THE DIGITALIZATION STRATEGY OF THE PUBLIC SECTOR

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Abstract

The main objective of the modernization process of the public administration, a process that takes place in all democratic states, and currently in the member states of the European Union I is given a major importance, is the improvement of public services distributed to the population. To this end, the aim is to simplify administrative procedures by emphasizing digitization, thus facilitating access to information between citizens and public authorities in both directions.

The digitalization strategy of the public sector prepares the management of change, removes administrators' resistance to structural changes, and since digital has become the main means of communication between administration and users, that strategy includes not only the expansion of technical equipment - hard and networks - but also, of even greater importance and greater, the emphasis on professional training, basic or specialized, in the IT field.

The article presents the directions for immediate and/or longer-term action, namely the improvement of the quality of public services by connecting administrations throughout the country with users, individuals or legal entities, and, in a program that will take place over a longer period, increasing the effectiveness of the entire modernized system, which will be reflected in an improvement in quality and productivity.

Keywords: *public administration, simplify administrative procedures, digitalization strategy, quality of public services, increasing the effectiveness.*

1. Instead of introduction. Numerical transformation - purpose and means of modernizing economic and social activity

As a generic term, digitization means the storage of data and their organization so that they are accessible for analysis, thus allowing the use of results in the management of organizations' activities, as well as the forecasting of micro, meso and macroeconomic developments in the short, medium or even long term.

The main challenges of the digital transformation for public authorities are represented by the modernization and optimization of the working environment of civil servants and the way they interact with the public, both in terms of taxation - the unique user code to benefit from administrative services - and monitoring of public expenditures. At the same time, digitization promotes collaborative work within communities, establishing the electronic exchange of data between administrations through the implementation of appropriate digital tools. Also, the use of digital tools makes it possible to streamline communication between teams, so that both workflow and information flow are improved through real-time data transfer, leading to increased productivity and reduced costs.

In this way, the digital transformation of the state, an extensive process with major implications, which can be qualified as a technical revolution, but also in social relations makes possible the development of an ambitious and very necessary project in the current period: rethinking the role of public authorities in the modern state: the modes of action, the relationship with the user, decision-making, collaboration with third parties, etc.

An important extension of digitization is the so-called artificial intelligence (AI). Although there is no common international definition of artificial intelligence (AI), in general terms, AI refers to systems that, based on a large amount of data, can perform various tasks with a certain degree of autonomy. This includes the use of algorithms to identify similarities and patterns, as well as the classification and use of data for analysis, management and forecasting purposes, as well as - a function of great importance - various types of machine learning.

The digitization of the activity of public administrations is reflected on multiple levels: in the citizen's relations with public services; in the efficiency, as well as the good functioning of the respective services, such as public transport, public security and health services, public utility services, such as water, sewage, gas and

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electricity, waste management, public lighting, etc.

The digitization of administrations in relations with citizens implies the optimization of their experience in public services, which depends both on the administrative procedures that the citizen must follow, and on the interactions between him and the different public actors, together being involved in the digital transformation of the public sector. In this sense, the authorities promote digitization as a vehicle for administrative simplification, transparency, modernization of public administration, rationalization of regulations and redesign of existing legislation.

The involvement of citizens in the digital transformation of relations with administrations exerts a substantial pressure on them, to which are added the internal constraints specific to the public sector, such as budget pressures, the need to improve organizational efficiency and the need to adapt to societal changes.

In the field of public transport, the population wants cheaper, but more comfortable, faster and safer public transport, as well as more connected journeys, and public authorities must respond to the ever-increasing demands of citizens for greener public transport, respecting, at the same time, international commitments to reduce CO2 emissions. Thus, the free availability of information about the location of means of transport - using a combination of technologies that makes it possible to determine their position in real time - has led to the launch of mobile applications to improve the quality and accuracy of travel planning and to offer different multimodal routes depending on individual passenger preferences.

The main public actors in the health and social security sectors are the relevant ministries in each country, developing and implementing policy for their areas of competence, guaranteeing the social security of citizens and responding to risks and needs, throughout life, in the fields of illness, old age, dependency, disability and work accidents.

The improvement of health services - through increasingly sophisticated equipment and treatments, including, in large part, digital technology and artificial intelligence, which achieves early detection of symptoms, diagnosis and tracking of activities - leads to a continuous increase in health expenditures, which exerts considerable pressure on the current organization of this sector.

