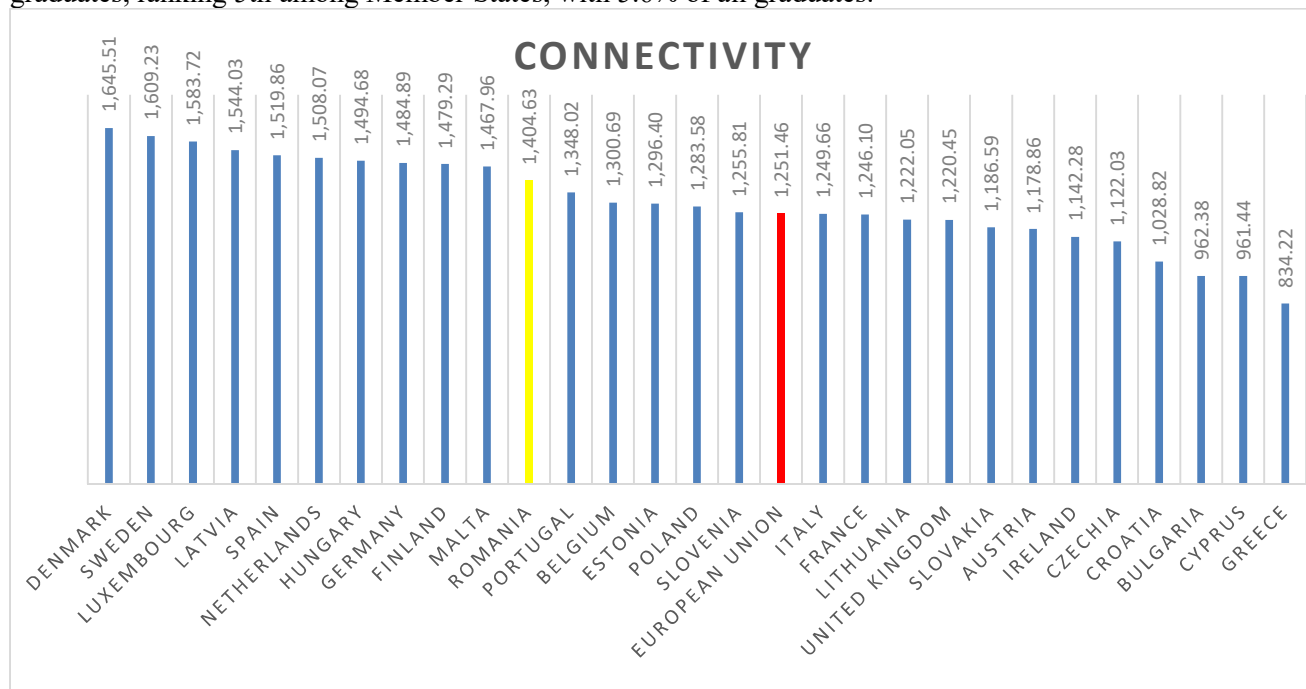
mobility and independence from access technology, in order to maximize their addressability; ensuring cyber security for the public sector; implementation of artificial intelligence in the public sector. According to DESI indicators, Romania ranks 11th in terms of connectivity. In 2019, Romania improved its results in terms of coverage, but stagnated in terms of use.



Source: DESI

Table 1. DESI values for Connectivity in European countries

In terms of digital skills, Romania ranks 27th out of 28 EU countries. Less than a third of 16- to 74-year-olds have basic digital skills, and only 35% have basic software skills. Romania has good results in terms of ICT graduates, ranking 5th among Member States, with 5.6% of all graduates.