Public utility services refer to the production and distribution of water, gas, electricity, waste management, public lighting, etc. - essential activities for the quality of life of the community. These are commercial public services, defined as institutions that respond to a market logic, having a public service mission, being regulated and controlled by the central or territorial public authorities, the financing being carried out through tariffs and/or from public funds. The digitization of these services has registered a major - and continuous - expansion, if we only mention the energy sector, the energy security of each country being the basic element both for the economy as a whole and for maintaining an appropriate level of quality of life.

2. The role of digitization for increasing the performance of public administration

The informational process developed by the public administrations naturally used forms on paper for the collection of data necessary for the analysis and management of public services. This has always meant a high consumption - expensive and harmful to the natural environment - of wood, which causes the authorities to develop and implement technological strategies that allow the collection and processing of data without this consumption. Analogue techniques were used first – today, to be sure, many analogue services remain in place, but online channels are being added to keep non-editable PDF forms available online – but the move to digitization is increasing. This means, in addition to the classic collection and processing operations, the realization of efficient online interactions, automatic processing and transmission to the responsible public administrations.

In recent years, in most countries of the world - in particular in the member states of the European Union - against the background of the Covid-19 pandemic, when public authorities considered it necessary to introduce quarantine in order to limit the spread of the influenza virus, one of the most used solutions to did not completely interrupt economic activity was online work, which required an extension of the digitization of administrative processes and services, which could thus continue to be provided. The whole process of digitization could be accentuated by the introduction of an increasing proportion of artificial intelligence (AI) and automated decisions in the public sector, which, however, reveals some more delicate aspects, such as those regarding accountability, transparency and risk discrimination. Therefore, the use of AI in the public sector must be carefully regulated in order to protect individual rights and avoid negative consequences for the entire community, consequences that may arise due to poor monitoring of the impact of the authorities' decisions.

Equally important is the ability of civil servants to correctly use IT techniques, including AI, and in this sense the member states of the European Union - in full process of consolidating the introduction of digitization in the entire economic and social life - recognize the fact that they must invest in consolidating the capacity of civil

servants and all other agents from both the public and private sectors. Numerous European national strategies explicitly address the issue of vocational training in the IT field and, moreover, investments in the education sector represent a way to ensure the availability of skilled labor in the future.

3. The digitalization process in the European Union

Digitization of the public sector is considered the main tool for increasing efficiency and, therefore, reducing costs. In this sense, stimulating the economy and creating jobs are the most important motivating factors and the central point of national IT and AI strategies.

Most European national strategies aim to expand the use of digital techniques and artificial intelligence in the public sector, including to provide better services to citizens and entrepreneurs to improve efficiency, by automating routine government processes and coordinating the activities of public authorities at central and territorial level.

In addition, in all development plans that include the implementation of AI there is a theme considered of major importance, namely investments in research and development to benefit from technological advances. That is why some member states have created innovation centers and laboratories to encourage public-private partnerships and to encourage collaboration between economic-social sectors at national level, as well as transnationally, in the European Union and/or outside it.

In order to analyse the stage of the digitalization process in each European country, the European Commission proposed two multidimensional indicators that can highlight the progress of the digitalization process, considered even at the international level - for example, at the World Economic Forum in 2017, it was stated that the economy of the future is closely correlated with the implementation of the IT technique in all sectors of the national economy - as an essential condition for macro-social development in the 21st century.

Thus, the DESI (Digital Economy and Society Index) and I-DESI (International DESI) indicators are built following the evolution of four main axes: a population with digital skills and highly qualified digital professionals, secure and sustainable digital infrastructures, the digital transformation of companies and digitalization of public services. If DESI presents the progress of the member states of the European Union in terms of economic development and the implementation of digitization at the national level and/or of some groups of European states, I-DESI - which also includes macroeconomic indicators different from the European index - allows the comparison of the level of digitization in The European Union with 18 other countries on the world map: Australia, Brazil, Canada, Chile, China, Iceland, Israel, Japan, Mexico, New Zealand, Norway, Russia, Serbia, South Korea, Switzerland, Turkey, the United Kingdom and the United States .

The evolution of the DESI index is the subject of an annual report, published by the European Commission, on the basis of which the progress made by European states in the introduction of IT and AI techniques is analysed, which, in turn, will be used to substantiate and, then elaborate the national and community macroeconomic development strategies with a medium and even long-term horizon.

The methodology for determining the DESI indicator uses the values related to some indicators provided by Eurostat - the official statistical website of the European Union -, as well as a series of other indicators - broadband coverage, retail prices for broadband, Benchmark e-Government, the use of digital technologies -, built by leading institutions such as IHS Markit, Omdia, Point Topic, Empirica, Capgemini and verified by national regulatory authorities in each member state, as well as Ipsos and iCite, for survey results that have been reviewed by Digital Single Market Strategic Group.

With the help of the DESI index, a comparison is made of the stage at which the digitization process was in each member state, a comparison that follows the five dimensions presented by the DESI:

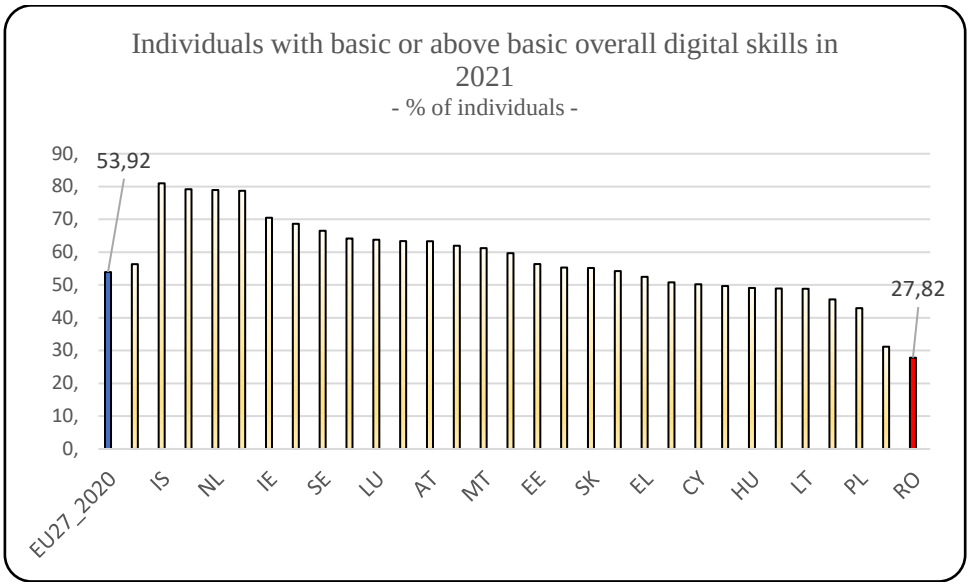
1. *Connectivity*, which shows the deployment of broadband infrastructure and its quality. In the Digital Economy and Society Index (DESI) 2022 report, drawn up by the European Union, it is stated that, despite some general progress in 2021, in many member states a significant gap between urban and rural areas persists, and performance levels vary as speed and capacity. As a target of the digitalization strategy at the level of the European Union for the year 2030, it is expected that economic agents - individuals and legal entities - will end up being served by next-generation broadband networks, with performance at least equivalent to 5G.

2. *The digital skills of human capital*, which must be sufficient to take advantage of the opportunities offered by a digital society.

The major role of employees' digital skills is unanimously recognized, so that one of the most important actions that public and private managers must organize is to ensure the skills of the staff to use IT and AI techniques, through training programs and curricula in appropriate educational programs.

According to the information collected by Eurostat, in the member states digital skills differ considerably from one country to another. Romania ranks last in the European Union in terms of the use of IT techniques and

artificial intelligence, which requires the introduction of broad programs in the national digital strategy that can be addressed to numerous categories of the population - people of different ages and professions, from the environment urban and rural etc.