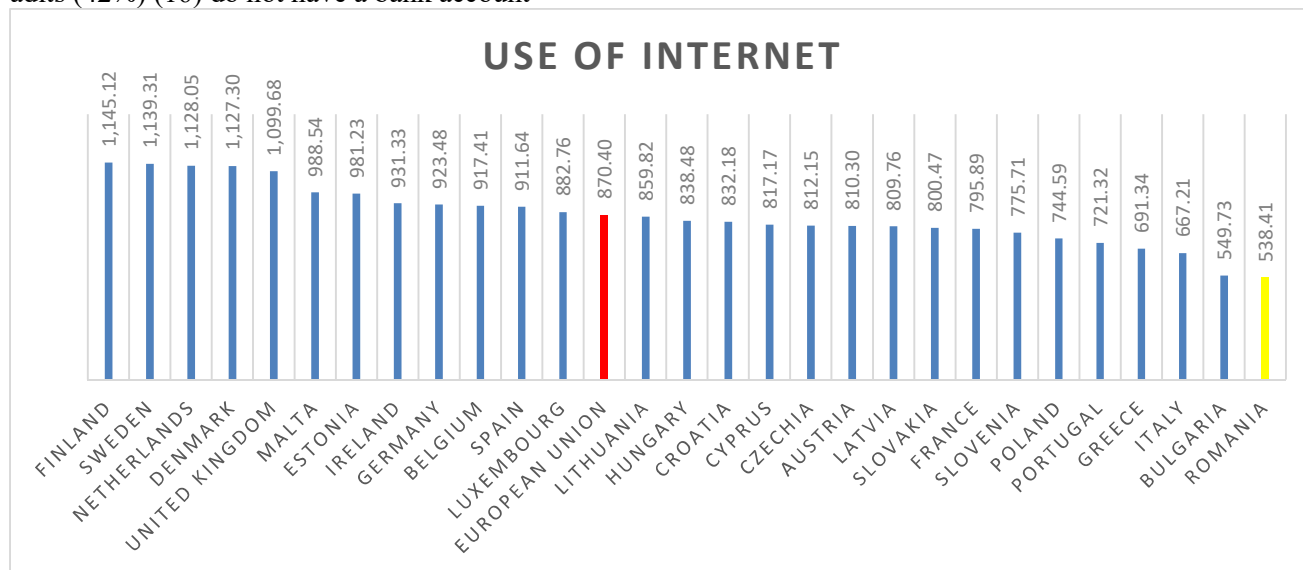


Source: DESI

Table 2. DESI values for Human Capital in Europe country

Regarding the use of internet services, Romania has the lowest level of use compared to EU member states. However, there are two online activities in which Romania ranks first in the use of social networks (82%,

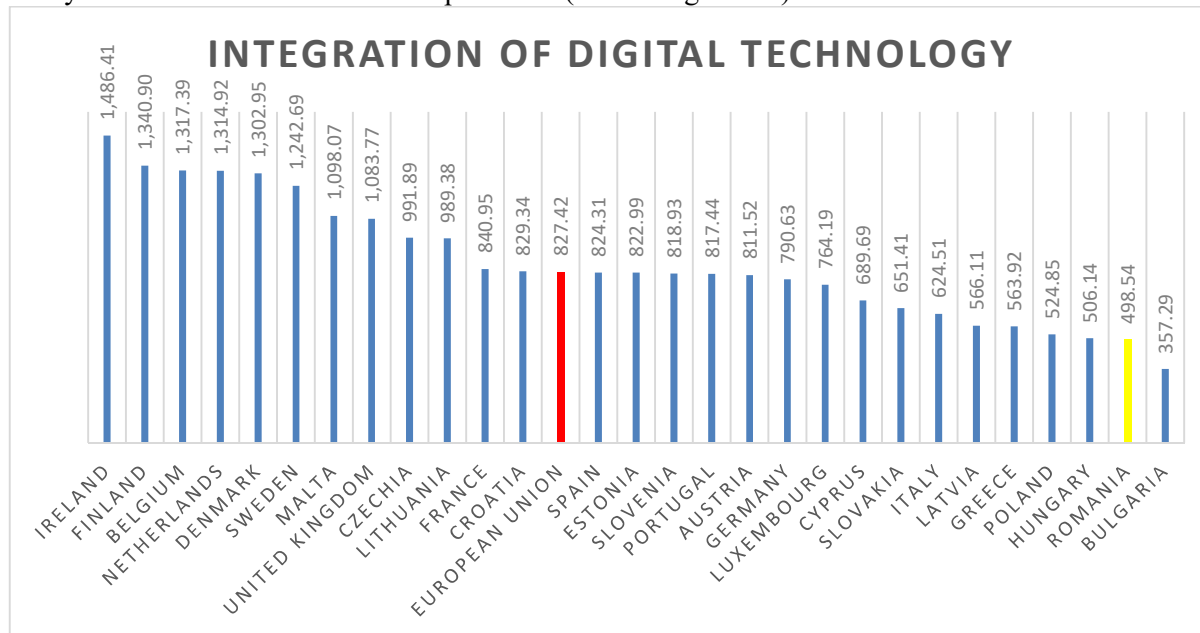
compared to an EU average of 65%) and video calls (67%; EU average: 60%). In contrast, the use of online banking (11%), shopping (29%), reading news (55%), as well as the consumption of music, videos and online games (63%) are the lowest among EU Member States. , mainly due to a lack of confidence in digital technology. The low level of use of online banking services is also due to the fact that more than two out of five Romanian adlts (42%) (16) do not have a bank account