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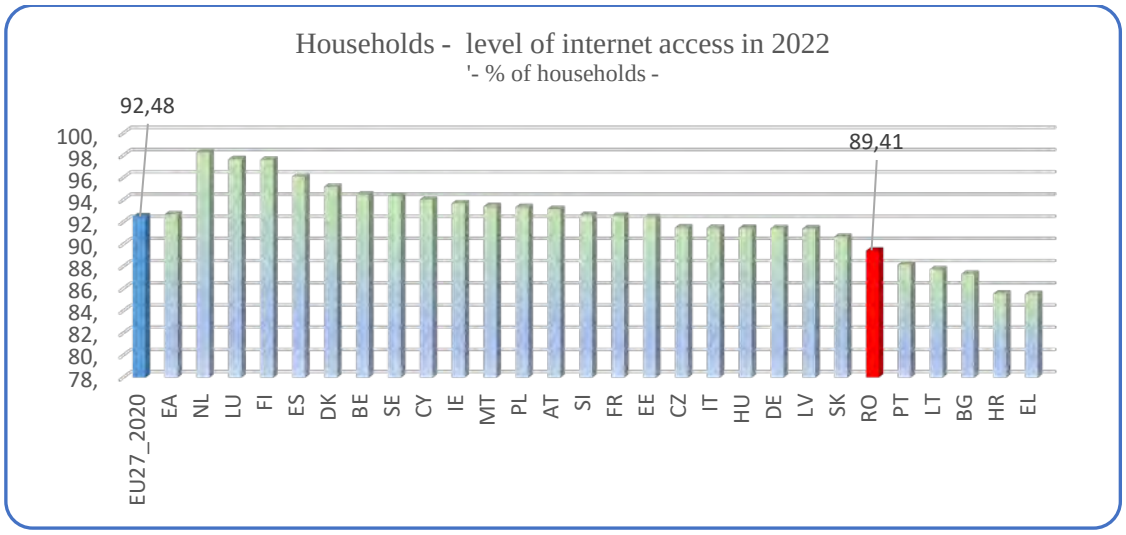
3. *The use of the Internet by citizens* represents another important dimension for the implementation of digitization, because it provides the necessary devices to access IT.

According to Eurostat, in 2022 the number of households with access to the Internet, - regardless of which device: computer, mobile phone, etc. - increased, one of the explanations being the need to communicate during the Covid-19 pandemic, when quarantine was imposed for reasons of health security. Among the member countries of the European Union, Romania is in a somewhat more modest position, although the spread of smart phones has increased in recent years.



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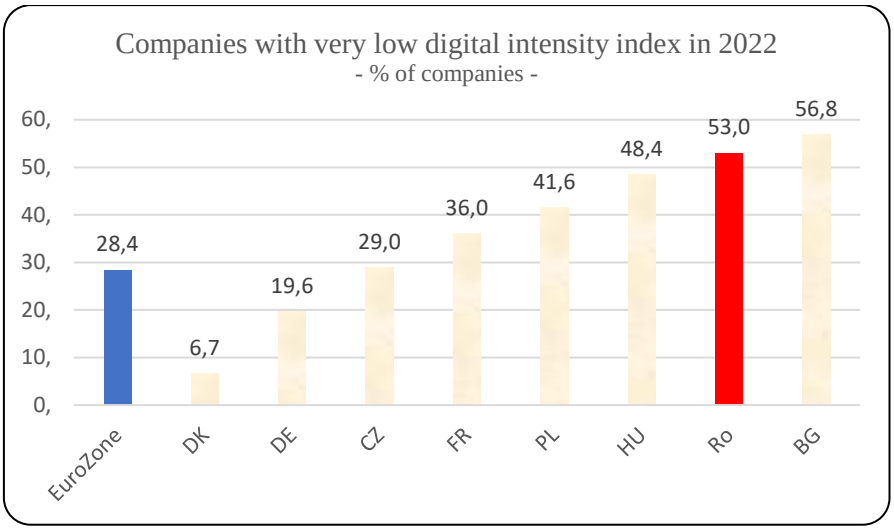
4. *The integration of digital technology* refers to the digitization of companies and the most extensive development of online commerce. The economic modernization policy promoted in the European Union, with a time horizon of 2030, requires that at least 90% of small and medium-sized enterprises implement at least four of the twelve digital technologies currently used by large companies or those in profile, among which include e-commerce, various software systems for managing company resources, social media, AI, cloud computing, etc.



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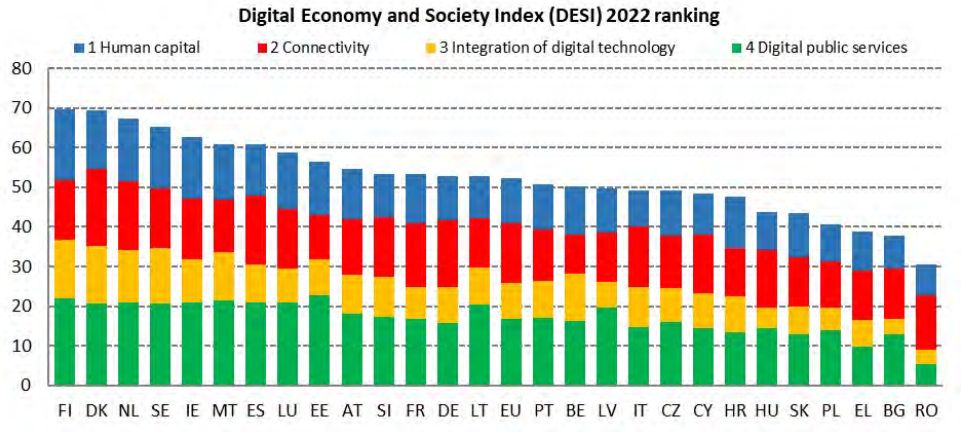
According to the DESI 2022 report, about a third of European companies do not use numerical techniques at an appropriate level, but significant differences are found between the member states. In the graph above, it can be seen that there are member states where companies have implemented digitization to a large extent (Denmark, Germany, etc.), but also European countries where IT is used on a small scale, one of these countries being Romania, in that more than half of the companies present a very poor level of use of IT techniques.