Source: DESI

Table 3. Connectivity value on Europe country - DESI values for Use of Internet in European countries

Romania ranks 28th among EU countries in terms of the integration of digital technology by the business environment, well below the EU average. 23% of Romanian companies exchange information electronically, while only 8% use social communication platforms (EU average: 25%).



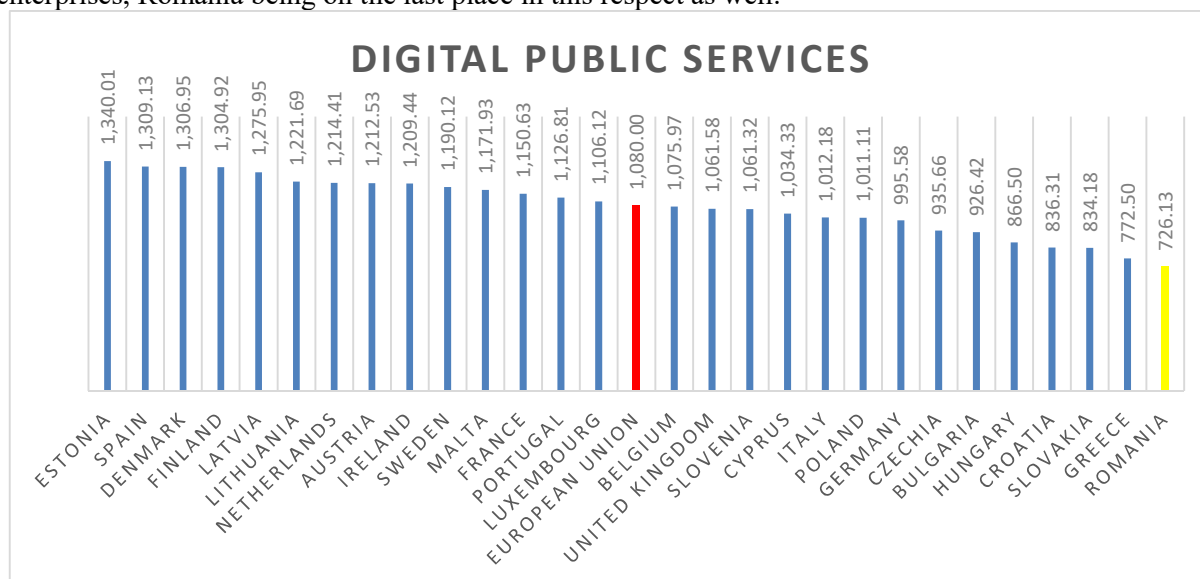
Source: DESI

Table 4. DESI values for Integration of Digital Technology in European countries

Romania has the lowest performance in terms of digital public services, it is at the bottom of the ranking in the EU. In fact, the only online interaction between public authorities and the population is the submission of forms, according to the latest DESI report.

In contrast, Romania ranks 8th in terms of users of e-government services, with 82% of Internet users, compared to the EU average of 67%. However, this high level of online interaction between public authorities

and the population only targets internet users who have to submit forms. The low scores obtained on pre-filled forms and services performed entirely online, in which the country ranks 28th, indicate a systemic problem in terms of the quality and usability of the services provided. There was no improvement of digital public services for enterprises, Romania being on the last place in this respect as well.



Source: DESI

Table 5. DESI values for Digital Public Services Technology in European countries

The causes that led to a weak development of electronic public services in Romania were: the lack of an efficient and effective IT architecture, the lack of information systems necessary for central public institutions for the operationalization of electronic public services; the inadequacy of e-government and human resources specialists in the IT departments of public institutions and authorities and, consequently, the skills needed to develop and maintain electronic public services and the lack of a uniform and effective legislative and procedural framework to support electronic public services.

In Romania, a series of IT platforms available to citizens are currently active:

Online Trade Register (ONRC portal);

- The court portal (portal.just.ro);
- The system of the National Agency for Cadastre and Real Estate Advertising for issuing land book extracts (ancpi.ro);
- The national electronic system for online payment of taxes (ghiseul.ro).

Starting with 2020, the listed IT platforms have been streamlined and expanded, as well as other relevant platforms at national level, to strengthen e-government (PCUe), web platforms and applications have been created to provide correct support and information for citizens. and Covid-19 pandemic management companies. Among the IT systems implemented by ADR, in the event of the COVID 19 pandemic, are:

- <https://stirioficial.ro/informatii> - the official page of the government regarding the real information in the fight against Covid 19;
- <https://cetrebuiasafac.ro/> - the official website of the government with information on how citizens should act if they have symptoms or are sick;
- <https://www.datelazi.ro/> - the official page of the government with official data about the official situation about the disease situation, centralized by regions;
- <https://aici.gov.ro/> - the official page of the government for uploading online the documents intended for registration, addressed to public institutions that do not have their own online registration system;

- <https://diasporahub.ro/> - the official page of the government for Romanian citizens and support groups from abroad in emergency situations;
- <https://rohelp.ro/ro/> - the official page of the government for non-profit organizations actively involved in limiting the effects of the Covid-19 pandemic.

2. Streamlining the institutions of the public system

In the public administrations in the last year the process of implementation of some digitization projects of the institutions providing public services has been accelerated and administrative processes have been streamlined, in relation to the citizens, the business environment and inter-institutional.

Implement the “once only” principle and the interoperability architecture based on an API management provided by all public institutions that have national data registers. The aim is to identify all the basic registers and create a mechanism for amending this list, ensuring the technical infrastructure so that access to the basic registers can be achieved quickly, securely and flexibly, ensuring the confidentiality of data;

In parallel, the electronic signature of public administration officials will be generalized and used by all population, so that they can communicate digitally with companies, reducing reaction time and early correction of possible mistakes.

Introduction of an electronic identity system that will allow full remote interaction with the public administration, with the clear effect of reducing costs, using a unique identity and an SSO (single Sign On) authentication mechanism, including enrolment on this online identification platform being able to be done remotely. The result will be a system that allows zero interaction at the counter for citizens from the moment of enrolment, achieving a reduction in the costs of implementing new platforms and a high level of security for all public services offered online. This e-identity scheme will be notified at EU level and integrated with the European cross-border communication node eIDAS. The national electronic identity system will be open, ready to integrate new types of identities and including to ensure the transition to systems that involve the use of SSI (Self-sovereign identity) mechanisms;

Effective operationalization of a single electronic contact point for citizens and companies by restoring the PCUe and integrating it with the national payment system, ghiseul.ro, in a single platform for citizens. By including all available electronic services and making it accessible through the national e-identity scheme, according to the European regulatory framework, public electronic services will be available and accessible and cross-border based on the eIDAS node. In addition, this approach will generate an increase in the visibility of public services, having as main effect the decrease of the time for the search for information by the companies and the resolution of the different cases.