5. *Digital public services*. The DESI indicator on the digitization of public services covers the services that will benefit the various economic actors - individuals and/or legal entities - provided in the public sector by means of IT techniques, generically called e-Government. This name refers both to the instruments implemented to improve citizen and/or entrepreneur relations with public authorities, as well as to the broad approach to the management of the public institutions involved (human resources management, materials, public procurement, proposals for field development strategies, etc.). The targeted digital tools present a great diversity, but they can be classified according to the specifics of the relationships they monitor in four categories: (i) G2C - from the government to the citizen; (ii) G2B - from government to enterprise; (iii) G2G - from government to government; (iiii) G2E - from government to employee.

In the DESI 2022 report, the digital economy and society index, it presents the progress registered in the European Union member states in the digital field during the Covid-19 pandemic, but highlights that there are still directions for intervention to reduce the gaps, for example in terms of skills informatics, the implementation of IT techniques in SMEs, as well as advanced 5G networks. The facility for recovery and resilience, developed at the level of the European Commission for the programming period 2021-2027, respectively the programs drawn up by each member state benefit from approximately EUR 127 billion in funding for economic and social recovery and growth, including digitization.



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At the same time, the DESI index shows the big differences between the member states regarding the status of the key areas of digitization. Thus, in 2022, the Nordic states keep their first places in terms of the digitalization of the economy, with Romania and Bulgaria still in the last positions.

To remedy this situation, Romania's Recovery and Resilience Plan (PNRR) distributes 20.5% of Romania's total allocation (EUR 5.97 billion) to the country's economic and social digitization objective, mainly to component 7 (Digital Transformation), but also in all other components, each including measures aimed at implementing IT in the specific field of activity.

4. Conclusions

Since the beginning of computer technology, in the period immediately after the Second World War, public authorities have considered that administrative modernization can benefit from the introduction of digitalization, which was achieved relatively slowly, the material and professional training costs being considered high compared to the perceptible benefits, but due to the political will to improve services, the process gradually intensified.

Currently, the digitalization of the public sector is an essential condition for adopting a citizen-centric approach, but it also makes it possible to considerably increase the efficiency and effectiveness of an organization, being able to satisfy the budgetary constraints faced by public institutions due to savings - financial, human, working time - which can be realized and later reinvested to improve the quality of life of the citizen.

Through internal digital transformation, a public institution in which the automated data management process was implemented offers the possibility of much easier access to the information circulated in various programs that manage the economic and social sectors, decision-making is facilitated by the digital processing of large quantities of data, thus improving the internal efficiency of the institution, but also offering employees multiple possibilities to use IT techniques.

The numerical tools used in the respective processes are of great diversity and increasingly sophisticated: Artificial Intelligence, Internet of Things, robotics, chatbot, virtual reality, etc., which once again underlines the need for high-class professional training of employees.

A much-debated issue is the digital maturity of each state, region, sector, etc. in part. This concept refers to the degree of competence, preparation and organizational availability of public administrations to be able to implement the appropriate programs for a high-performance digitization with sustainable costs, all the more so as the innovations in the field are very fast: artificial intelligence, blockchains, government as a platform or mesh networks, smart cities, but in the conditions where they want to keep, for cost reasons, the existing IT systems.

In the European Union, many member states are increasingly using technologies based on artificial intelligence in the provision of public services, but, in this case, it is necessary to monitor by the competent institutions the lack of transparency that occurs with the use of the algorithm or automated decision-making in the public sector. In this sense, in 2020 the European Commission service responsible for monitoring the development, introduction and impact of artificial intelligence for Europe (AI Watch) was created, which prepares and publishes a report mapping the use of artificial intelligence in public services in the member states of the EU.

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