3. Economic digitalization

For Romania, the potential economic benefits of digitalization would bring a contribution of 42 billion Euros to GDP by 2025. The Romanian economy is dominated by 99% of small and medium enterprises, the speed with which they can be digitized and the digitization that they can achieve, being two elements with far-reaching effects on Romania's competitiveness on the European and global market. Due to the rapid growth of the technology industry at EU level (five times faster than the rest of the European economy in terms of gross value added), digital technologies are disruptively impacting the market dynamics at an increasing speed, creating unprecedented opportunities for European and implicitly Romanian SMEs, enabling companies to innovate, grow and compete using new models and solutions in previous generations of technologies.

Industry can benefit from an indirect effect of digitalization, but with a major impact on the ability of companies to converge on the principles of the digital economy through new business models, business models and a new managerial vision in a new paradigm based on digital innovations and technologies.

The poor level of economic digitalization is also caused by the fact that the process of digital transformation of SMEs has often been misunderstood and reduced to numerous financing programs, assimilated only to simple purchases of IT systems and equipment.

The digital transformation process involves fundamental changes on different levels of a business:

- at process level (use of an increased percentage of automation in production and integration of data in processes and supply chains, leading to increased productivity and resource efficiency),

- at product level (incorporation of ICT in as many product categories as possible) and last but not least
- at the level of business models (smart and connected products lead and adapt to changes in customer behaviour).

The digital economy has the potential to generate major changes and opportunities in a wide variety of fields, such as administrative, social, educational, medical, but also in emerging fields. Increasing Romania's potential to create and innovate digital technologies and, on the other hand, to adopt and use them will generate strategic value on several levels.

The Romanian economy must make a transition as fast as possible to the new economy (Digital Economy) capitalizing on all the advantages of the new industrial revolution. Most SMEs in Romania (1/3 of European SMEs) invest mainly in digital products that allow business optimization, operations, such as Customer Relationship Management (CRM) or Enterprise Resource Planning (ERP), focusing -is on optimizing existing models and processes, without a substantiated business analysis, a simplification of processes, data collection or the use of emerging technologies such as Artificial Intelligence, Cloud Computing, IoT, Blockchain, etc. The fields with the greatest potential for automation in Romania and where we can get the greatest impact are: agriculture, manufacturing, trade and transport.

The European Investment Bank shows that approximately 70% of European SMEs that have implemented a digitization project have used the infrastructure of the regional innovation hub in the region in which they operate, whether or not the SME has a digital profile. Thus, the European Digital Innovation Hubs are the main trans-European tool and vector that the European Commission together with the Member States envisages to drive both innovation and the digitalisation of the economy and the digitalisation of European public administration. Designed as public-private partnerships for digital development, these hubs will be funded mainly through the Digital Europe Program and European Regional Development Fund allocations at the level of each European region and will network to achieve the above-mentioned objectives. up. The Digital Innovation Hubs will highlight the technological and regional innovation potential to develop digital technologies and tools for fields with a high degree of adoption: industry, public administration, agriculture, healthcare, etc.

The strategic role of the Digital Innovation Hubs is also to define from a geostrategic point of view the role of Romania on a European map, but also a global one of digitalization and technological innovation. Digital Innovation Hubs will become strategic vectors, connected in the European network of Digital Innovation Hubs capable of generating and transferring know-how and generating value in the economy and society.

4. The level of digital education of the population

An important aspect for government action is the development of digital skills in all segments of the population and the workforce. According to the Society and Digital Economy Index published by the European Commission (DESI), here too Romania is at the end of the European ranking, with less than 30% of the population having basic digital skills.

In 2020, the COVID-19 crisis has led education and training institutions around the world to move to distance / online teaching. In a few weeks, the educational landscape in Europe and around the world has changed fundamentally. Teachers, students and parents were forced to adapt quickly to the situation.

For Romania, the COVID-19 pandemic highlighted significant gaps and deficiencies in terms of digital skills, connectivity and the use of technologies in education. In addition, according to the latest Index of the Digital Economy and Society, 42% of Europeans do not have basic digital skills, and the European labor market faces a significant shortage of digital experts. Moreover, the COVID-19 crisis has drawn attention both to the opportunities and risks of online life and to the need for a better and safer digital environment for all, especially for young people under 18.

At EU level, the European Commission, according to the European Competence Agenda for Sustainable Competitiveness, Social Equity and Resilience), has the following objectives: strengthening sustainable competitiveness; ensuring social equity; increasing social resilience; promoting lifelong learning; job skills training; resilience of the economy at EU level.

In the case of Romania, the issues followed by government measures to improve digital skills in education will be the following: investments will be made in the basic digital skills of teachers in regular training programs and in the transfer of IT resources to problem areas and evaluation and modifying the school curriculum to include

both age and school-specific digitization hours and the implementation of a digitized teaching mode for all subjects.

5. Conclusions

Through specific mechanisms and activities, it will be necessary to ensure the increase of Romania's capacity to develop and integrate digital innovations and technologies in order to digitize for several fields and sectors of activity, to increase the global visibility, but also to capitalize on the strategic potential that Romania has in the IT&C field. These actions will contribute to increasing the quality of life of citizens and reducing costs for companies, by simplifying the interaction with state institutions.

The changes that took place, such as the obligation imposed on public institutions by GEO 38/2020 to accept documents in electronic form and digitally signed, the possibility to send documents and make payments online through the ghiseul.ro or here.gov.ro platforms - represents only the digitization of some services, and not of the administration, which implies a rethinking of processes, interaction, services, etc.

References:

- [1] C. Lianu, R. Bucea-Manea-Tonis, R. Bucea-Manea-Tonis, S. C. Dobre, C. Lianu - Innovation and digitalization from a managerial perspective, Economic Publishing House, 2020
- [2] John Coleman - Parents and digital technology. How to raise the connected generation, Heral Publishing House, 2017
- [3] N. Isăilă - The use of information technology in the economic environment, University Publishing House, 2012
- [4] Kagermann, H., W. Wahlster and J. Helbig, eds., 2013: Recommendations for implementing the strategic initiative Industrie 4.0: Final report of the Industrie 4.0 Working Group
- [5] Heiner Lasi, Hans-Georg Kemper, Peter Fette, Thomas Feld, Michael Hoffmann: Industry 4.0. In: Business & Information Systems Engineering 4 (6), pp. 239-242
- [6] Marr, Bernard. "Why Everyone Must Get Ready For The 4th Industrial Revolution". Forbes. Retrieved 2018-02-14.
- [7] Mueller, Egon; Chen, Xiao-Li; Riedel, Ralph (2017). „Challenges and Requirements for the Application of Industry 4.0: A Special Insight with the Usage of Cyber-Physical System”. Chinese Journal of Mechanical Engineering. 30 (5): 1050–1057. doi:10.1007/s10033-017-0164-7.
- [8] Lin, K.C.; Shyu, J.Z.; Ding, K. A Cross-Strait Comparison of Innovation Policy under Industry 4.0 and Sustainability Development Transition. Sustainability 2017, 9, 786.
- [9] Wang, S.; Wan, J.; Li, D.; Zhang, C. Implementing smart factory of industrie 4.0: An outlook. Int. J. Distrib. Sens. Netw. 2016, 12, 3159805.
- [10] Aquilani, B.; Silvestri, C.; Ruggieri, A. Sustainability, TQM and value co-creation processes: The role of critical success factors. Sustainability 2016, 8, 995.
- [11] Klietk, T.; Misankova, M.; Valaskova, K.; Svabova, L. Bankruptcy Prevention: New Effort to Reflect on Legal and Social Changes. Sci. Eng. Ethics 2018, 24, 791–808.
- [12] Klietkova, J.; Misankova, M.; Klietk, T. Bankruptcy in Slovakia: International comparison of the creditor's position. Oecon. Copernic. 2017, 8, 221–237.
- [13] https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age_ro
- [14] ec.europa.eu/digital-single-market/en/digital-economy-and-society-index-desi
- [15] <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12453-Digital-Education-Action-Plan/public-consultation>
- [16] www.consilium.europa.eu/ro/policies/a-digital-future-for-europe/
- [17] <https://eufordigital.eu/ro/digitising-industry-best-practices-to-promote-the-digital-transformation-of-smes-in-traditional-sectors-of-the-economy/>